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Original Communications.

COMPLICATIONS OF MALARIAL FEVER.

*Quartan Malaria Complicating Chronic Parenchymatous Nephritis, Æstivoautumnal Malaria Complicated by Bronchopneumonia.**

By JOHN M. SWAN, M. D.,
Philadelphia,

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(From the Polyclinic Laboratories.)

The case of quartan infection is of interest because it was accidentally discovered in a patient admitted to the Polyclinic Hospital, in the service of Dr. A. A. Eshner for nephritis. When it was learned that the man had recently landed in Philadelphia from Jamaica, his blood was studied and was found to contain a single generation of quartan parasites. The patient had not had a chill, but his temperature had registered 99.4° F. at 8 a. m. on October 9th. Seventy-two hours later the temperature registered 100.4° F., without a chill; and at the next seventy-two hour period there was a chill, and the temperature reached 101.4° F. On this date an examination was made to determine the relation of the formation of the segmenting forms of the parasite to the paroxysm. The paroxysm was due, according to our calculations, on the 15th at 8 a. m. At 10 p. m. on the 14th the blood contained presegmenting bodies and a few rosettes. At 2 a. m. on the 14th it contained rosettes, presegmenting bodies and small rings. At 4 a. m. it contained small rings, rosettes, and gametocytes. At 6 a. m. it contained small rings and gametocytes. At 8 a. m. it contained small rings in moderate numbers. It would appear from the results of this examination that the paroxysm in quartan infection does not follow sporulation so closely as it does in the benign tertian infection.

The nephritis in this case was considered to be independent of the malarial infection, because the cure of the latter had no influence on the former. The return of the dropsy, with chest pain, chills, cough, and blood tinged expectoration, from which the patient died, was unaccompanied by the recurrence of the sporulating parasites in the peripheral blood; and examination of bone marrow after death failed to show malarial pigmentation.

The relation between malarial infection and

nephritis has been thoroughly studied by Thayer.¹ As a result of the analysis of 758 cases of malarial fever seen in the Johns Hopkins Hospital, Thayer concluded, first, that albuminuria is a frequent occurrence in the malarial fevers of Baltimore, having been found in 46.4 per cent. of the cases. Second, that albuminuria is more frequent in cases of infection with the malignant tertian parasite than in infections with the other parasites. In the former albuminuria was found in 58.3 per cent. of the cases; in the latter in 38.6 per cent. of the cases. Acute nephritis occurred in 2.7 per cent. of the cases treated in the hospital wards, and in between 1 and 2 per cent. of all cases seen. Third, that the frequency of albuminuria and nephritis in malarial fever, while somewhat below that observed in the more severe acute infections, such as typhoid fever, scarlet fever, and diphtheria, is considerable. Fifth, that there is reason to believe that malarial infection, especially in the more tropical countries, may play an appreciable part in the ætiology of chronic renal disease.

CASE I.—The patient was a negro, male, aged twenty-three years, who was admitted to the Polyclinic Hospital (No. 14,703) on October 7, 1907, complaining of "cold headache" and pain "all over his body."

There was nothing of importance in his family history.

Past History.—He had had whooping cough and chicken-pox in infancy, and smallpox when he was seven years old. He denied syphilis. He had an urethral discharge two years before. On two occasions, five years before and three years before, he said that he had had attacks similar to the present one, characterized by marked swelling of the face and feet, of the trunk to less extent, and severe headaches. He said that these attacks followed "taking cold." He was born in Jamaica, and came to the United States from the West Indies six months before.

History of the Present Condition.—The patient had been ill for one week with the symptoms as described. His face, feet, and abdomen commenced to swell, and these symptoms had continued. He had had three watery bowel movements daily for the last week. On examination the patient was found to be a well developed negro male. His face, eyelids, chest, and abdomen were oedematous. There was no oedema of the legs. The tongue and mucous membranes were pale. The conjunctivæ were pale but there was no jaundice. The lungs were negative. The liver and the spleen could not not be palpated. The heart was not enlarged to percussion. Its apex was visible and palpable. There was an impurity in the systolic sound at the apex; but no accentuation of the second aortic sound. The abdomen was much distended and was dull on percussion. It seemed somewhat tender on palpation. A distinct though slight fluid wave could be felt on bimanual examination. The secretion was scanty, and the patient was rather surly. An examination of the urine showed: Reaction, alkaline; color, pale straw; specific gravity, 1.012; al-

*Read at the sixth annual meeting of the American Society of Tropical Medicine, held in Washington, April 10, 1909.

1. *Ann. Surg.*, 1906, 43: 126.

bumin, 0.4 per cent. (Esbach); no glucose. There was a slight flocculent sediment which was composed of pus cells, granular casts, and renal epithelium. A second urine analysis showed: Reaction, acid; specific gravity, 1.012; albumin, 0.4 per cent. (Esbach); no glucose. There was a white sediment composed of numerous dark and pale granular, epithelial, and leucocytic casts, red blood corpuscles, pus cells, and renal epithelium. A blood examination showed: Erythrocytes, 2,750,000; leucocytes, 8,400; hæmoglobin, 35 per cent. (Dare); ratio, 1 to 327; color index, 0.63+. Differential leucocyte count, polymorphonuclear neutrophils, 62.6 per cent.; lymphocytes, 16.2 per cent.; large mononuclears, 15.8 per cent.; transitionals, 0.6 per cent.; eosinophiles, 4.4 per cent.; myelocytes, 0.4 per cent. There was marked anisocytosis and granular degeneration of the erythrocytes. In counting 500 leucocytes, 59 quartan parasites were found (*Plasmodium malariae*).

Examination of the faces showed a few ova of trichophyalus trichiuris. The oedema of the scrotum had disappeared on October 11th. On the 12th a urine analysis showed: Total quantity for twenty-four hours, twelve ounces +; reaction, acid; color, straw; specific gravity, 1.016; albumin, 0.4 per cent. (Esbach). Numerous pale and dark granular casts, and renal epithelial cells. On October 13th the oedema of the face, eyelids, and trunk had diminished. A urine analysis showed: Total quantity for twenty-four hours, thirty-four ounces; reaction, slightly acid; color, pale straw; specific gravity, 1.012; albumin,

posed of granular and epithelial casts, pus cells, and epithelial cells.

On October 31st urine analysis showed: Reaction, acid; color, pale straw; specific gravity, 1.012; albumin, 0.3 per cent. (Esbach). There was a fine flocculent sediment which contained granular and epithelial casts, pus cells, and epithelial cells. A blood count showed: Erythrocytes, 2,144,000; leucocytes, 8,000; ratio, 1 in 268; hæmoglobin, 35 per cent. (Dare); color index, 0.81+. A differential count gave polymorphonuclear neutrophils, 67.4 per cent.; lymphocytes, 23.0 per cent.; large mononuclears, 3.6 per cent.; transitionals, 0.6 per cent.; eosinophiles, 4.8 per cent.; and basophiles, 0.6 per cent. One degenerated gametocyte was seen in counting 500 leucocytes.

On November 5th the urine analysis showed: Total quantity for twenty-four hours, forty ounces; reaction, alkaline; color, pale straw; specific gravity, 1.012; albumin, 0.3 per cent. (Esbach); no glucose. There was a fine flocculent sediment which contained pale and dark granular casts, triple and amorphous phosphates, ammonium urate crystals, few epithelial cells, and pus cells. The patient complained of no insomnia, headache, nor other discomfort; his bowels moved freely; the oedema was still present about his eyes but was not noticeable elsewhere. He was discharged.

He was readmitted to the hospital on November 24th (No. 14,897), complaining of pain in left lower axillary region, at times sharp, which he had noticed for two weeks. He also complained of discomfort in the epigastrium. He

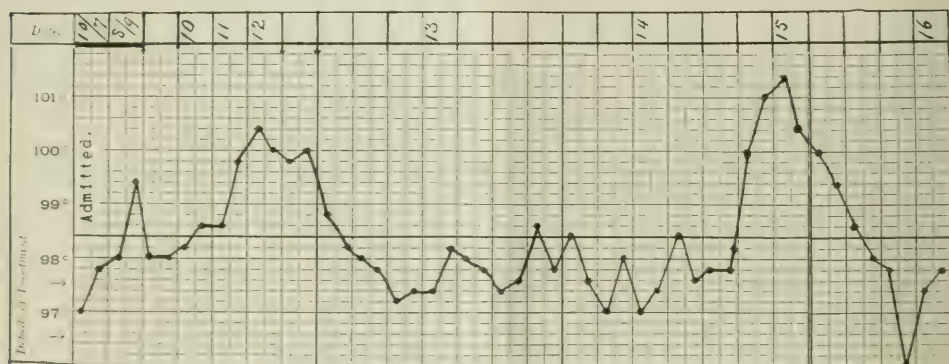


FIGURE 1.—Case of quartan malaria.

0.35 per cent. (Esbach). There was a fine flocculent sediment, which contained granular casts, epithelial cells, amorphous phosphates, and urates. On October 14th, the patient had a chill with a temperature of 101.2° F. at noon. Examination of the urine showed: Total quantity for twenty-four hours, sixteen ounces; reaction, feebly acid; color, pale straw; specific gravity, 1.012; albumin, 0.35 per cent. (Esbach). There was a fine flocculent sediment, which contained granular and epithelial casts, pus cells, and epithelial cells. The casts seemed fewer in number than on previous examinations. On October 15th the oedema was less, and the patient said he felt better. He had two large yellow stools. A urine analysis showed: Color, straw; specific gravity, 1.012; albumin, 0.35 per cent. (Esbach); granular and epithelial casts and leucocytes. Total quantity for twenty-four hours, twenty-five ounces.

On October 21st urine analysis showed: Reaction, acid; color, straw; specific gravity, 1.012; albumin, 0.31 per cent. (Esbach); pus cells, epithelial cells, amorphous urates, and granular casts. Total quantity in twenty-four hours, thirty-one ounces. Oedema greatly lessened, noticeable to slight extent only around eyes and face. Stools varied from two to three daily. On October 22nd there was a rise of temperature above normal since October 14th.

On October 25th urine analysis showed: Reaction, acid; color, straw; specific gravity, 1.012; albumin, 0.31 per cent. (Esbach); pus cells, epithelial cells, amorphous urates, and granular casts. Total quantity in twenty-four hours, thirty-one ounces. Oedema greatly lessened, noticeable to slight extent only around eyes and face. Stools varied from two to three daily. On October 26th there was a rise of temperature above normal since October 14th.

had had eight or ten chills since November 5th, and had been confined to bed most of the time. He had had a moderate cough for two weeks, with a moderate amount of sputum, which, he said, was blood streaked at times. He had usually been drowsy. His bowels moved from one to three times daily. He thought the daily amount of urine passed was normal, and that the swelling of his face had increased.

On examination, the oedema of the face was found to be marked. The mucous membranes were pale. There was a faint systolic murmur heard at the base and at the apex of the heart, which was not transmitted. There was no cardiac enlargement. The patient had cough with considerable amount of expectoration which, however, contained no blood. Moist râles were heard on both sides of the chest.

Urine analysis showed: Total quantity in twenty-four hours, ten ounces; reaction, alkaline; color, straw; specific gravity, 1.016; albumin, 0.6 per cent. (Esbach); no glucose. There was a fine flocculent sediment which contained hyaline and granular casts, phosphates, epithelial cells, and leucocytes. No malarial parasites were found in the blood.

Examination of the blood showed: Erythrocytes, 3,008,000; leucocytes, 9,800; ratio, 1 in 308; hæmoglobin, 30 per cent. (Dare); color index, 0.49+.

On November 27th he complained of headache and general muscular pains. He had a chill with a rise of temperature to 104.4° F., but no malarial parasites were found.

On November 28th, urine analysis showed: Total quantity for twenty-four hours, twelve ounces; reaction, acid; color, straw; specific gravity, 1.022; albumin, 0.1 per cent.

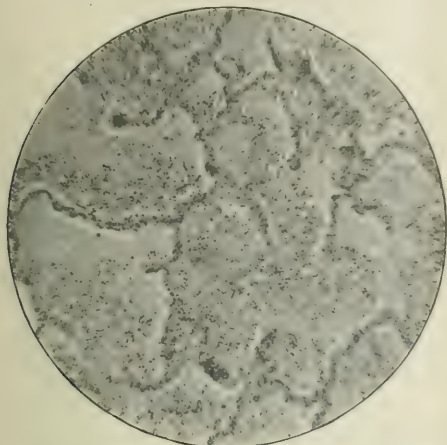


FIG. 1.—Bronchopneumonia area of lung. Case of aestivoautumnal malaria. (Zeiss obj. AA, ocular 6 apochromatic.)

(Esbach); no glucose. There was a turbid sediment which contained numerous hyaline, pale and dark granular casts, pus and epithelial cells.

On November 20th a blood examination again showed no malarial parasites. It was thought that the elevation of temperature was due to nephritis. The cough was much improved. No urine had been passed, and the catheter failed to get any. The bowels had moved freely. The patient was in a stupor most of the time. He had no twitching, no convulsions, and no headache.

He continued in stupor until the 1st of December. On that date his pulse became very feeble; Cheyne-Stokes respiration appeared, and he died at 10:45 a. m.

The body of this patient, being unclaimed, went to the Pennsylvania Anatomical Board. The body, fortunately, was afterwards sent to the dissecting room of the Polyclinic Laboratories, where through the courtesy of Dr. Addinell Hewson, professor of anatomy, I was given a chance of examining the liver, the spleen, and the bone marrow. No evidence of malarial infection was found in these organs.

The case of aestivoautumnal infection was in the person of a male, aged forty years, who was mate on a sailing vessel in the coasting trade. He was admitted to the Polyclinic Hospital in the service of Dr. A. A. Eshner, complaining of hiccough. He had a remittent temperature, which appeared to indicate infection with a subtertian parasite of twenty-four hour cycle of development. No suspicion of malarial infection was entertained, and consequently the only hematological examination made during his stay in the ward was the routine cell count and haemoglobin determination done by the resident physician. At autopsy the very large spleen suggested the nature of the disturbance, and smears made from the expressed spleen pulp showed a large number of pigmented macrophages and a fair number of

deformed and partly degenerated parasites. The chief interest lies in the bronchopneumonia. During life there were no symptoms which pointed to pneumonia. To the naked eye the lung looked to be merely affected by the ordinary hypostatic congestion. On histological examination, however, a true pneumonic consolidation was seen. The exudate was not that of a true pneumococcus infection, consisting of erythrocytes, polymorphonuclear leucocytes, granular matter, and large uninuclear cells containing malaria pigment. Special staining methods failed to show more than a few small masses of Gram positive organisms. The macrophages may be accidental in the exudate, but the question of their relation to the pneumonic process was suggested.

Mannaberg² is of the opinion that all types of malaria may be complicated with croupous pneumonia and that the pneumonias are always examples of mixed infections. The complication of acute malaria with pneumonia is not frequent; but, in regions in which malaria is endemic, an epidemic of pneumonia may occur at the time of a malarial epidemic and then both diseases will be seen in association. The subjective symptoms are usually marked; they increase on the occasion of an intercurrent malarial paroxysm, the three phases of which may sometimes be recognized. The objective signs of the pneumonia are not altered, whether or not a malarial paroxysm is in progress, and these continue until the pneumonia has passed. The sputum is usually markedly hemorrhagic, and shows

²Nothnagel's Practice, American Edition.

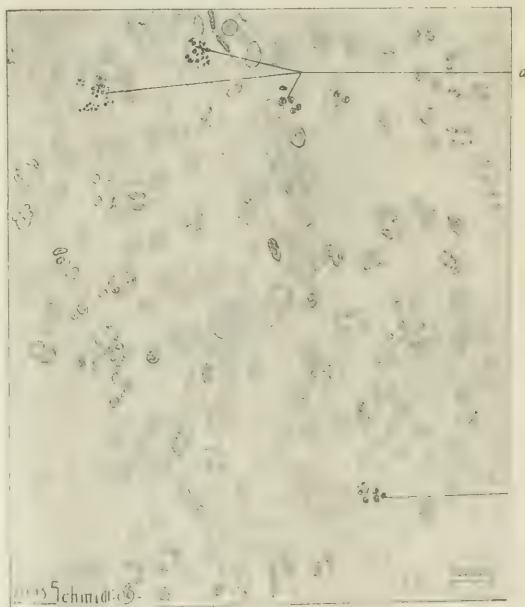


FIG. 2.—Bronchopneumonia area of lung, showing a typical character of exudate. A small mass of cells containing malaria pigment.

sometimes, besides the *Diplococcus pneumoniae* malarial parasites which have passed into the sputum with the blood corpuscles. Mannaberg denies the existence of a condition such as that described by de Brun.

Thayer and Hewetson³ found pneumonia in two out of the 616 cases upon which their monograph was based. Both were cases of typical croupous pneumonia in patients with benign tertian infections, and both ended in recovery. In neither did the pneumonia show anything remarkable in its course, nor is it likely that the malaria exerted any influence upon the pneumococcus infection, excepting in so far as it may have prepared the soil.

In 1895, H. de Brun⁴ described twenty-seven cases in which there were symptoms pointing to pulmonary tuberculosis. The signs indicated the existence of a temporary condensation of the lung. There were no localizing signs of inflammation or of a catarrhal change in the alveoli. There were no signs of bronchial inflammation, no signs of pleural inflammation, and no tubercle bacilli were found in the sputum. In one fatal case the lung had the gross appearance of bronchopneumonia; in another fatal case the lungs were sclerotic and pigmented; and in the other fatal cases the lungs were normal. Twenty-three of the patients recovered. De Brun believed these cases to be due to malarial infection. In 1901, Naame⁵ confirmed the observations of de Brun. He asserted that he had seen a number of cases in which there was solidification of the apex of one or of both lungs. This consolidation was accompanied by a certain degree of dullness with resistance to the finger, augmentation of vocal resonance, and bronchophony. The cough, when it existed was dry and usually coincided with the attack of fever. The most important sign, however, was the absence of any adventitious sound except an expiratory wheeze.

In the case under review it appears to me that we have a pneumonia which is not of the ordinary type mentioned by Mannaberg and by Thayer and Hewetson, nor of the type described by de Brun. I am of the opinion that the bronchopneumonia in this case was due to the irritation of the malarial pigment on the lung tissue.

CASE II.—The patient was an unmarried male, aged forty years, who was admitted to the Polyclinic Hospital (No. 14,814) on November 4, 1907, suffering from severe hiccough.

There was nothing of interest in his family history, except that his father had died of tuberculosis. He had had the usual diseases of childhood, and an attack of gonorrhea five or six years before his admission. He was a sailor on a coasting vessel, and had made his last cruise from Savannah, Ga., to Philadelphia.

The attack developed rather suddenly about fourteen days before admission. He at first felt weak and indisposed. This continued for two or three days and then the hiccough commenced. He had had periods of one or two days at a time during which there was no hiccough. He complained of nothing at the time of admission ex-

cept that he slept poorly and he had lost weight. The urine analysis gave the following result: Reaction, alkaline; color, red amber; faint trace of albumin; no glucose. There was a heavy white sediment, which was composed of phosphates and ammonium urate crystals, and epithelial

cells. An incomplete blood count, made by the resident physician on duty at the time, showed 3,600,000 erythrocytes; 15,000 leucocytes; and sixty per cent. hemoglobin by the Dare instrument. The agglutination test with bacillus typhosus was negative. The hiccough continued with very few intermissions until the patient's death, on November 7th. He became progressively more emaciated and exhausted. Twelve hours before death his temperature registered 106.4° F. in the rectum; his pulse was 120 per minute; and his respirations were 28 per minute. Nine hours before his death he vomited, and attacks of vomiting were frequent until death, which occurred at 9:00 a. m. One hour before death his temperature was 104° F., pulse 160, and respirations 28 per minute.

Necropsy.—Anatomical Diagnosis: Old adhesive pleuritis. Hypostatic congestion and edema of the lungs. Atheroma of the mitral valve. Atheroma of the aorta. Cloudy swelling of the kidneys. Acute splenic tumor. Active congestion of the liver. Acute malarial fever (æstivoautumnal).

Histological Diagnosis: Cloudy swelling of the liver.

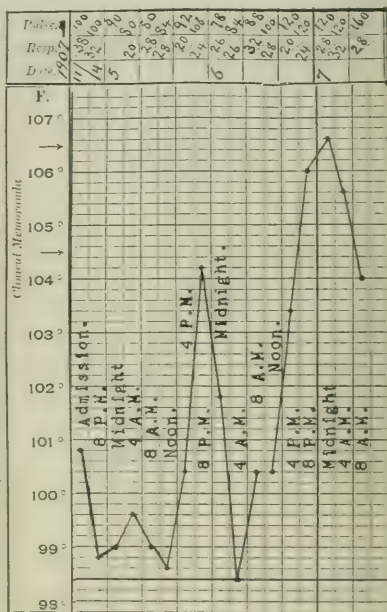


CHART 2. Case of æstivoautumnal malaria.

Active congestion of the liver. Malarial pigmentation of the liver. Active congestion and cloudy swelling of the kidneys. Malarial pigmentation of the kidneys. Malarial pigmentation of the heart muscle. Congestion of the spleen. Malarial pigmentation of the spleen. Bronchopneumonia, edema of the lungs; malarial pigmentation of the lungs.

The body of a white male adult; weight, 160 pounds; height, six feet. The bony skeleton was large; the musculature was wasted; the skin was sallow; the panniculus adiposus was slight. Post mortem rigidity was absent; post mortem lividity was present about the neck and in the dependent parts. There was a small scar on one knee. The preperitoneal adipose tissue was slight; the abdominal muscles were of good color, and were somewhat emaciated.

Abdominal cavity: On opening the abdominal cavity the liver was seen projecting four inches below the costal margin. The bladder was distended with urine and projected two inches above the brim of the pelvis, otherwise the contents of the abdominal cavity were in their normal positions and relations. The diaphragm rose to the fifth interspace on the right side, and to the sixth interspace on the left side.

Thoracic cavity: On opening the thoracic cavity the organs were seen in their normal positions and relations. The sternum was normal; the costal cartilages were calcified. The left pleural cavity contained a few dense, old adhesions between the anterior border of the lung and the region of the fourth rib. There were a few dense adhesions between the posterior surface of the right lung and the thoracic wall. Lungs: The left lung was normal in size. The pleural surface was glistening, transparent and pale. On section the surface was granular, dull, and mottled with dark red particles. Crepitation was lessened. On pressure the lower lobe of the organ exuded a large quantity of frothy, blood stained serum. The right lung was normal in size. The lower lobe and the dependent portion of the middle lobe were pink in color. On surface the section was mottled with dark red patches. Crepitation was lessened. On pressure the organ exuded a quantity of frothy, blood stained serum. Heart: The pericardium was normal. There was a milk spot on the anterior surface of the right ventricle. The heart was normal in size and position. The subpericardial adipose tissue was normal in amount. The left side was distended with fluid blood. The mitral orifice admitted two fingers; the tricuspid orifice admitted three fingers. The aortic, pulmonary, and tricuspid valves were normal. There were a few small atheromatous ulcers on the aortic leaflet of the mitral valve. The wall of the left ventricle, and that of the right ventricle were normal. The heart muscle was normal in color, and firm in consistency. The arch of the aorta was distended with blood.

Kidneys: The left kidney was slightly enlarged. It was pale in color. The cortex was thicker than normal; the medulla was thinner than normal. On section the surface was smooth, pale, and of normal consistence. The left adrenal body was normal in appearance. The right kidney was slightly enlarged. On section the surface was smooth, pale in color, and of normal consistence. The cortex was increased in thickness; the medulla was thinner than normal. The right adrenal body was not examined.

Spleen: The spleen was much enlarged. It was increased in consistency. The capsule was normal in thickness. On section the surface presented a very dark red color; it was smooth and firm. The pulp was increased in consistency; the follicles were not distinguishable; and the trabeculae were increased in number and size.

Liver: The liver was much enlarged. It was of normal shape and of increased consistency. The surface was smooth; the edges were rounded; the capsule was normal. On section the surface was dull, moist, granular, and opaque. The organ was of a slate gray color, and the amount of blood in it was much increased. The gallbladder was filled with inspissated bile. Its mucous membrane and its walls were normal. The bile ducts were patulous. The lymphnodes in the transverse fissure were slightly enlarged.

Bladder: The bladder was distended with urine; otherwise it was normal. The external genitalia were normal.

Gastrointestinal Tract: The omentum was normal in size, shape, and position. It was devoid of fat. The stomach was normal in position and size. It contained a small quantity of dark brown fluid. Its walls and mucous membrane were normal. The small intestine showed congestion in the duodenum, a gray, thickened mucous membrane in the jejunum; and a few erosions in the ileum. The appendix was rather long; but was otherwise normal. It was furnished with a mesoappendix to its tip. The colon was slightly congested. The rectum was normal. The retroperitoneal lymphnodes were slightly enlarged.

Pancreas: The pancreas appeared normal.

Aorta: The thoracic and abdominal aorta presented a few atheromatous ulcers.

Histological Examination.—Liver: The liver was congested, particularly in the intralobular capillaries. The intralobular vessels were less markedly distended, while the intralobular vein was in most instances empty. The amount of blood between the liver cells was considerable, as was particularly shown in a specimen fixed in alcohol, in which many of the blood corpuscles had been washed out of the capillaries. The hepatic cells were somewhat swollen, the nuclei did not stain well, and the cytoplasm was finely granular. There were many cells containing rounded masses of nearly black pigment of varying sizes. These cells were particularly numerous in the capillaries; but they were also present in the larger sized vessels. They were always large uninuclear elements, evidently the endothelial

cells of the vessels. No yellow pigment was seen, no distinct malarial parasites were seen.

Kidney: The kidney was congested, but not uniformly so. The tubules, for the most part, were quite normal, although there was some swelling of the renal epithelium. There was little pigment present, which was to be seen in the glomeruli.

Heart Muscle: The heart muscle was quite normal in appearance. The blood vessels were congested. There were a few cells containing fine pigment in the vessel walls.

Spleen: The spleen was extremely congested. The Malpighian bodies were indistinctly visible, and were extensively pigmented. The lymphocytes of the Malpighian bodies were very intimately mixed with red blood corpuscles. There was a great amount of pigment in varying sized globules in the splenic pulp, and in the Malpighian bodies, always contained in the large uninuclear cells. There were a few polymorphonuclear leucocytes in the pulp, and some cells with nuclei showing mitoses. No distinct parasites were seen.

Lung: The lung presented numerous patches of consolidation. The exudate was composed of granular matter, red blood corpuscles, large uninuclear cells containing fine pigment granules, and polymorphonuclear leucocytes. Some of the macrophages were apparently lining epithelial cells of the air vesicles. The lung was uniformly congested, and there was a moderate number of macrophages in the blood vessels. Sections of the lung stained by the Mallory aniline blue* method showed a very few small masses of fibrin in the alveoli and in the bloodvessels. Sections stained by the Gram-Weigert method failed to show Gram positive diplococci or bacilli.

Smears made from the spleen pulp at autopsy showed large numbers of macrophages containing various sized granules of black malarial pigment. There were very few polymorphonuclear cells in the smears. A few distorted gametocytes were seen, and a few bodies in the red blood corpuscles that looked like small unpigmented rings. The length of time between death and the preparation of the specimen would account for the lack of more positive information.

Bacteriological observations: Culture tubes of agar were inoculated from the spleen, the liver, and the kidney. All were sterile after forty-eight hours' incubation at 37.5° C.

I wish to take this opportunity to thank Dr. Eshner for permission to study and report these cases.

3713 WALNUT STREET.

IS SEVEN DAY FEVER OF INDIAN PORTS ONLY SPORADIC DENGUE?*

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The commonest fever of short duration in Calcutta among Europeans was only clearly differentiated from the nearly equally frequent malaria by me in 1905, and described (1) under the provisional title of A Peculiar Influenzalike Fever Prevailing in Calcutta. In that paper I discussed its differentiation from dengue, pointing out its resemblance to that disease in some respects, but concluded that it was more nearly akin to influenza. Early in the following year, in a paper (2) on Malarial Fevers in Calcutta and Their Differentiation from the Seven Day Influenzalike Fever I showed that the seasonal incidence of the seven day type of fever was the end of the hot weather and the rains, in which respect it differed totally from influenza (3), but agreed more nearly with that of dengue, and

*Mallory and Weigert's Aniline Blue Method.

*Read before the Indian Medical Association, Calcutta, 1908. See also Rogers, Leonard, "The Seven Day Fever of Indian Ports," *Indian Medical Association Journal*, Vol. 1, No. 1, 1908.

concluded "I am more than ever inclined to look upon seven day fever as distinct from any known disease."

A study of the literature of previous epidemics of dengue in India, especially those of 1824 and 1872, showed them to have been so closely in accordance with the textbook descriptions of the disease, and so widely divergent from the present distribution of seven day fever, that I could not see how they could be one and the same disease. Late in 1906 my friend, Captain J. W. D. Megaw, I. M. S., published (4) his personal experience of two attacks of the disease, and maintained that it was only a sporadic form of dengue, although no suspicion of this disease being so extremely common in Calcutta appears to have occurred to the succession of medical men who had served there, for I find by an examination of the clinical records back as far as seventeen years ago, that seven day fever was as common then as at the present day. A discussion on this point took place at the Medical Section of the Asiatic Society of Bengal, but the opinions of the numerous speakers were almost unanimous against Captain Megaw's suggestion. As I had never had an opportunity of seeing undoubted dengue, in order to get the opinions of some who were familiar with that disease, in 1907 (5) I brought up the subject before the London Royal Medical Chirurgical Society (now the Royal Society of Medicine) when Sir Patrick Manson said there could be no doubt seven day fever was quite distinct from dengue. I, therefore, described the disease as a definite disease in my work on *Fevvers in the Tropics*.

Very recently Captain Megaw (6) has published a further lengthy communication in support of his view that the two fevers are identical, so it occurred to me that it would be of great interest and importance to obtain the opinions of the American Society of Tropical Medicine on this difficult point, for many of the members must be quite familiar with true West Indian dengue. I may mention that Lieutenant Colonel Pilghim, I. M. S., after experience of dengue in the West Indies, and some twenty years' knowledge of seven day fever in Calcutta, has informed me that he thinks they are clinically quite distinct. As I have fully described the Calcutta fever in the publications already referred to, it will suffice to submit some further recent temperature charts, and briefly discuss the main points in which the disease differs from the classical descriptions of dengue.

Epidemiology.—Good descriptions are on record of epidemic dengue in India (7), especially in the years 1824, 1872, and in Burma and Madras only in 1902. They all agree with the classical descriptions of the disease attacking almost the entire population of large towns within a few weeks or months, and causing great dislocation of business. Moreover, relapses were frequent during the same season, thus showing little tendency to produce immunity. These outbreaks also spread for one thousand miles or more inland in epidemic form. The Brisbane epidemic of 1905 (8) showed similar characters, and it was noted that an attack in the previous outbreak of 1897-8 had no or very little protective influence. Second attacks, at intervals up to three months, were often more severe than the primary ones. On the

other hand, seven day fever of Indian ports is a sporadic disease of yearly occurrence every hot weather and rainy season as far back as hospital records can be obtained. It attacks a large proportion of newly arrived Europeans within the first two years of their residence, a second milder attack being occasionally seen one or two years after the first, but not, in my experience, in the same season, after which immunity appears to be largely developed. Apart altogether from the numerous differences in temperature curve, symptoms, and after effects, it is very difficult to see how true epidemic dengue can be converted into such a very differently distributed disease as that which I have described as seven day fever. When did the disease become sporadic? Was it after the 1824 or the 1872 epidemic, and if the former, how did the 1872 one affect nearly the whole population when all but the newcomers should have been immune after almost fifty years of "sporadic dengue"? If dengue does not protect against a second attack in the same season, or during the few years between the two recent Brisbane epidemics, how are persons attacked by seven day fever commonly immune after even a single attack? Again, true epidemic dengue in India spread widely inland over the country with great rapidity, yet seven day fever has only occasionally been met with beyond the great ports. So marked is this that an examination of three years' records of the large Lahore Medical College Hospital in the Punjab, and of the military hospital of a big station in the United Provinces, failed to reveal a single case. Once more, dengue equally affects Europeans and natives of India, while seven day fever is rare in the latter, although very occasionally seen in those who have come to Calcutta from distant places. A few cases of seven day fever occurring in the Punjab have been recently recorded as dengue, but I have frequently known persons attacked a few days after their return from Calcutta to inland towns, without the disease spreading there as elsewhere, as true dengue commonly does. The epidemiology of the two fevers is, then, widely different in every way, and from this point of view alone it is extremely difficult to see how one can be but a sporadic form of the other.

Pyrexia and Symptoms.—Only a few points can be dealt with under this heading within reasonable limits of space. Dengue has been described as a "three day fever" by Lichtenstein, although sometimes followed by a terminal rise of temperature about the sixth day of very brief duration and slight degree. Such was the type in Calcutta in 1872, when any return of the fever after the second or third day was exceptional in the recorded charts. Further, I can find in epidemic dengue records no description of the high continued temperature of seven days' duration, with the general appearance of typhoid patients, such as I have frequently met with, and have published charts of, in seven day fever. If this had occurred in 1824 it could not have been overlooked by such a careful writer on fevers of Bengal as Twining, who has left a masterly description of this dengue epidemic. If, then, seven day fever is but sporadic dengue, the disease must both have changed its type to an extent unknown in any other specific disease, but must also in passing

from an occasional severe epidemic form to ever present sporadic one, have greatly increased the duration and height of the temperature curve, instead of becoming much milder as in other known instances, such as the decimating epidemics of measles in Polynesia and its comparatively mild sporadic form in European countries. This is contrary to all known laws of such diseases, and appears to me to be fatal to such a contention. It is true that Captain Megaw holds that both the three day fever of Chital, described by McCarrison (9), and seven day fever of Indian ports, are both dengue, but he does not attempt to explain why the disease nearly invariably runs a short course in one place and a long one in another. Such a view would make dengue yet more protean and variable in character, which to my mind is much less likely than that these Indian types are distinct fevers, which have been sometimes confounded with dengue when unusually prevalent.

After Effects.—One of the most characteristic features of classical dengue is the excruciating character of the pains during the disease, requiring mor-

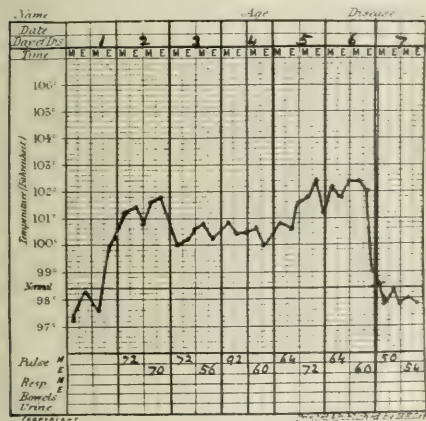


Chart 1.

phine frequently for their relief, and their persistence for weeks or months after the fever has left. This feature was well marked in the Indian epidemics, for Twining records that in 1824 protracted debility, long continued pains in the ankles, and dull, aching pains in the joints of the fingers and toes, were almost invariably complained of for many weeks after the cessation of the fever, and E. Charles wrote to the same effect of the 1872 outbreak. I accidentally met with a European lady recently who suffered in that epidemic, and without any prompting on my part she began to dilate on her terrible sufferings over thirty years before. This noteworthy symptom is conspicuous by its absence in seven day fever, in which the pains are little more than in influenza, and do not persist after the fever has subsided, and even not recur with the prolonged terminal rise of temperature.

The outbreak recently described as dengue by Ashburn and Craig (10) in the Philippine Islands is certainly much more like Calcutta seven day fever

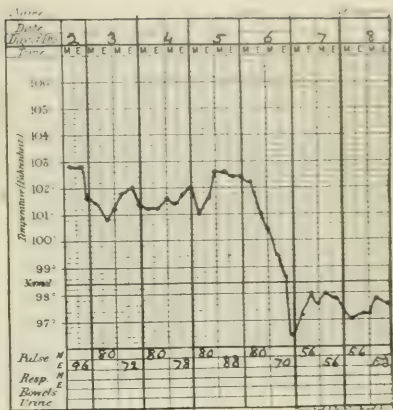
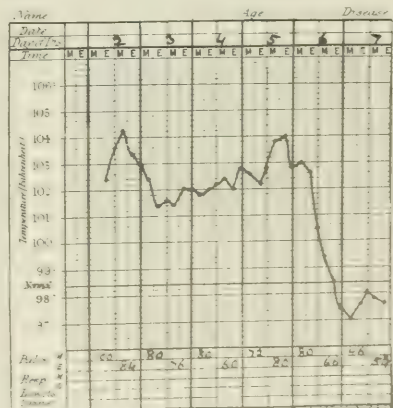


Chart 2.

than classical dengue, but is it not possible that it is the same fever as that so commonly met with in Indian ports, and not true dengue? This view is supported by the recent work of R. Doerr (11) on a three day fever in Southeastern Europe, for in both instances an invisible virus, which passes through a very fine porcelain filter, has been proved to be present in the blood, yet the European three day fever does not appear to have resembled dengue, or raised only suspicion of the occurrence of that disease.

In the absence of any accurate knowledge of the causative organisms of these various fevers, the questions here discussed are not likely to be easily settled, but I shall await with much interest the opinions of the society concerning them.

Temperature Charts.—The accompanying charts illustrate the type of the fever in its different degrees. Chart 1 is that of a European attacked while in a hospital, so that it shows the whole course of the disease, and demonstrates that it is essentially a short continued type, with exacerbations at the beginning and the end. The slow pulse is also a most



noteworthy feature, having been only 60 with a temperature of over 102° F. at the end. The rise is rapid and the fall equally so.

Chart 2 is that of a European male admitted on the second day of the fever, which ran a high con-

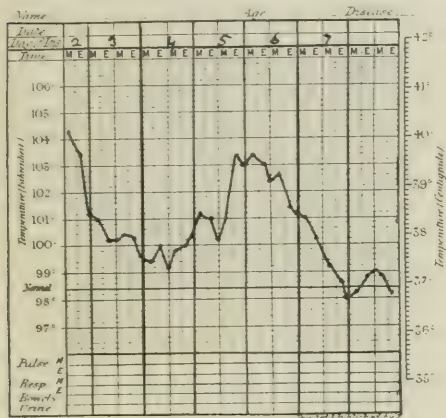


Chart 4.

tinued type with but a very slight rise at the end. The pulse is again slow, and such patients frequently have the flushed appearance of early typhoid and occasionally also show slight abdominal distention, the rapid fall on the sixth or seventh day only removing the strong suspicion of that disease. I have not met with any descriptions of this typhoidlike type in accounts of epidemic dengue, although it is quite common in Calcutta seven day fever, and ap-

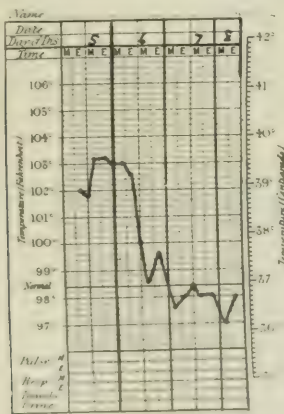


Chart 5.

Chart 4 shows a much more marked saddle back remission to only a little over 99° F., and all intermediate curves between this and Chart 3 occur, and constitute the most striking feature of the general run of cases. It is rare, however, for the temperature to fall actually to or below normal. The terminal rise is a prolonged and high one, much more so than in classical dengue.

Chart 5 is that of a man admitted on the fifth day during the terminal rise. These cases constitute a large proportion of the admissions for seven day fever, and unless the history is carefully ascertained, may easily be mistaken for a short two or three day fever. These cases were commonly mistaken for malaria in Calcutta before I described this fever, but may almost invariably be at once distinguished from it by the characteristically slow pulse during the terminal rise of seven day fever. The fact that about half the admissions in the European hospital, even among sailors, are first seen at this late stage of the disease, is a striking fact, again differing widely from dengue, in which the onset is usually so very severe as at once to bring the sufferers under medical treatment. I have myself worked through a fairly mild attack of seven day fever with only a feeling of general slackness and some headache, although as a rule frontal headache and pains in the loins and limbs are well marked features of the infection, much as in influenza. These charts will serve to convey a general idea of the disease, and enable it to be compared with undoubted West Indian dengue.

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HISTOLOGICAL CHANGES OF THE SPINAL CORD IN PERNICIOUS ANÆMIA APROPOS OF A CASE WITH DIFFUSE DEGENERATION.*

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A sufficiently large literature has already accumulated showing the interrelation as cause and effect between profound anæmia and histological changes in the spinal cord. These pathological alterations have been described by competent observers under different names. "Combined sclerosis," "subacute combined sclerosis," and "diffuse degeneration"—are the names used in connection with the subject under discussion.

Degeneration of the spinal cord apart from cases with acute inflammation (myelitis) has been ob-

pers to me to be a very important point in the differentiation of the two diseases.

Chart 3 shows a very similar, but yet higher, continued type with distinct preliminary and terminal rises producing a slight saddle back remission between them, and a slow pulse, except immediately after admission.

*Read before the Philadelphia Neurological Society, April 23, 1909.

served in many conditions. Putnam of Boston (*Journal of Nervous and Mental Disease*, 1891) has observed it in persons past middle life in connection with general enfeeblement, with malnutrition and emaciation, finally with profound anæmia. Since Lichtheim's memorable studies in 1887 and of his pupil, Minnich, the subject of degeneration of the spinal cord in pernicious anæmia has received wide attention from various writers, particularly from Putnam, Dana, Putnam and Taylor, in this country and by a number of eminent Englishmen, such as Risien Russell, Batten, Collier, Bowman, J. Taylor, and Clarke.

Attempts have been made to classify the lesions found. Some of them believe in that the degeneration is confined to the neuron systems of the cord, that the posterior columns are mostly affected and the lateral columns only slightly; others think that the periphery of the cord may equally be affected and even spread thence to other portions of the cord. The first condition occurs in mild cases, the second in severe cases.

Corresponding to this anatomical classification a clinical grouping has been proposed by an Italian writer, Bastionelli (*Bullettino della reale Accademia medica di Roma*, 1895 to '96). According to him in one group the anæmia is the predominating feature and the spinal cord symptoms develop toward the end of life, and then they run a very rapid course. In the other group the nervous symptoms are the most conspicuous. Since then a number of observations have accumulated showing with evidence that between those two extreme types of the affection there are many intermediary forms, that do not correspond to the clinical pictures, and that the intensity of the morbid histological process does not go parallel with the degree of the development of the clinical manifestations.

Recently J. Michell Clarke, of Bristol, in a very thorough manner characteristic of the English scientists (*Brain*, 1904, p. 441), reviewing the cases hitherto published attempted to separate two groups: 1, The cases of pronounced anæmia with lesions in the spinal cord confined mainly to the posterior columns involving slightly the posterolateral columns; 2, cases of subacute combined degeneration or diffuse degeneration of the cord in which there is no anæmia, or if it is present, it is late and consecutive to the appearance of symptoms of cord disease and in which also the pathological changes in the cord are more extensive and their symptoms pronounced.

The case I am about to relate shows that the latter classification as well as the former are not tenable in the strict sense of the word, because they are not applicable to every case. However, anatomically they all present certain characteristic features which deserve attention. But before discussing the latter I wish to put on record a case which appears to be of some importance from the standpoint of classification.

CASE.—J. C., white, aged forty-eight, clerk by occupation, with good family and personal histories, met four years ago with an accident following which he lost a considerable amount of blood from the nose. The bleeding lasted three days. For three months he was confined to bed suffering from general weakness, headache, attacks of vertigo, and dyspnoea on exertion. For a long time since he was treated for neurasthenia. He was kept in bed, given the

rest cure, massage, and electricity for a period of six months, but the condition remained unaltered except the dyspnoea which diminished considerably. But as soon as he left the bed, it returned. Two years ago the patient noticed a gradually oncoming weakness in the upper and lower extremities. At the same time he experienced a tingling sensation and a numbness. Occasionally he would have shooting pain in the arms. At the end of six months he was unable to move perfectly his limbs and presented some difficulty of micturition. I could not obtain a more detailed account of the condition as the physician who treated him left the city and the patient himself as well as his relatives were too ignorant for exact observations. At that time he came under my observation and the following are the notes taken on the case.

There was a very pronounced pallor of the skin and lips. The gums were almost bloodless. At the apex of the heart and over the pulmonary artery a slight systolic murmur could be heard. The musculature of both arms was poorly nourished but symmetrically on both sides, the resistance to passive movements was very poor on both sides. Grip in both hands was very weak. The reflexes of both upper extremities were much diminished; there was no fibrillary tremor, but some pain on pressure of both biceps muscles. In the lower extremities only some slight movements were possible, but both were held very rigid. The knee jerks were very much increased on each side, but there was no ankle clonus and no paradoxical reflex. Babinski's sign was present on both sides. The cremasteric reflex was absent on both sides. Sensations to touch, pain, and temperature were diminished in the legs and feet, there was loss of sense of position in toes. Paræsthesia was present in the arms and legs. There was some pain on pressure on the calf muscles. The sphincters of the bladder and rectum were involved; the patient suffered from retention of urine and constipation.

The history of the case and the striking pallor of the skin suggested a blood examination, and the following were the findings about fifteen months ago, viz., at the time I saw him first: Hæmoglobin, thirty-five per cent; red cells, 2,000,000; leucocytes, 3,800; lymphocytes (small and large), forty-five per cent; polymorphonuclear, sixty-eight per cent; eosinophiles, 2.7 per cent; myelocytes, two per cent; polychromatophilic red cells, megaloblasts, and normoblasts, numerous, also poikilocytes.

The examination of the lungs was negative, and uranalysis showed nothing abnormal except the presence of a few hyaline casts.

The patient was advised to remain in bed and good hygienic and dietetic measures were taken. Arsenic in gradually increasing doses was also given. The patient began to improve in a general way, and a repeated blood examination showed some increase in the hæmoglobin, but then arsenic had to be discontinued on several occasions when symptoms of intolerance would appear. The latter consisted of cramps and diarrhoea. As soon as diarrhoea developed the percentage of hæmoglobin would fall to its primary state. Under strict and attentive nursing the patient was kept more or less comfortably. My diagnosis at that time was: *Pernicious anemia and secondary degenerative changes in the spinal cord.*

About a month later the patient contracted influenza with all its characteristic symptoms. It was a protracted case as it lasted eight weeks. He recovered from all the symptoms except the cough. The latter continued and became aggravated. The right apex became suspicious. The expiratory sounds of both apices were prolonged, and on the right side a few fine râles could be distinctly heard. A marked dullness over the upper part of the right lung was noticeable on percussion. Vocal resonance also increased over the same area. Expectoration became abundant. Night sweats, a slight rise of temperature, an occasional streak of blood in the sputum suggested a probable tuberculous invasion of the lungs. An examination of the sputum revealed the presence of rare tubercle bacilli. The condition continued unaltered, except for a few brief periods of amelioration.

Within the last six or seven weeks of his life bed sores over the midsacrum, heel of the left foot, and region of the occiput developed. During this period the upper extremities grew weaker, and similarly to the lower limbs contractures gradually developed. Objective sensory disturbances also appeared in the upper extremities, and this was particularly noticeable to pain and temperature. Heat and cold could not be distinguished; in some areas he took cold

for heat and vice versa. Pain was not perceived. The sense of touch was only diminished. Astereognosis was distinct. The patient grew gradually weaker, bed sores ap-

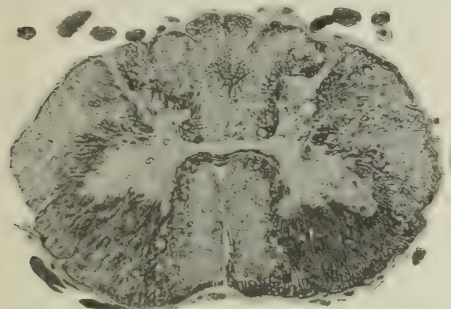


FIG. 1.—Cervical segment of cord.

pread and spread rapidly. The patient expired in August, 1908.

The post mortem record is as follows: Pulmonary tuberculosis of the upper half of the right lung, and congestion and œdema of the lower half. Some emphysema of the left lung. Pleural cavities were dry and showed adhesions at both apices and posteriorly. Heart was flabby, myocardium was very friable, left ventricle dilated. Spleen and liver were soft. The brain was œdematous and the spinal cord was somewhat hard in its cervical and thoracic portions. Sections of the brain and medulla revealed nothing abnormal. The spinal cord presented the following important histological changes. (See illustration.) The most marked degenerative state was found in the lower cervical and upper thoracic segment. When stained with Weigert's method for old degenerations the lower cervical segment was found markedly altered. The anterior columns on both sides, Gowers' tract on one side, the direct cerebellar and crossed pyramidal bundles on both sides were profoundly degenerated. Only a small portion of fibres were preserved around the cornua. The posterior columns were almost entirely degenerated except the middle portion near the median line corresponding to comma of Schultze and the very posterior portion. The degenerated segments presented this peculiar feature: that some of the fibres had many vacuoles distributed, especially in their external portions.

With Marchi stain recent degeneration was noticeable in

ter were either entirely absent or else greatly swollen; the latter was particularly seen in the above mentioned area of recent degeneration. The blood vessels were not altered except posteriorly at the periphery of the cord where a few showed thickened intima.

The upper thoracic segment stained with Weigert's method showed still more degeneration than the preceding one. Here the anterior columns, direct cerebellar, and crossed pyramidal tracts were markedly affected on both sides. Disseminated foci of degeneration were found in both Gowers's columns. Goll's and Burdach's columns were almost totally destroyed. Vacuoles were present along the borders of the posterior columns. With Marchi a great many recently degenerated fibres were seen in the areas of old degeneration more on one side than on the other. The gray matter of the cornua stained with thionin and ammonium carmin showed a very slight destruction of cells. The axis cylinders of the degenerated areas were enormously swollen.

The process of degeneration in the lower segments of the cord was less and less marked, so that in the lumbar portions the crossed pyramidal bundles alone were in a state of mild degeneration. A few degenerated fibres were seen only very anteriorly, and vacuoles in a linear distribution were noticeable in the posterior columns near the median line. With Marchi's stain some recent degenerations were seen also in the middle of the anterior column on one side. The cells of the anterior cornua were well preserved, no arterial changes were noticeable. The meningeal coverings of the cord were found normal, both macroscopically and microscopically.

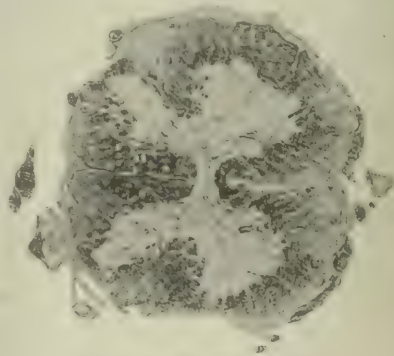
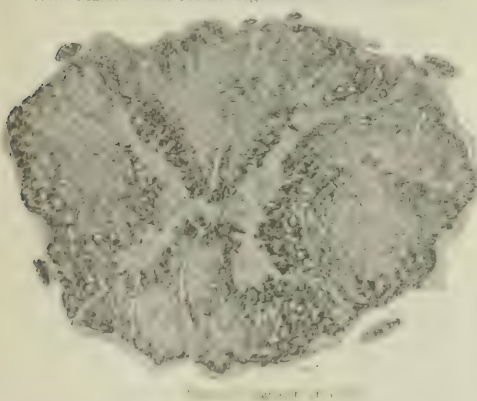


FIG. 2.—Lumbar segment of cord.

The salient features of this case from a clinical standpoint are: The anaemia, which developed after a profuse bleeding; the spinal cord symptoms, which gradually made their appearance two years later; finally the incidental gripe, which was followed by *pulmonary tuberculosis*. The prominent anatomical changes are a diffuse degeneration of the spinal cord, affecting not only the posterior columns, but also the lateral motor and sensory tracts and the anterior portions of the white substance of the cord.

When a comparison is drawn between the present case and those recorded by other observers similar and dissimilar points can be traced. Clinically in the majority of cases the symptoms referable to a disease of the cord are very slight. Indeed, in a number of instances the histological changes were found accidentally in patients that died from anaemia. The clinical symptoms are therefore often overlooked.

In my case the manifestations during life were quite marked. The cord symptoms developed gradually and began to make their appearance two years after the onset of the profound anaemia. The



the above mentioned area corresponding to the comma of Schultze. Stained with ammonium carmin the cervical segment showed some destruction of cells of the cornua; some were deformed and others absent. A slight degree of degeneration was also seen in the cells when stained with thionin. The axis cylinders of the white degenerated mat-

evolution of the symptoms was decidedly progressive. The relation between the pernicious anemia and the involvement of the spinal cord was evidently direct, the former commenced four years ago, gradually became more and more pronounced, and two years later sensory and motor symptoms, also sphincter manifestations, made their appearance. The course of the disease was chronic from the beginning to the end; at no time any of the cord symptoms showed an acute onset or acute development.

As to the individual nervous symptoms there is one particularly to which I wish to call attention, viz., a sensory syringomyelic dissociation in the upper extremities. Pain, heat, and cold were not perceived by the patient, and in some areas heat was taken for cold and vice versa. This phenomenon has not been observed in any of the cases reported, and anatomically it corresponds in my case to a genuine involvement of Gowers's tract, more on one side than on the other.

A comparison of the histological changes will show that my case presents this in common with other cases that the lower cervical and upper dorsal regions of the cord were most involved and evidently were first affected. Although the case was far advanced judging from its clinical picture and from the intensity of degeneration in the upper portion of the cord, the posterior columns were not involved through the entire cord contrary to the condition found in most of the cases reported. Only a few vacuoles are seen in the posterior columns (see pathological report) in the lower portion of the cord, but no distinct state of degeneration. If this vacuolation, which is the result of complete dropping out and disappearance of nerve fibres, is the continuation of the pathological process from the cervical region we have to presume a descending degeneration of the posterior columns. This is contrary to our conception of the direction of sensory tracts which is ascending but not descending. I am, therefore, inclined to consider the findings in the posterior columns as due to an irregular or patchy involvement caused perhaps by the same unknown agent that is presumably the cause of the pernicious anemia itself.

A further comparative examination shows that in the lower dorsal, lumbar, and sacral segments the crossed pyramidal tract alone was found distinctly involved. The involvement of the direct cerebellar tract and particularly of Gowers's tract is rare. In my case the two tracts were distinctly involved, and this could be seen with both stains, Weigert's and Marchi's. The latter shows that the process was of recent origin and that degeneration was going on and progressing. In the majority of cases recorded the anterior columns of the cord remained intact, and if alterations occurred they were exceedingly slight. In my case, on the contrary, the degeneration is very great and again almost exclusively confined to the upper dorsal and lower cervical regions; in the lower dorsal and lumbar segments a few degenerated fibres are seen very anteriorly at the periphery of the cord. The roots and the dorsal root zones similar to those of other cases were found intact. This latter circumstance is of great importance from the anatomical standpoint, because while the degenerative areas of the

cord may appear systemic, they, nevertheless, do not represent neurone degeneration. The gray matter of the cornua is, comparatively speaking, only slightly affected and this is in accord with the findings in other cases. Similarly to other observers I found very slight alterations in the bloodvessels.

An analysis of the anatomical and clinical facts of all the cases reported up to present time including my last case leads naturally to this view that the proposed classifications of spinal cord changes occurring in connection with pernicious anemia are untenable. There are cases of a comparatively short duration, and in spite of it the degenerative changes in the cord are very extensive. There are also cases of many years' duration and with very slight spinal lesions. While in many cases the lesion consists of sclerosis mainly of the posterior columns and only slightly of the lateral columns, there are also cases with more extensive and more widespread degenerative areas, so that any of the tracts may eventually become involved. The latter is applicable not only to cases of very long duration, but also to recent cases.

In the light of this knowledge are we justified to consider the above mentioned findings as especially characteristic of pernicious anemia? That a combined sclerosis was evident in a number of cases is well known, but there are other cases in which the lesion was diffuse and even very diffuse, as in my own, and when the latter occurs, there can be no question of specific lesions. This variability in the findings is probably dependent upon the degree of intensity of the causative agent, be it a poison or anything else, and upon its original localization. At one time it will affect one or two certain tracts, at another several tracts, at still another will also invade the gray matter; finally it may attack all the elements of the cord simultaneously or in rapid succession. The process is evidently diffuse and consists of primary degenerations which are not systemic in character; it is only quasisystemic. The poison, if it is one, does not necessarily follow the route of the bloodvessels, as the latter are frequently found intact or very slightly altered. It follows mostly the route of the nerve fibres within the cord without strict regard, however, to neurone systems. The white matter of the cord is, therefore, the tissue of predilection in pernicious anemia.

The poison is necessarily problematical, as our data on the precise nature of pernicious anemia are not sufficient. But the fact that cord changes do not occur in chlorosis militates in favor of the view that only anemias associated with blood destruction lead to degeneration of the spinal cord. It is possible that during the process of breaking up of blood elements a noxious material is set free and carries its toxic effect to various elements of the spinal cord and especially to its nerve fibres.

That toxins spread to the cord directly through nerve fibres is a well established fact. Suffice it to mention the pathogenetic histories of tetanus and rabies, also the experiments of Marie and Morax who after cutting a nerve of a fore limb of an animal and later injecting a lethal dose of toxin into its paw found that no convulsions followed. Hömön and Laitinen (*Review of Neurology and Psychology*, 1903) could trace the microorganisms upward into the meninges of the cord after they injected

streptococci into the sciatic nerve. Similar experiments and clinical observations prove it conclusively.

The mechanism of the action of the toxine presents a certain difficulty, viz., if the latter can reach the central nervous system via the nerve fibres, we should expect lesions in the peripheral nerves and roots which as mentioned before are wanting in pernicious anæmia. But this difficulty is only apparent. The experiments of Orr and Rows (*British Medical Journal*, 1907) show that toxines travel rapidly up spinal and cranial nerves to the central nervous system, and that these nerves in their extramedullary portion possess a neurilemma which is a protective membrane, while in their intramedullary portion they lose the neurilemma and consequently undergo degeneration. Toxines, therefore, may produce ravages in the central nervous system without affecting the peripheral nerves or roots. It is, therefore, by analogy not surprising that alongside of profound diffuse degeneration of the cord the posterior roots are not found to be involved in cases of pernicious anæmia.

Concerning my case attention must be called to one peculiarity. The patient was attacked with pulmonary tuberculosis about twelve months before he died. Is it not possible that the degenerative condition of his spinal cord was caused by the tuberculous infection?

Tuberculosis of the cord may present itself either in the form of softened areas corresponding to certain tracts or in the form of pachymeningitis with secondary involvement of the cord (meningomyelitis) or finally in the form of solitary tubercles. Neither of these conditions is found in my case. The meninges were intact, isolated tubercles were absent, and the appearance of the cord was not that of necrotic tissue. Upon touch the cord and especially the segments most involved were hard. Microscopically it had the appearance of sclerosed areas usually found in systemic diseases. The intercurrent tuberculous infection by reason of its general debilitating effect upon the organism enhanced perhaps the already progressive process of degeneration caused by the profound anæmia, but there are no evidences of a direct influence of tuberculosis upon the central nervous system.

1430 PINE STREET.

SOLID CARBON DIOXIDE IN LUPUS ERYTHEMATOSUS; A NEW AND SUCCESSFUL METHOD OF TREATMENT.

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If there is any one of the commoner dermatoses that has been the despair of the therapist it is lupus erythematosus. The textbooks are full of remedies for it; every conceivable medicinal application from sulphur and green soap on the one hand, through tar, salicylic acid, resorcin, etc., to sodium ethylate and the actual cautery on the other, has been recommended. We run through the list and try many of them conscientiously; only to find at the end either that the extension and ravages of the

disease have not been checked, and that the last condition of our patient is worse than the first. It is with much satisfaction, therefore, that I can advocate a treatment that is so simple that it is within the reach of every practitioner; that is perfectly safe if properly applied; and that the experience of the past two years has demonstrated to be more efficacious than any measures that I have previously employed.

A few fundamental facts must be borne in mind. Erythematosus lupus, whether or not we regard it as tuberculous, is in the vast majority of cases an affection that persists and progresses indefinitely. Spontaneous cure is, in my experience, unknown; and I can recall but very few cases that have even temporarily improved under the milder measures that occupy the first place in all the treatises on the subject. On the contrary, I am firmly of the opinion that, left to itself or inefficiently handled, it ceases its ravages only when the skin area affected has been completely destroyed and transformed into scar tissue. And since its tendency is to steady peripheral progression in most cases, and new areas of skin are slowly but surely invaded, there is apparently no limit to its extension. Its final result in such cases is seen in the patients that we meet occasionally, in whom the skin of the entire face, with ears and neck, is transformed into cicatricial tissue with all the resultant deformity.

Skin destruction, therefore, being the way of cure, the problem before us is to cure with as little as possible scarring, both in extent and in depth, provided we do enough to destroy the disease foci. Now the infiltration in lupus erythematosus varies in location in different cases, being sometimes deep in the corium, and sometimes quite superficial. When we attempt to anticipate Nature's cure and effect in a few weeks the changes that take years, and thus prevent the spread of the malady, we must employ as manageable an agent as possible; so that we can begin with a very superficial destruction, proceeding to deeper cauterization only when we find that the lighter measures are of no avail. There is all the difference in the world between different scars. One may be only a thin greyish white veil of connective tissue, the tops only of the papillæ of the true skin being destroyed, and the ultimate result being a deformity so slight that a magnifying glass is needed to detect it. Another scar may be a depressed, dead white, and extremely disfiguring lesion, which may be ridged or become keloid, and occasion contractions and other deformities. And when we remember that the great majority of cases of the disease under consideration occur in females, and on the face, the importance of this consideration in deciding on the treatment to be employed is evident.

Agents like the mineral acids, caustic alkalis, thermocautery, etc., are undesirable; they are not manageable, destroy the entire skin, and lead to an amount of scarring that is not foreseeable and is usually excessive. Besides this they are very painful. For years I used trichloroacetic acid with fair success as far as results were concerned; but I found it hard to manage, frequently getting a deeper and wider effect than I intended. During the last two years I have employed only the solid carbon dioxide; and I have found that it is so effective, and has

so many advantages that it ought to be universally used. Being a solid body it can be whittled into any desired shape; at one time being cut into a long point as thin as a slate pencil, and at another arranged to cover a flat area as large as a half dollar and moulded to fit the inequalities of the surface to be treated. The strength and amount of the application can be gauged with the utmost nicety by varying the time employed and the pressure used. Light pressure for say twenty seconds will give a moderate reaction without the ultimate formation of scar tissue, or with an amount of it so superficial as to be practically negligible. Harder pressure for sixty seconds or so will occasion marked reaction and destruction of the skin. And between these two extremes any desired amount of tissue destruction and scar formation can be gotten.

Solid carbon dioxide, however, has further advantages. It is a cold cautery, and therefore an anæsthetic cautery. This is a most important point. Whilst other efficient cauterizing agents, almost without exception, are so very painful that, save with patients of considerable fortitude, a local anæsthetic at least is required when they are used, carbon dioxide can be employed on women and children without any trouble at all. The intense cold itself is a local anæsthetic. The pain at the time of the application is trivial; a few minutes later there is a moderate amount of burning similar to that after a frostbite. This wears off entirely in an hour or two. Infants cry, of course, whilst the application is being made; but their whimpering ceases in a few minutes, showing that the discomfort is neither severe nor long continued. Women bear the application perfectly; and I have yet to see the first patient who objected to or refused treatment on account of the pain. I have used it on a number of my assistants and other medical men for the removal of moles, birthmarks, etc., and they all agree that the pain is trivial.

The facts that the solid carbon dioxide can be obtained anywhere, that it can be kept for hours and carried about, and that it costs hardly anything, are additional advantages. It would lead me far beyond my present limits if I attempted to detail the method of drawing the gas in solid form. These can be found in an article that I published recently (*International Journal of Surgery*, January, 1909). To return to my more immediate subject, the following brief abstracts of three cases will serve to show the results obtained from its use in the disease under consideration.

CASE I.—Miss E. L., aged twenty-five; lupus erythematosus of the nose and adjacent cheeks for two years; steady progression of the malady, in spite of skilled treatment in England. The patch measured $2\frac{1}{2} \times 1$ inches, covered both sides of the bridge of the nose, and reached up to the lower lid and canthus on the left side. Little atrophy; entire area elevated, yellowish pink, and with occasional adherent fatty scales. Itching marked. First sent to me in August, 1906, by Dr. Schnaper, of this city.

The ordinary remedies, green soap, sulphur, resorcin, iodoform, tar, mercurial plaster, etc., were employed for some time, without other effect than irritating the lesion, which was unmistakably spreading. In December, 1906, trichloroacetic treatment was begun, and continued during 1907. Applications every two to four weeks; considerable pain. Immediate results apparently very good; when the superficial white eschars turned black and fell off the disease appeared to be cured. But inevitably new foci appeared even in the centres of the treated areas, and the area affected increased.

In January, 1908, solid carbon dioxide treatment was begun, and during the year the disease was treated some fifteen times. At each session two to five foci of varying size were treated, the time of application varying from twenty-five to sixty seconds, and the pressure from light to moderately heavy. Areas directly over cartilage or bone, or very near the eye were given the lighter applications. It was necessary to go right up to the very edge of the internal canthus on one side, and down to the ala nasi below. Only a very slight conjunctivitis was occasioned by the former application; the lid was, of course, carefully drawn down by an assistant, and the eyeball protected with dry cotton. The local reaction was frequently very marked, large bullæ forming; they were allowed to dry up without any dressing; and the scab usually fell off in less than two weeks, leaving a smooth layer of scar tissue behind. Especial attention was paid to the advancing edges, the applications being made at least a quarter of an inch beyond them. Undoubtedly I paid a little too much attention to the subjective sensations of the patient, and spots and borders were frozen where itching was complained of and the patient was sure that some disease focus was left, though it was hardly possible to determine the existence of a definite lesion. By November, 1908, however, no sign of diseased tissue could be seen; and though the patient still complained of some itching points, all treatment was discontinued.

At the April meeting of the Manhattan Dermatological Society the patient was shown as a cured case; and at the present writing, over six months after treatment was stopped, the cure has remained permanent. The itching has entirely disappeared, and there is not a trace of diseased tissue in the affected area. The bridge and side of the nose and a little of the cheek on both sides is occupied by a smooth, soft, whitish scar, very slightly depressed, and entirely inconspicuous. Even on the lower lid at the internal canthus the skin is merely a little white; the scar tissue is extremely superficial, and there is absolutely no ectropion or deformity. In a year's time the scar will hardly be visible.

CASE II.—This case was just as brilliant in its results; to avoid repetition I shall merely outline it. It was in a young married woman, similar in location to the disease in the first case but very much more extensive. It had been present for a number of years, and covered the nose, both cheeks, the upper lip, and the lobes of the ears. Areas as large as a silver dollar were treated at each session; and the results were the same smooth and handsome scars that were gotten in Miss L.'s case. This patient had been treated by many men in many ways for years, and had practically given up all hope of being cured. As she was threatened with the desertion of her husband and the breaking up of her home she determined to make a last effort. So enthusiastic did she become with regard to the carbon dioxide to the treatment that it became hard for us to limit the area and the frequency of the individual applications. Patches the size of a silver dollar were treated with a large flat cylinder of the material. Gradually but surely a thin slightly film of scar tissue replaced the chronic inflammation. Her cure is almost completed; a few small foci on the nose and a number of them on the lobes of the ear remain to be treated.

CASE III.—This patient was a dentist who had three or four medium sized patches of lupus erythematosus on his scalp near the forehead, and two on his left leg. He had a good deal of treatment at various times, without much result. The patches were already cicatricial in their centres, but did not show much tendency to spread. One year ago two thorough applications of the carbon dioxide were made, with a considerable interval of time between them. All the patches were treated each time. I have not seen the patient lately; but his physician reports an absolute cure. Smooth and very unobtrusive scars are all that is left on the diseased areas.

These cases will serve as examples of a number of similar ones which I have had occasion to observe during the last year or two. The results have been such as to enable me to come to very definite conclusions as to the value of the treatment. I do not hesitate to formulate them as follows:

1. Whilst a few cases of lupus erythematosus respond, for reasons that we do not as yet know, to

some one of the various nondestructive local applications, in most of them the ultimate result is destruction of the affected skin and scar tissue formation.

2. It is entirely proper, therefore, to try the milder applications first.

3. These failing, we must proceed to measures which anticipate and hasten the inevitable result, limiting the amount of skin destruction, and obtaining as cosmetic a scar as possible.

4. For this purpose there is no means at our disposal so manageable, efficacious, painless, rapid, and desirable in its end results as the use of the solid carbon dioxide.

144 WEST FORTY-EIGHTH STREET.

TREATMENT OF HIGH DORSAL POTT'S DISEASE.*

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The treatment of high dorsal Pott's disease is always a matter of considerable difficulty. The explanation lies in the fact that the distance between the kyphosis and the top of the thorax is so short that any plan of treatment that depends upon pressure backward on the upper dorsal vertebrae to support the weight of the head and shoulders necessarily fails because of the shortness of the leverage provided.

The plan of treatment described in this paper was devised as a means of getting over the mechanical difficulty presented. The idea involved is the lengthening of the short upper lever by adding to it the cervical spine. In as much as it is impossible to apply pressure on the front of the neck, owing to the presence of the larynx and vessels, the splint must be extended up to the head and preferably to the forehead and occiput.

It consists of a plaster jacket extending from the pelvis to the head, leaving free the arms and exposing the face, ears, and part of the chest. It conforms to the principles laid down for the treatment of tuberculosis of bone, in that it provides fixation to the parts, prevents increase of the deformity, and when applied with moderate hyperextension of the spine above and below the kyphosis causes the deformity to diminish.

The plan has been given a thorough trial extending over a period of two years, and so far the results have been most gratifying. All the patients have shown marked improvement, the acute symptoms disappearing rapidly after the application of the first jacket. In no case has the deformity increased and in practically all there has been a diminution of the kyphosis.

The general plan of management of these patients includes both recumbent and ambulatory treatment. Although the jacket gives excellent support to the spine, we, nevertheless, keep the patient in bed six months or more as an extra precaution. After that, if there is reasonable improvement, he is allowed

to get up. It is a problem. A natural cure usually takes five or six years to establish itself, and the ordinary methods of treatment do not materially shorten this period. We hope to reduce this time substan-



FIG. 1.—Completed jacket.

tially and at the same time leave the patient with a straight back, but we shall not be able to report definitely on this point until three or four years more have elapsed.

The method of application of the jacket was ar-



FIG. 2. Apparatus used in applying jackets.

rived at after considerable experiment. Most of the difficulties were overcome by the apparatus before you, which was devised by Dr. C. L. Starr and myself. It consists of an upright fork, the arms of which are drilled out to form a socket. On the top

*The length of time he will need to wear the jacket.

*Read before the American Association of Medical Surgeons, Montreal, 1911.

of the fork rests a plate through which pass two pins, each of which fits into the socket in one of the arms of the fork. Thus the plate is secured against lateral movement and may yet be lifted free at will. To this plate are sewn two strips of Mexican felting, and the felt and plate are moulded to nicely fit about the kyphosis and remove all pressure from the spines. The patient's head rests on a forked support which is made to represent the position of one's arm and hand in supporting the head when the patient is in a horizontal position. The arms of the fork are long and thin, and are curved to conform roughly with the shape of the back of the head. The head can be raised or lowered as can also the kyphosis, by thumbscrews on the uprights. The pelvis and legs rest on a padded box. The head rest, spinal support, and box are all placed on a slide so that the apparatus is adjustable to any sized patient and to disease in any region.

The application of the stockinette requires special



FIG. 3.—The method of applying the stockinette.

mention. The method we adopt is to draw the stockinette up over the body and head and then cut it down the sides as far as the axillæ. Thus the stockinette is intact on the body and consists of an anterior and posterior flap on the head and neck. These flaps are sewn together on the tops of the shoulders from the outer border of the material to the side of the neck. The seam then turns upward and the two flaps are sewn together close to the side of the face and head. When the stitching is complete, the material external to the seam is cut away, and the head, neck, and shoulders are left exactly fitted.

The patient is now turned on his face and a strip of silence cloth about four inches wide is stiched to the stockinette, extending from the top of the head to the pelvis, the object being to protect the spines. The hips are also protected in a similar manner.

This completes the preliminary preparations and the patient is placed on the jacket apparatus. The head and spinal supports are raised or lowered until the proper recession of the kyphosis by overextension of the spine above and below has been obtained. An assistant holds the arms out from the sides and draws down the shoulders and the operator proceeds with the plaster. Two or three four inch bandages are first applied to the body, incorporating the padded kyphosis plate. Several narrow bandages are next applied to the head, fastening it securely to its support. The head and body parts of the jacket are then joined together, by making thick straps of plaster six or eight inches long and laying them one on each side of the face, and extending down on to the chest. A similar strap is applied to the back of the neck. The shoulders are covered over in the same way and all the straps are fastened into place

by circular bandages which are worked into the uneven surfaces about the shoulders and neck. The plaster in this region is made very thick, about half an inch usually, as it is proposed to cut out large areas later for the sake of ventilation.

The patient remains on the apparatus until the



FIG. 4.—The application of the plaster completed.

plaster has set and is then freed by lifting him off the forked spinal support and slipping the head support out from under his head. When the back of the jacket is examined the two pins will be seen sticking out uncovered. These are cut off with a pair of ordinary wire cutters, and the area covered over with some plaster cream.

The cutting out is now proceeded with. A sharp knife is required and considerable care must be exercised to avoid cutting the patient about the head. The face is completely freed in front and care is taken to leave ample room for movement of the lower jaw. The scalp is uncovered and the ears exposed, as shown in Fig. 1. If the plaster has been made sufficiently thick, the amount cut out can be increased until the head is simply enclosed in a series of plaster bars. The arms are made quite free by cutting out the plaster for two or three inches in the axillæ. Finally a large opening is made over the chest with a view to allowing free movement of the thorax. When the plaster has thoroughly dried, another length of stockinette is drawn over the jacket and sewn to the inside layer at all the cut edges so as to make a perfectly fitting cover. If care and skill have been employed the final result will be a comfortable and efficient jacket which is no more apt to attract public curiosity than any of the other apparatus used.

The length of time the jacket ought to last depends entirely on the patient. Some may be left on six months while others must be renewed for sanitary reasons in half that time. In dealing with Pott's disease, however, one must be prepared to sacrifice cleanliness somewhat, because of the injury resulting from frequent manipulations. The plan of threading coarse bandages under the inside stockinette and seasawing them daily over the skin will assist materially in keeping the skin healthy.

Many types of apparatus have been used in the treatment of this disease. The principal of these are the jury mast, the ordinary plaster jacket, the jacket with extensions over the shoulders, the Taylor spinal brace with shoulder pads, the chin cup brace, and various braces grasping the forehead and occiput. It has been the misfortune of the writer to see all these appliances fail to prevent the deformity from increasing. The plan of treatment recommended in this paper is not only theoretically sound, but actual experience has shown it to be efficient.

BANDAGES AND SPECTACLES IN DISEASES OF THE EYE.

BY N. B. JENKINS, M. D.,
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Donders (1) observed redness, pain, fatigue, and watering of the eyes in the hyperopic; Stevens (2) stated that disorder of the eyes causes disturbances of the nervous system; Roosa (3) pointed out that blepharitis marginalis may result from ametropia; and Gruening (4) wrote that nasal disease may cause eye disorder.

Limited observation seemed to teach that correction of the ocular muscles was usually necessary in the treatment of trachoma, forms of conjunctivitis, and spasm of the orbicularis and ocular muscles, and the writer finally contributed to the medical journals (5) a theory not unlike that referred to in the preceding.

Bandages frequently aid in the treatment of disease of the nervous system attributable to eye dis-

cavity. Saucer shaped blinders of metallic or stiff material, lined with layers of black cheesecloth may be used. With these the eye lids are free to open or shut—an opaque Buller's shield as it were. Ring's (7) papier maché protector, automobile goggles with black paper pasted over the glasses, and pads held in place by adhesive strips are useful.

These are substitutes for the absolutely dark room which is inconvenient and undesirable, though indispensable, in the treatment of many eye diseases. The patient wears a bandage whenever asleep, day or night, and for about one hour to two hours on retiring, or immediately after awakening, or at the approach of discomfort. In iritis and in some other diseases the bandage may be used continuously.

Woodruff (8) says: "Darkness is soothing, just as in the case of babies who are quieted by darkening the rooms, and it is one reason for the tendency to sleep at night. Cleaves has noticed that prolonged periods of unbroken sunshine produced profound and unfavorable results in the predisposed and particularly in the insane. Hence darkness in the treatment of manias is a very rational method." The eyes of some are in arrest of development or in extreme of variation, and may be unable to withstand continuous exposure to excessive light. There may be inherited from cave dwelling ancestry a need for rest to be had by darkness only.

Glasses selected by the unscientific may bring relief, or they may bring injury. The strenuous efforts of ocular muscles in overcoming the faulty images from unsuitable glasses may bring into action related muscles, and thus cause winking, blepharospasm, spasm of facial muscles, and squeezing together of the eyelids and so interfere with ocular sanitation, that epiphora, redness, forms of conjunctivitis, and other external destructive and disfiguring diseases of the eye and its appendages, and possibly intraocular disorder, may result.

Wearing spectacles unnecessarily in this generation may make them a necessity in future generations. Loeb (9), after extensive investigation, writes: "There are twelve forms of blindness distinctly characterized by the property of hereditary transmission." He adds to these color blindness and refractive errors.

It is scientific to relieve local manifestations of general trouble by treatment of the prime disorder rather than to encourage abuse of the eyes, brain and body by advising spectacles for trifling errors of refraction.

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order, and they are often useful in the study of such cases. The bandage has a place in the treatment of those diseases of the eye and its appendages which are caused by disorder of the ocular muscles. Bandaging may aid in excluding, as a factor in eye disorders, nasal disease, for here bandaging would probably produce no mitigation of the ocular symptoms, would be negative of significance. Bandages are probably indicated in disorders in which there is photophobia without purulent discharge. They are useful not only in phlyctenular and other forms of conjunctivitis, but also in iritis and forms of corneal disease.

The bandage here illustrated excludes light without producing pressure and somewhat resembles Liebreich's bandage (6). It consists of two black cheesecloth pads about six or seven centimetres square, and taped. A well curved metal or rubber hair pin is sewed on the outer surface or between the pads, or curved round to act to bridge the orbital

TREATMENT OF DIABETES AS AN INFECTIOUS DISEASE.*

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The treatment of diabetes mellitus has been in a large measure empirical or directed to the relief of certain symptoms by regulating the diet and modifying certain bodily functions. While much good has been accomplished, yet the results have not been satisfactory, because of the unknown cause.

Glycosuria may have several causes. It may come from irritation of the sugar centre in the floor of the fourth ventricle. It may come from the irritation of certain nerves producing functional disturbance of the liver. It may come from phloridzin, adrenalin, or certain drugs. It has been caused by the removal of the entire pancreas in dogs. Why we do not know, but this cause does not exist in the cases we are called upon to treat. It may be due to the sudden introduction of a quantity of glucose into the alimentary canal, but this is temporary. We may classify these cases by themselves as distinct from cases of chronic glycosuria, which in their early stages show no pathological changes in pancreas, liver, brain, or elsewhere and whose cause, up to this time, we do not know. It is to these latter cases that the term, diabetes mellitus, is usually limited, though the meaning is based on glycosuria. The consideration of the treatment of these patients, as having an infectious disease is what I purpose to do in this paper.

The idea that it may be an infectious disease is not new. Its occurrence in man and wife or in several members of the same family and the gradual increase in frequency of these cases has given rise to the suspicion that it may be due to some microorganism. In Osler's *Practice*, 1906, we read, "Leo believes that diabetes is due to a toxic agent. He has produced glycosuria in dogs by administering both fresh and fermented diabetic urine." Sir Almroth E. Wright, in the May number of *The Practitioner* for 1908, throws out the suggestion, "that there may quite well lie at the root of pancreatic diabetes a bacterial infection (possibly sometimes a colic or tuberculous infection) which might perhaps be amenable to vaccine therapy."

The cause, which I wish to present to your consideration, came to me in one of the wakeful hours of the night, about the middle of last January. I was thinking of a case of diabetes. As the words "glucose," "diabetic acid," and "acetone" came to my mind, there quickly followed this line of thought: "These are products of fermentation. They are due to an unnatural ferment. Diabetes is a fungus disease." I was much impressed with this idea. The first fungus I thought of was the yeast fungus, *Saccharomyces cerevisia*, which occurs in diabetic urine. I also recalled a case of diabetes, where the burning pain at the meatus became accompanied by a slight inflammation. There was barely moisture enough for a cover glass. On staining with methylene blue and examining under a microscope I found leucocytes filled with the yeast fungi.

In the morning I began to look up yeast fungi. I found that they acted directly on glucose, forming alcohol and carbonic acid, and also that they produced certain enzymes which prepare certain food stuffs for this fermentation by changing them into glucose. These enzymes are soluble ferments. From this yeast two have been determined, invertase and sucrase. Their action is catalytic, i. e., by their presence alone they start or promote the fermentations which produce glucose, either by itself or with another form of sugar. For instance, it is shown that invertase will change 100,000 times its own weight of cane sugar into glucose and levulose and that it will convert milk sugar into glucose and galactose. It was found that invertase will invert maltose, the product of the diastatic action of the saliva and also pancreatic fluid, into glucose. The enzymes of this yeast will also act on starch, especially the animal starch, glycogen. This requires two enzymes, one to change the glycogen into maltose and the other to change the maltose into glucose. The former ferment, sucrase, has been but recently determined. The latter is invertase. This formation of glucose by the action of yeast was very impressive to me and confirmed my theory.

I turned to my medical books. In Strümpell's *Textbook of Medicine*, 1901, the author says, "our personal observations lead us to ascribe to long continued and excessive beer drinking (four or five litres and more a day) an influence upon the development of diabetes." A little further he says: "It can, in our opinion, be no mere coincidence that diabetes so often attacks brewers, inn keepers, and the like in Bavaria."

An examination of the fæces of a diabetic showed the fungus in the alimentary canal.

Next came the question, "Can it be found in the blood?" I got a sterile test tube containing glucose agar and inoculated it from a drop of blood carefully drawn from a sterile finger tip. For a few days it showed nothing to the eye, but on removing a little of the blood to a cover glass, staining, and examining under the microscope, I found a small cluster of the yeast fungus. In two more cases there was the same result. The peculiar part of this examination was that no growth appeared to the naked eye, even after several days. It occurred to me that the coagulation of the blood might interfere with the growth of the fungus. To prevent this I mixed the blood with a little sodium citrate and sodium chloride solution, containing one and a half per cent. of the former and one per cent. of the latter. Since using this method to prevent the coagulation of the blood I have got a pure culture of the *Saccharomyces cerevisia* from every case of diabetes possible for me to examine up to this time.

The next question to settle was, "Does the fungus do its work in the alimentary canal or in the blood?" This was easily answered, for a patient on a liberal diet was taken with a profuse diarrhoea, and the filtered discharge showed no glucose. The problem now resolved itself into this, "Can a yeast fungus, existing in the system in such abundance that a culture can be obtained from less than a drop of blood and producing enzymes which will change glycogen and various sugars into glucose be the cause of diabetes mellitus?" Chemical physiologists tell us that glucose is one of the end products of

*Read before a meeting of the American Therapeutic Association held at New Haven, Conn., May 6, 1909.

the digestive processes, that it is the sugar needed by the tissue cells for assimilation, and that it exists normally in the blood to the amount of from one half to one part in one thousand. They also tell us that when the amount increases to two parts in a thousand it begins to be passed off in the urine. It is evident, therefore, that an increase of but two drachms of glucose into the blood of a person weighing one hundred and thirty pounds will preduce glycosuria. This glucose is taken into the body in food stuffs, as glucose or various forms of sugar, starches, and proteids. I distinctly recall an experience when at the Postgraduate School in New York, nineteen years ago. A number of the class, under the direction of Professor Fowler, ate before retiring at night a quantity of glucose in grapes or raisins. In the morning all had glycosuria, which lasted for a day or two. The other food stuffs mentioned must be converted into glucose by digestive or fermentive changes. The starches are changed by the diastatic action of the saliva or pancreatic juice into maltose, a little glucose and some dextrin also being formed in the saliva. The invertin of the intestinal mucosa, which has exactly the same action as the invertase of yeast formation, changes a portion of this into glucose, also some cane and milk sugar if taken in the food. In the liver and in the blood is also to be found a glucose producing ferment. As larger quantities of glucose are more often found in the hepatic veins than in the general circulation, it would seem that most of the glucose is formed in the blood before it leaves the liver.

The portal circulation is peculiarly arranged, evidently with a purpose of holding back the carbohydrates in process of digestion until they can be acted upon by the liver cells and less abruptly and more evenly be admitted to the general circulation, preventing, as it were, the serious consequences produced by anastomosing the portal vein with the inferior vena cava. The portal circulation begins with capillaries of the gastrointestinal canal, pancreas, and spleen, and terminates in the capillaries of the liver. There are no valves. There is no satisfactory information on the tension of these veins or the rate of circulation through them. There is a *vis a tergo*, but the veins can hold the entire blood of the body. Pressure of the diaphragm and abdominal muscles cannot be evenly applied, but can force the blood in either direction. The tension of the vessels can act in the same way. The flow of blood through the hepatic arteries has much to do with the functional activity of the liver as also the flow of blood from the hepatic veins. Doubtless the flow of blood through the capillaries from the hepatic arteries facilitates the flow through the portal capillaries, with which they anastomose. Inspiration and the dilating of the right auricle can affect but little the portal circulation. We have, therefore, a retention of blood, an excessive amount of carbohydrates and yeast fungi in the portal system. To leave the liver this blood must come into capillary relation with the cells of the largest gland of the body, weighing three pounds.

One of the functional activities of these cells is the formation, storing, and excreting of glycogen. This glycogenic function of the liver is thought to

have an important relation to diabetes. Some believe that this function is more active, but more believe that it is less active than normal in this disease. It would seem reasonable that it must vary with the contents of the portal vessels, and with the condition of the liver cells. If the latter are fatty or the liver is undergoing sclerotic changes, we can not expect an increase of functional activity. If, as some would have us believe, the functional activity is decreased or arrested then the formation of glucose from proteids alone as a food must be explained in some other way than by their first being converted into glycogen. There is good reason for believing that in some cases, at least, there is an increase of this functional activity, because of the more rapid formation of the food stuffs required for the formation of glycogen. My attention was arrested by the suggestive statement of Landois, in his *Physiology*, 1904, that "only the sugars fermentable by yeast form glycogen, not those incapable of fermentation." As these latter sugars in health pass in part at least unchanged and as the enzymes of the yeasts can convert them into fermentable sugars, their increase in the portal vessels would naturally lead to an increase in the formation of glycogen.

If, on the other hand, it can be satisfactorily shown that the glycogenic function of the liver is decreased or arrested, those who base their theory of diabetes upon it must be seriously embarrassed. It is an established principle in physiology that the need of a functional activity has much to do with its existence. If there is an oversupply of glucose in the blood, as exists in diabetes, and the production of glucose from glycogen is for the purpose of supplying that food, the need, as a cause for its production, is taken away. Whether the glycogenic function of the liver is held in check or is running away in diabetics concerns my theory but little. Glycogen is found in the yeast cells as one of their products.

Experiments show that the pancreatic juice varies with the kinds of food requiring its action. It would seem that in diabetics its amylolytic ferment would be decreased. The same principle holds good in regard to the salivary glands, and is here easily demonstrated by the dryness of the mouth and fauces.

If we glance a moment at the pathology of diabetes we find patients showing no organic lesion. We find patients with congestion of liver, pancreas, spleen, and kidneys, and with enlargement of these organs. All these changes occur in infectious diseases. In the more advanced cases we find fatty degeneration and sclerotic changes and atrophy in the various vessels, organs, and tissues. These may all be produced by chronic toxæmias. It is curious that such changes, especially those found in the pancreas and central nervous system should be seriously regarded as the cause of diabetes. In considering carefully all the pathological conditions found in diabetics I can find nothing to oppose the theory that it is an infectious disease, while all other theories meet with serious obstacles.

As I have said, by using a sterile solution of sodium citrate and chloride to prevent coagulation I have obtained active growing cultures of the yeast

fungus, *Saccharomyces cerevisia*, from a single drop of blood taken from the aseptic finger tip of every diabetic patient I have been able to find in the last two months. Sixteen patients have been examined. There has been no mixed culture. The solution alone on the culture media gave no growth. Cultures are quickly obtained on glucose agar, plain agar, or blood serum.

The next question was, "What is the resisting power of the diabetic to this fungus?" This was to be answered by the use of A. E. Wright's method of taking the opsonic index. By this method we have compared the phagocytic activity of leucocytes on a twelve hours' growth of the yeast fungus in healthy persons' sera and that of diabetics. In reporting the results it should be understood that the result from normal sera is the standard and called "1." I would say that the work of taking the indices was done at first by two students attending the Medical School of Maine, and experienced in this kind of work. They made a number of examinations independently. The greatest variation was three per cent., and but once as much as that. Later, as the results were so even, one student, J. B. Drummond, has done all the work.

The first opsonic indices were taken on March 7th last. It was easy to tell from the appearance of each patient, which would be the highest. One, a very mild case, was 0.98. The other was 0.76. Four days later two more were taken and found to be 0.62 and 0.56. The one 0.56 was a very old case and the patient showed a marked cachectic appearance. The first examination of ten others showed their indices to be 0.61, 0.63, 0.64, 0.68, 0.69, 0.73, 0.805, 0.81, 0.87, and 0.99. We found, therefore, in each of these patients a lowering of the resistance, varying to 0.56 of normal. The one with the index 0.64 had one leg amputated for diabetic gangrene, four years ago. The one with the index 0.87 had been taking trypsogen tablets for two months and said he was much better than he had been. The one with the index 0.99 was one of those cases with a very low specific gravity, 1.002. His urine contained 1.88 per cent. sugar.

I would mention two more cases in this connection.

CASE I.—The first patient I treated nearly two years ago. She was fifty-three years of age, obese, very feeble, with extreme pallor, weakness, thirst, and a very annoying vulvitis. There was a large amount of sugar. She was treated for five months with rest, restricted diet, and such drugs as opium, belladonna, sodium salicylate, and Fowler's solution. She gradually improved. During the last month of treatment there was no sugar in her urine. Since then I have not seen her professionally but have heard that her health was excellent. Recalling her case in this connection and wishing to examine her blood, I called on her last week. I found her in good color and flesh and full of energy. She said she was eating anything she pleased and felt perfectly well. I felt sure that her blood would show something of interest. Her opsonic index was 'way above normal, 1.23. A drop of her blood showed the presence of the yeast fungus. Her urine had a specific gravity of 1.030 and contained 2.5 per cent. sugar. The quantity in twenty-four hours proved to be seventy ounces. We note that her improvement in health was accompanied by a marked increase in her resisting power to the disease.

The other patient I was especially interested to examine, as it is one of those cases generally regarded as the diabetes of lactation, coming on during the last months of pregnancy. They are ex-

plained as due to the absorption of the newly formed milk sugar in the breasts:

CASE II.—This patient was thirty years old. She had one child, six years old. During the latter part of her first pregnancy, she had glycosuria, which gradually disappeared after her confinement. She was eight months pregnant. Last December a careful analysis of her urine showed no sugar, but for the last two months, in three examinations, sugar had been found. Her urine now had a specific gravity of 1.030 and 2.5 per cent. sugar. As expected her opsonic index was about normal, being 1.04. The culture from her blood, as well as from her milk, showed the yeast fungus. In this case the blood culture was obtained by my assistant, while that of the milk was obtained on the following day by the attending physician, Dr. N. M. Marshall.

The examination of these sixteen cases of diabetes mellitus show three things, 1, the existence of innumerable yeast fungi in the blood of each one, 2, a disturbed power of resistance to this germ, and 3, that the opsonic index registers a fair statement of the general physical condition of each patient.

What is shown by the vaccine treatment in these cases? I have been able to study its use on but six patients, and that for less than two months, but it shows quite a little of interest. The vaccine has been made in the usual way. A twelve hour growth has been used and the strength has been 100,000,000 of dead fungi in fifteen minims of sterile salt solution. I have used from five to fifteen minims hypodermatically as a dose with no general disturbance and no local disturbance except rarely a slight soreness. I have used the injections at intervals of from three days to a week. I have not used any drug which would affect the result, but have not allowed sugar to be taken. I have allowed some starch foods, as a little oatmeal, half a slice of bread, or a small potato with each meal. As usual the patients have always exceeded the allowance. In every case the opsonic index has gone up and after two or three treatments gets above normal.

Here are some of the cases:

Mrs. S.,	March 7th,	14th,	21st,	28th,	April 5th,	10th,	17th,	19th.
Index	0.98,	1.004,	0.984,	1.000,	0.57,	0.75,	0.72.	

Since April 19th, her index has been above normal. On May 4th, it was 1.12. It will be noticed that on April 5th, there was a sudden drop to 0.57. Investigation revealed that some friend had given her a new recipe for making gluten bread; that she found it so fine that she had been eating large quantities, in fact, she had been living on it for a week.

The next case was a man of sixty-two, who had had diabetes for over five years and had a marked cachectic look. On March 11th, his index was 0.56, on March 14th, 0.71, on March 21st, 0.78, on March 28th, 1.14. Since then it had been above normal. He felt much better, was stronger and able to do more work. His face now has some color.

The third case presented a very bad condition. She was a young married woman, aged twenty-five. With her the disease was very acute. She had suffered great loss of flesh, strength, color. Her lips were cracked, mouth and throat dry, intense thirst. She drank enormously and passed immense quantities of water. Her urine had a specific gravity of 1.043, seven per cent. sugar,

diacetic acid and acetone in abundance. I have treated her twenty-five days. Her index on

April 16th was 0.63.	April 17th, 0.89.	April 17th, 1.04.
April 19th, 0.91.	April 24th 0.97.	May 1st, 1.11.
		May 4th, 1.10.

In her case the vaccine was used every few days. With her rise of index came a marked improvement in her general condition. She felt very much better. The diacetic acid disappeared from her urine as well as the acetone, but the specific gravity remained about 1.043 and sugar about six per cent.

The other patients treated have got on in about the same way. With the increase of the opsonic index has come a sense of well being and of more strength.

In regard to the effect of the treatment on the quantity of sugar and urine I am as yet not able to say very much. The time for observation has been very short. The quantity of urine and the amount of sugar depend very much on the kinds and amount of drink and food taken. I have not been able to give this part of the treatment the attention and study it requires to report results with any degree of accuracy. I have felt it of more importance in the brief time for observation before this meeting to watch the resisting power of the patient rather than those symptoms, which I regard as salutary efforts of nature. I can, however, say this, that in a mild case the amount of urine passed during the night has dropped off one third, that the specific gravity has dropped from four to eight degrees, that the sugar is also less. Where one drop would begin to throw down the copper in Fehling's solution it now takes from four to ten drops. In the cachectic case spoken of the man went one night without passing urine. In the very acute case the thirst and amount of water has become very variable. One night she passed water but once, something unknown to her since her illness.

Because diabetes is a disease of fermentation; because the yeast fungus is found in the blood; because its actions explain all the symptoms as well as the pathological conditions; because the patients show a disturbed power of resistance to this fungus; and because this lowered resistance is increased by treatment with vaccine; I believe this yeast fungus is the cause of diabetes and that it should be treated as an infectious disease.

The indications for treatment are to restore the lowered power of resistance, destroy or remove the cause, and prevent, relieve, or remove the complications which may arise.

The lowered resistance may be removed by the action of vaccines and the careful regulation of the diet. The diet should be the oat meal diet or adjusted to the needs of each patient. Some starch food should be used to prevent other fermentations of fats and albuminoids, which give rise to more serious toxic substances.

The destruction or removal of the cause may be accomplished by the use of antiseptics, by increasing the phagocytic action of the leucocytes, and by maintaining a healthy activity of the kidneys.

To prevent, relieve, or remove the complications there must be relief from mental worry, a careful regulation of the diet, a promotion of oxidation by the use of those remedies which will improve the

oxygen carrying function of the blood and by deep breathing exercises in fresh air, which at the same time assist in the removal of the excessive amount of carbonic acid gas from the body. The use of alkalies in acidosis, the maintaining of a high power of physical resistance; tonics and surgery are also sometimes necessary to accomplish these ends. It will be the part of the good surgeon to watch the opsonic index and not operate when it is low.

I am aware that I have not considered diabetes mellitus from the usual standpoint, that I have not proceeded far in my investigation, but I sincerely hope I have gone far enough to make my paper worthy of the thoughtful consideration of the members of this association.

REMARKS MADE IN CLOSING THE DISCUSSION.

In answer to the question of Dr. Morris I would say:—It is true that the common opinion is that the yeast fungus acts on sugar, fermenting it into alcohol and carbonic acid, but it is necessary that the sugar be of a particular kind for this fermentation to take place. To produce this particular kind of sugar is another function of the fungus. It is done by the action of the soluble ferments or enzymes secreted and thrown off by the fungus. The one longest known is invertase, which, as I have said in my paper, inverts into glucose cane and milk sugar and also maltose, the product of salivary and pancreatic digestion of starch. Another enzyme is sucrase. This was discovered by the action of the yeast fungus on glycogen, producing glucose. To do this two ferments are necessary, one to change the glycogen into maltose, which is the action of sucrase, and the other to invert the maltose into glucose, which is done by the invertase. It is because of the formation of glucose by these enzymes that I have dwelt on them especially.

These yeast fungi are very common and generally found in the alimentary canal. Like many other germs they may exist there without any injurious effect, but when a lessened resistance occurs, they take on a greater, a disease producing activity. Take, for instance, the colon bacillus. It exists, as it were, normally in the intestines, without causing any pathological change, but let a lessened resistance occur, like obstruction, and it takes on a malignant activity. So also we find it the cause of cholecystitis, appendicitis, pyelitis, urinary cystitis, etc. It is found to vary so much in its character that special vaccines are necessary in each case to produce the best results.

It is evident, therefore, that Koch's law, announced many years ago must be modified somewhat in respect to those germs, which vary in their activity and require a state of lessened resistance to produce disease.

Undoubtedly there are many causes which tend to produce a lessened resistance in cases of diabetes mellitus, such as nerve shock, nerve depression, pregnancy, obesity, and certain diseases like syphilis. It is possible that the removal of the entire pancreas may give rise to this lessened resistance. This can easily be determined by experiments. This and many other questions I have not yet been able to work out with the time at my disposal.

610 CONGRESS STREET.

VACCINE THERAPY IN GENITOURINARY INFECTIONS.

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During the past eighteen months the writer has utilized vaccine therapy in the treatment of seventy-five patients with localized genitourinary infections; of this number fifty-six have been cured, seventeen are now under treatment, and two were improved but not cured. Sixty-six had gonorrhoeal infection without other infecting organisms; nine had gonorrhoeal plus secondary infection, of which eight gave only colon bacilli in cultures; one colon bacilli with the *Staphylococcus aureus* and one with the *Staphylococcus aureus* alone. Two of these received gonococcic vaccine but none for secondary organisms. One left the city and was untreated for infection with colon bacilli and streptococci. Among the seventeen now being treated two seem intractable.

The time required for the treatment varied from three weeks to many months as some of the patients were out of the city for one or more months at a time and received no treatment while away. The doses of vaccine varied from three to twenty; dissipation, secondary infection, and absence from the city being the cause of most of the prolonged treatment. One patient with infection of the prostate with colon bacilli alone remained uncured in spite of regular assiduous treatment of all kinds including a prolonged course of vaccine.

A detailed report of these cases will not be given but instead the impressions and opinions that have arisen from the use of this form of treatment.

There seems to be no doubt that in this treatment we have a valuable adjunct to our usual armamentarium and that it should be so used in genitourinary infections, rather than to allow it to supplant other forms of treatment. Many factors tend to make this true, especially as regards infections of the prostate gland, seminal vesicles, and bladder, and to a less degree infections of the urethra.

After making allowances for a biased opinion from undue enthusiasm, I feel convinced that the patients to whom this treatment was given have made more satisfactory progress than have patients with the same infection to whom the routine local treatment was administered without vaccine. In no instance have harmful results been produced; at times, however, there was slight increase in the discharge from the urethra and perceptible aggravation of urinary symptoms, which would usually appear during the negative phase and were of short duration, only occurring in a small percentage of the patients.

More uniformly satisfactory results followed the treatment of gonorrhoeal conditions than the infections with colon bacilli and staphylococci. In fact in all of the stubborn cases secondary infection was present and although gonococci were numerous, in many of them early in the disease and the gonococcic vaccine caused these germs to disappear with distinct improvement of the conditions, the colon bacilli and staphylococci kept up milder but very persistent symptoms.

After suitable and at times prolonged treatment

with gonococcic vaccine gonococci disappeared from all of the patients with results entirely satisfactory except in the nine cases with secondary infection. By "entirely satisfactory" I mean the urethral discharge ceased, the urinary symptoms disappeared and alcoholic and venereal excesses did not cause a recrudescence of gonorrhoea.

There were a few of the patients who made much more rapid progress than could, as a rule, be expected from those with extensive and deep infection which had existed in several instances from five to ten years with constant recurrences. In contrast to this class were other patients, with apparently slight urethritis and trivial complications, who made very poor progress, and seemed to make slight immunizing response. There was still a third class in whom the results were very satisfactory, and after a course of vaccine and routine treatment were cured and remained well; the initial condition of these patients being less severe than those in the first class renders the results less remarkable.

The tendency to relapses appeared to be lessened and especially in patients to whom the treatment was given during the subsiding stage of acute gonorrhoea. I now recommend that all patients take a course of vaccine during the latter weeks of the acute disease or rather during the declining stage after the discharge has ceased. This is of undoubted value if begun with small doses, at short intervals, and during a period when the patient is in good rather than bad condition.

The uncertainty and complications involved in determining the opsonic index prevented me from carrying out this method of selecting the time and dosage of vaccine. My experience has led me to believe that equally good results may be obtained by using "common sense" and judgment in deciding upon the time and the amount of vaccine to be given. Judging from published reports my results with small doses every fifth, sixth, or seventh day, and gradually increased, have appeared to give better results than have large doses regulated by the opsonic index.

An interesting feature has been the prompt response in all patients in whom active complications developed as epididymitis and prostatitis; the institution of vaccine therapy soon after these inflammations have abated has been followed by unusually satisfactory results. I had noticed this, however, of routine treatment before vaccine therapy came into vogue.

The improvement in all probability is due to an elevation of the opsonic index from the autoinoculations which occurred during the acute complications.

Stock vaccine has been used in all the patients with gonorrhoea and was entirely satisfactory—in fact is no doubt preferable to an attenuated autogenous strain of gonococci.

Five to fifteen millions have been administered at the initial dose and an increase of about five millions made at subsequent doses until the fifty million mark was reached. It was rarely necessary to exceed this amount. That opsonins are fermentlike in their nature, as is stated, seems substantiated by the fact that often great improvement followed quite small doses.

Autogenous or personal vaccine was used in all

of the patients with secondary infections. This was obtained from the urine voided after thoroughly washing the glans penis, irrigating the urethra, and massaging the prostate and seminal vesicles. Colon bacilli were found in all of these except one with a pure culture of the *Staphylococcus aureus*. Dr. Edgar Paullin, the bacteriologist, who cultivated the organisms and prepared the vaccine, informed me that in two instances the colon bacilli had assumed a rather unusual morphology, appearing as diplococci, somewhat larger than gonococci.

Gonococci were not demonstrated in all of the cases, as smears failed to show them in a certain number in whom the symptoms and history were sufficiently clear to institute this plan of treatment; all of my patients being in my private practice it was not thought justifiable, for the sake of scientific accuracy, to aggravate the symptoms to obtain discharge containing gonococci, as it was hoped that the treatment would prove the diagnosis.

Stale pus and retained body fluids are poor in antibacterial substances and, when possible, should be replaced by fresh secretions rich in such substances; this become particularly imperative in prostatic and vesicular inflammation; the disintegration of the leucocytes liberates a trypticlike ferment which lessens or destroys the antibacterial substances, digests pus cells and albuminous secretion, converting it into albuminose which is constantly present and sometimes in considerable quantities, when these organs are inflamed. The removal of this secretion low in opsonic power is one of the curative factors which underlies the treatment by prostatic massage and of which we were formerly unaware; autoinoculations are also known to follow massage, and thus is explained another reason for the improvement which follows this procedure, and at the same time shows why it is inexpedient to administer a vigorous massage at the time of giving a hypodermic injection of vaccine.

Hot urethral irrigations (1 to 5,000 potassium permanganate solution to which is added 1 drachm of sodium chloride and 2 drachms of boric acid to 2 quarts) are of value and should be administered daily until the purulent discharge ceases. I am inclined to think that much of the virtue of irrigations is due to the heat and the hyperæmia which follows. Hot rectal douches appear to be of use in the treatment of prostatitis and probably produce their good effects by raising locally the opsonic index and by promoting a freer flow of blood through the inflamed parts. Hand injections and internal remedies were given when needed to keep the urethral inflammation under control.

Many phases of the subject of theoretical or academic interest present themselves for consideration, but as our knowledge is still meager it seems better to refrain from these discussions and to report only the facts and impressions gained from the use of vaccine treatment.

—CONCURRENCES.

From the experience gained in the treatment of seventy-six patients with localized genitourinary infections the conclusion that this form of treatment affords considerable aid to our usual methods seems clearly demonstrated; that vaccine therapy in these affections cannot alone be relied upon seems equally warranted. No harmful results were en-

countered. More uniform results were obtained from gonococcic vaccine than from vaccine prepared from the colon bacilli and from the staphylococci which were found present as secondary infection; stock vaccine was given in treating the gonorrhæal conditions while autogenous vaccine made from organisms, at times, much attenuated was used in treating the secondary infections; perhaps more satisfactory results could have been obtained from vaccine from more active germs. While some of the patients with gonorrhæa made remarkable progress, others without complications made slight immunizing response to the injections but were ultimately cured by persistent treatment. The tendency to relapses can be lessened by injections of vaccine during the subsiding stage of acute gonorrhæa, always beginning with small doses.

From five to fifty millions were given every three to eight days during a period when the disease was in abeyance rather than when aggravated; the dosage was not regulated by the opsonic index. Massage of the prostate and vesicles, when these organs are inflamed, is particularly indicated. Hot urethral and rectal irrigations appear to raise locally the opsonic index.

1013-14 CENTURY BUILDING.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXVII.—How do you treat supraorbital neuralgia? (Closed June 15, 1909.)

LXXXVIII.—How do you treat epistaxis? (Answers due not later than July 15, 1909.)

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Answers due not later than August 16, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVI has been awarded to Dr. Charles Nahum Haskell, of Bridgeport, Conn., whose article appeared on page 1311 of volume LXXIX.

PRIZE QUESTION LXXXVI.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOUS DISEASE.

(Continued from LXXIX, p. 1313.)

Dr. Samuel Stalberg, of Philadelphia, remarks:

The form of pulmonary tuberculosis in which an early diagnosis is of the greatest value is the so called "chronic ulcerative phthisis," or plain "consumption." The onset of this disease is in the majority of cases, so insidious, and its early manifestations so indefinite, that the presentation of any symptom or sign known to be associated with the

condition, or a part of its usual picture, should compel us to look for other evidences of the disease.

And it is not alone our duty to attempt a diagnosis of phthisis when a patient presents himself for an opinion as to its presence or absence, but frequently when the patient consults us for some vague symptoms, it will be possible for us, by searching for physical signs, and by making a full inquiry into the family and personal history, to discover the presence of pulmonary tuberculosis. In the early stages there is probably no one pathognomonic sign, and it is by association of symptoms and facts alone that we can arrive at a diagnosis.

In the early diagnosis of phthisis we should consider: 1, Family history; 2, personal history; 3, symptoms; 4, physical signs; 5, tuberculin reaction; 6, sputum examination; 7, x ray or fluoroscope; and 8, recovery of tubercle bacillus from the blood.

It must be said at the outset that it will not be necessary in all cases to employ, or enter into, each of these methods, nor will it always be possible to elicit facts from each in every case, but a combination of any one or more of them is what will be conclusive. We should closely question the patient regarding the presence of tuberculosis in the immediate family. Without taking into consideration the question of heredity, it has been shown that about fifty per cent. of the cases of pulmonary tuberculosis can trace their source of contagion to cases in the members of their family—wife, father, sister, etc. More remote members of the family, such as uncles, aunts, etc., should also be inquired about.

Under personal history, the occupation, nature of the house in which the patient lives, and his mode of life, should be entered into. The influence of certain occupations on the development of tuberculosis, such as printing, clothmaking, cigarmaking, etc., is well known. Infection from living in houses that formerly harbored consumptives is a frequent occurrence. In questioning regarding occupation and place of dwelling, the physician should go back several years in the patient's life. The mode of life of the patient, whether under favorable hygienic conditions or otherwise, should be ascertained, and his habits, whether temperate, regular, etc., investigated. His previous medical history, especially in regards to chronically enlarged cervical glands and the recent attack of influenza, should be gone into.

The symptoms that an early cases of phthisis may present, one or more, are as follows:

But we will probably better understand the symptoms and physical signs by stating what we mean by an "early case." An "early case" in the majority of cases should not go beyond the stage of infiltration, and in some cases beginning consolidation. The constitutional symptoms are produced by the toxins of the soluble proteins set free by the disintegration process, while the local signs are produced by the anatomical changes.

The symptoms are, then,

Anæmia. This is a frequent mode of onset. The patient is pale, the cheeks of an ashen color, almost like the picture of pernicious anæmia, though if a blood examination were to be made, only the changes of simple anæmia would be found. To this

pallor is added a sense of lassitude or weakness. The patient loses weight without apparent reason. There is anorexia with gastric irritability, probably vomiting. There is shortness of breath, at first noted only on exertion, later more or less constant. Hoarseness may be present.

There are often chilly sensations or flashes of heat. There is a comparatively rapid pulse, a weak, fluttering pulse, apparently disproportionate to the amount of fever, if there is any present. A pulse of from 90 to 110 is present.

Rise in temperature sometimes occurs in early cases.

The pyrexia amounts to only a degree or two, and occurs toward the afternoon; but it must be remembered that many cases go on to the advanced stage without any fever.

Night sweats, while a symptom of later cases, do occur in early cases occasionally. There may be pain in the chest, increased by cough or forced breathing and corresponding to an area of pleurisy.

Cough. The most frequent mode of onset is with cough. It is noticed that the patient takes cold easily. At first it is dry and hacking, with the expectoration of glairy, mucoid sputum. This cough and expectoration usually is the result of a bronchitis and a congestion about a tuberculous focus in the lung with resulting increased secretion. It is not the expectoration of mucopurulent sputum due to the breaking down of lung tissue of the later stages, and does not as a rule contain tubercle bacilli. It must be remembered that some cases of phthisis go to an advanced stage with no cough at all.

Hæmoptysis. In about twenty per cent. of the cases of phthisis this hæmorrhage from the lungs, usually in the form of bloodstreaked sputum, and sometimes greater in quantity, amounting to an ounce or so of blood, is the first symptom that calls our attention to the probable presence of phthisis. Frequently the physical signs of the condition follow the spitting of blood rapidly. A hectic flush is sometimes present.

Unilateral dilatation of the pupils may be present, probably due to pressure of enlarged lymph glands on the sympathetic nerves.

Physical signs. The patient should be stripped and his bare chest examined. He should be preferably in a sitting posture. Inspection in early cases, as far as the lungs are concerned, may be negative. We may note the hectic flush, unilateral dilatation of the pupil, the pallor, and the shape of the thorax. The thorax may appear normal, but in very many cases it will present the features of the "phthisical chest"—one in which the longitudinal diameter is increased and the anteroposterior diminished. The scapulæ stand away from the ribs, the intercostal spaces are deeper than usual. There may also be emaciation. There may or may not be slight retardation of movement on the affected side, diminished expansion in the infraclavicular space, as compared with the other side. To palpation there may or may not be increase in vocal fremitus in the supraclavicular and infraclavicular space of the affected side. Percussion in incipient cases is often negative, but in some cases impaired resonance or slight dullness is present. There may be felt a form or resistance to the percussing finger.

It is auscultation that gives the most important re-

sults in the early cases. Over the affected apex, as compared always with the normal apex, or, in the case of both apices being affected, as compared with other portions of the lung, the expiratory murmur is longer, louder, and rougher than the inspiratory murmur. In health the expiratory murmur is one third the length of inspiration in duration. The respiratory murmur is diminished over the affected apex. The breath sounds are often interrupted, giving the "cogwheel" effect. Vocal resonance is increased. And in trying for vocal resonance not only spoken voice, but also whispered voice, should be employed. Both are intensified over the affected area. The last features to be noted in auscultation are râles. They are dry or moist, crepitant or subcrepitant, and, heard over one apex, are very significant in early cases, heard usually with forced respiration. But frequently these râles will not be revealed unless the patient is asked to cough. After expiring deeply, the patient coughs, following with a deep inspiration, when the râle or râles will be heard. This is diagnostic.

In a considerable number of cases, the history, symptoms, and physical signs will be sufficient to enable us to diagnose early phthisis, but in a great many cases the results of such investigation will be negative. In these cases resource to the various forms of tuberculin diagnosis should be resorted to. The subcutaneous method consists in injecting by the hypodermic syringe of one milligramme of Koch's tuberculin, and if there is no reaction in two or three days, two milligrammes are employed and gradually increased at intervals until five milligrammes have been injected. The reaction consists in a rise of temperature of one or more degrees, and in slight constitutional symptoms such as malaise, etc. But a better method of tuberculin diagnosis is by the conjunctival method of Calmette and Wolf-Eisner, or by the von Pirquet cutaneous method. A one per cent. solution of tuberculin in normal salt solution is instilled into the eye of the suspected patient. If tuberculosis is present, the reaction will be manifested by a congestion of the conjunctiva and caruncle with a serofibrinous exudate. The reaction disappears in from twenty-four to forty-eight hours. If a negative result is obtained, a second instillation into the second eye should be made in a few days.

The cutaneous method consists in putting a drop of diluted old tuberculin upon the skin and then scarify the latter under the drop of tuberculin. Only the most superficial layers of the epithelium need be removed. At a distance of about one inch a control abrasion is made under a drop of fifty per cent. glycerine and 0.1 per cent. phenol in salt solution. The reaction consists in the production of a hyperæmic zone, from 4 to 12 mm. in diameter, in the centre of which is a papule; the skin is slightly swollen and hard.

There are certain precautions to be observed in both the cutaneous and conjunctival methods. In general, the conjunctival and cutaneous methods give from eighty to ninety per cent. of positive results in early cases of tuberculosis, and therefore, since it is practically ascertained that the risk is very slight, they should form a most important procedure in helping us to diagnose early cases not diagnosticable positively by other means. In regard to x

ray and fluoroscopic examination, such methods at times are of value, as consolidation can sometimes be shown by a shadow, but this requires the services of an expert, and is often unnecessary.

In regard to the finding of the tubercle bacilli, of course that is the most conclusive evidence of the presence of phthisis, but usually their presence in the sputum indicates a stage when the lung tissue is already broken down, and the early stage is passed. Nevertheless, an examination of the sputum should be made in every case, even the earliest. And it occasionally happens that a patient will not show any signs of phthisis and yet be spitting tuberculous sputum.

Very recently a method has been devised which promises to be of great value in the early diagnosis of phthisis. Rosenberger has recovered from the blood of fifty sufferers from tuberculosis the tubercle bacilli, in most of the cases long before the presence or detection of physical signs or symptoms. The technique is simple enough, the bacilli being found by the usual staining methods.

I shall not discuss either "phthisis florida" or the pulmonary form of acute miliary tuberculosis.

Dr. Marshall Carleton Pease, of New York, ob-
serves:

While it is quite probable that a hereditary tendency to tuberculosis has, in the past, been given too much weight, yet we should still inquire into the family history. A family of which some of the members have died of tuberculosis has at least an increased possibility of an early and long concealed infection. Further predisposing causes are found in poor muscular development, delicate bodily structure, and any deformity of the chest or spine which limits the free movement of the lungs. Again, we find tuberculosis is not an infrequent accompaniment of a general weakness of the organism, due to anæmia, diabetes, ill adapted food, insanitary surroundings, and intestinal catarrh. It is comparatively common as sequence of whooping cough or measles in children, and is often the final stage of a cirrhosis, heart disease, and kidney troubles. It may be discovered as a consequence of a weakening of the lung tissues following trauma, or an inflammatory process. The latter cause does not hold good in lobar pneumonia, for the reason that this disease rarely affects the apices of the lungs. Any tuberculous foci, as Pott's disease, tuberculous glands, hip disease, etc., of course predispose to a tuberculous process in the lung. While these various ætiological factors are never alone of sufficient value to cause a diagnosis of incipient tuberculosis to be made, yet their presence should always arouse our suspicions and cause a frequent and careful search to be made for signs of beginning phthisis, and in those cases where the signs are of a doubtful character they may lead to an almost certainly positive diagnosis.

The subjective symptoms are at first very mild. There may be a slight cough in the morning, with a trace of blood in the sputum, and some loss of weight. Frequently there is a tendency to sweat at night or on slight exertion. Often a languor and a general weakness with shortness of breath on exertion are the first complaints; and with these symptoms it is common to find an accelerated pulse and

an afternoon temperature from 99° to 100° F. It is to be borne in mind that the subjective symptoms have little or no relation to the stage of the disease; and that in this disease the symptoms are nearly always uncertain and rather indefinite.

The site of an incipient tuberculosis is, in the vast majority of cases, the apices of the lungs. This is a consequence of three general facts. First, there is poor ventilation of the apices, so that in these situations dust and bacilli may for a long time lie practically undisturbed. Secondly, in forced expiration dust and bacilli are driven further into the apices than elsewhere into the lung. Thirdly, there is relatively less blood going to the apices than to the rest of the organ, so that the bacilli have a larger chance or doing destructive work here than in any other portion of the lung tissue. Consequently we look for our first physical signs in a circumscribed catarrhal process at one or both apices. Such a catarrhal process first shows itself by dullness, more or less well marked, over the clavicle and in the supra-clavicular fossa. Many times this is only relative, but if it is one sided the case should be looked upon with great suspicion. If the difference in the note on the two sides is only of the smallest possible degree, the diagnosis should be a very guarded one, as there may be no catarrh present but only an emphysema. In addition to determining the presence or absence of dullness at an apex there should also be an attempt made to form an opinion as to whether or not there is relative loss of expansion of one or both apices. This opinion can be arrived at by percussing along the top of the shoulder during inspiration and expiration, and marking the limits of each with a pencil. It is hardly necessary to add that these percussions must be made with the greatest possible care, for we are often dealing in these cases with very slight variations of note, and a little carelessness will easily vitiate any results which are obtained. Dullness and relative loss of expansion of an apex are perhaps the earliest physical signs of incipient tuberculosis, and consequently their accurate determination is of the greatest possible importance.

The signs obtained by auscultation are even more important than those elicited by percussion. These signs are often indefinite, and only gradually approximate to specific characters. A change from normal in the quality of breathing is significant. Lengthened expiration, a weak, a more intense, a rough vesicular breathing, "cogwheel" breathing, or a vague respiratory murmur are all significant though not positive signs of early tuberculosis. Breathing of a bronchial character at an apex, especially if accompanied by subcrepitant râles, even if these are not entirely isolated and consonant, and dullness make practically certain a positive diagnosis. Fine bubbling or obscurely crepitating râles, limited to a small area of one apex, often audible only after coughing, are usually signs of tuberculosis.

A serous pleurisy in an adult always means tuberculosis; or at least the exceptions are so few that unless some other cause, as cardiac or renal disease, can be found, a positive diagnosis of tuberculosis should be made. In children no such conclusion can be drawn from the mere presence of a serous pleurisy.

In all cases which are regarded as suspicious the sputum should be repeatedly examined for the bacilli. In a few cases they may be found in the very earliest stages of the disease, but much more commonly they only make their appearance when the process has become active and there is free expectoration of sputum. They may be absent for a long time, and in fact it is often impossible to discover them at all in acute military tuberculosis, in fibroid tuberculosis, and quiescent case of ordinary tuberculosis. Emphasis must be placed upon the fact that failure to discover bacilli in the sputum, except after repeated trials, is entitled to slight weight in the diagnosis.

The Röntgen ray is coming to have an increasing value in the early diagnosis of tuberculosis. The plate besides showing a slight shadow at the apex, may also indicate a limited excursion of the diaphragm on the side affected, which unless it can be otherwise explained, affords ground for the suspicion that the lung is undergoing tuberculization. Whether the Röntgen ray has any value, outside of a confirmative one when taken with other signs, is doubtful. Certainly a diagnosis of phthisis should never be made from the Röntgen ray alone.

The various tests which can be made with tuberculin are significant, and have in some cases a confirmative value. An injection of a milligramme or two of tuberculin into a patient who has no fever, will give rise in positive cases to the initial fall below normal followed by a slight rise above normal temperature. In children under six years positive cases should give rise to a reaction to the von Pirquet test, the Moro test, or the Calmette test. The fallacy of all these tests, however, lies in the fact that a healed process or a tuberculous lymph node may give a positive reaction, and so any results obtained from them should be interpreted with great care. Furthermore, the limitations of these tests are such that they often fail in those cases where confirmative evidence is most needed.

In conclusion it may be said that the finding of the comma bacilli in the sputum is proof positive of the presence of the disease, but that their absence, even after many examinations, does not disprove the diagnosis; that the various tuberculin tests have at the most a confirmative value only, and are often uncertain in their action and nearly always inconclusive; and that the Röntgen ray may be of assistance where the other signs point to an incipient tuberculosis. After all our greatest reliance in making a diagnosis of incipient tuberculosis must be placed on the finding of area of dullness at an apex combined with changes in respiratory note, more particularly crepitant râles and bronchovesicular breathing. It must be borne in mind that the early diagnosis of tuberculosis is a complex problem to be solved not by physical signs alone nor by any definite group of etiological facts or symptoms, but rather by taking every possible fact together as a whole. There is no diagnosis more difficult to make and none which will give more satisfaction to the physician than that of incipient tuberculosis; and it may be believed that a conclusion can be reached in practically all cases if a close attention and a proper interpretation has been given to the fine details of the history and the physical signs.

Dr. O. R. Hagen, of Paterson, N. J., states:

In considering the early diagnosis of pulmonary tuberculosis, let us divide our data into primary and secondary. In the primary we will include history—family and personal—, occupation, habits, surroundings, and symptoms by which we make a presumptive diagnosis. On the latter alone we may often base our diagnosis. Under the secondary let us include physical examination and clinical diagnosis wherein we may find evidence for positive diagnosis, but the absence of such evidence does not preclude the disease.

Primary data:—Those whose antecedents or congeners are tuberculous; or with previously sickly history; or having suffered from pneumonia, adenitis, catarrh of the upper air passages, or bone disease, excite our suspicion. Similarly those having bad habits—particularly alcohol—fifty per cent. of alcoholics die of consumption,—those working in dusty or foul air, or are exposed to damp and cold, and are housed poorly, or poorly fed are prone to the disease. These data are only contributory and their absence means nothing for we often find incipient tuberculosis initiating the first sickness of a previously healthy and robust patient.

Of symptoms that are of high importance, cough, anorexia, general malaise, and loss of flesh stand preeminent. Less often dyspnoea is found, rarely there is more than a scanty expectoration, and still more rarely hæmorrhage. However, hæmoptysis, independent of laryngeal, pharyngeal ulceration, cardiac or renal disease is almost pathognomonic of incipient pulmonary tuberculosis. Of course, it also occurs in advance stages. Rarely the disease begins in the larynx. Cough is often slight and perhaps not noticed by the patient, often being described as "simply clearing the throat." On the other hand it may be harsh and racking. Paroxysm of coughing in the morning followed by vomiting is a very suspicious sign,—independent of pertussis, especially in nonalcoholics. Slight loss of flesh and malaise are nearly constant. Feverishness in the afternoon from time to time is very constant while anorexia is variable, though more often present than absent. Suppression of menses in young women is frequently found and is often the first symptom to excite our suspicion of tuberculosis. Lancing, transitory, pleuritic pain or prolonged dull ache, sometimes acute, especially on deep inspiration is frequent. Primary pleurisy, I believe, is nearly always if not always tuberculous. The terms rheumatic pleurisy, pleurodynia, pleuro-neuralgia are dangerous and misleading. A vague gallstone disease or high lumbago is often a beginning tuberculous diaphragmatic or mediastinal pleurisy, and pain of smoker heart, gastralgia, or mild angina pectoris may find their etiology in the Koch bacillus in the pleura. Incipient tuberculosis wears the mask of malaria, bronchitis, disordered blood, or spring fever, more often than it appears in its own personality.

Secondary Data:—Of the physical signs the most noticeable on inspection is the bright eye, hectic flush, and phthisical chest with limited expansion at the apices. Although we find the opposite, round, full, and healthy very often. A nose disease or of the general circulation may be noticed. Vocal fremitus is rapidly increased until the incipient stage

is passed and râles save for a few fine moist ones at the end of inspiration. There is often a cogwheel interruption of respiration or prolonged expiration. The whispered voice is intensified and slight dullness may be discovered. Faint pleuritic sounds are often heard at the site of pain. These signs are most common at the apices, more often the right, but do occur in the lower lobes, or in any other part. They may be entirely or almost entirely absent. The most constant sign is a rapid pulse, independent of any discoverable cause save phthisis and afternoon fever. A rapid pulse independent of other discoverable disease is indicative of tuberculosis in some part of the body, and a few pulmonary signs locate the disease. On the symptoms alone or on the physical examination alone we are often able to make an early diagnosis.

Clinical diagnostic methods are the finding of the tubercle bacillus in the sputum isolated from the blood, the x ray examination, and the tuberculin reaction. The first requires but a simple laboratory outfit but is hardly practicable for the general practitioner. Boards of health and hospitals afford us ample resources for the examination. The second is in its infancy, but its advocates and those working with it promise to put the procedure in the hands of the general practitioner. Of the three methods carrying out the diagnostic tuberculin reaction, the von Pirquet or cutaneous reaction is the best. The ophthalmic reaction is very satisfactory, but corneal ulcers, keratitis and severe conjunctivitis have been caused and even if we had but one bad result in a thousand the method is unjustifiable when we have such good substitutes as the von Pirquet or Moro reactions, which are harmless. The cutaneous reaction is simpler than the Moro, less expensive, and with but slight discomfort. A position reaction in either case in conjunction with our symptom complex is proof positive. A failure to find the bacillus in the sputum is of no weight and as yet, I doubt, if the evidence is sufficient to warrant our saying that a negative tuberculin reaction excludes incipient tuberculosis. The morning sputum should be examined, and the afternoon perhaps repeatedly selected for the physical examination. Apply the von Pirquet reaction in the afternoon and inspect it in twenty-four and forty-eight hours. The x ray in the hands of an expert is often able to show areas of consolidation during the incipient stage.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

Mr John Burns on Consumption: Medical Defence against Prosecution—Physiology in University College—Ophthalmology in Oxford University.

LONDON, JUNE 15, 1900.

The National Association for the Prevention of Consumption has organized a very interesting Tuberculosis Exhibition, which is now open at the Whitechapel Art Gallery, in one of the poorer quarters of the city. The exhibition was opened by Mr. John Burns, the president of the Local Government Board, who delivered a long and eloquent

address. He said that, although much had been done in this country to reduce the amount of tuberculosis, it was still a terrible scourge, especially during the working years of life, for fifty-six per cent. of the total deaths from consumption occurred between the ages of twenty and forty-five. One seventh of all the deaths among members of the friendly societies were due to this cause, and this meant a great economic waste. Speaking generally, the disease was due to poverty, ignorance, drink, and carelessness. The statistics of London alone proved this, for whereas the general death rate from consumption in London was 132 in 100,000, it was only 78 in Hampstead, one of the best quarters of the city, but 215 in Finsbury, with its one and two roomed tenements, its low wages, and its irregular work. Mr. Burns made some strong comments on what he termed the fetish of the front parlor. The workman's front parlor was a mausoleum for wax fruits, stuffed birds, and china dogs, which the children dared not enter and where even the father would be a trespasser. If it was used it would add twenty-five per cent. at least to the breathing space of every workman's home. In new houses being built in London damp and dirty basements would not be found, and the intolerable cellar dwelling was doomed. Wherever there was little light, damp air, dirt, and laziness, consumption found its lair, and in his judgment a good kitchen was the best pharmacy, a good table the best doctor, and cleanliness the best cook. He hoped soon to follow up the notification of tuberculosis order by a circular to poor law authorities dealing with the conditions under which relief could be granted to outdoor consumptive paupers, suggesting methods of self treatment and extending help in the direction of cure and prevention. Consumption was a house disease, almost a bedroom disease, and for its elimination he looked to higher wages with wiser spending, less drink, and less betting, the money being spent on giving the wife and family better food and more house room. It was true that Parliament could do much and municipalities could do more, but the individual could do more than both by personal attention. The exhibition contained many interesting models, pictures, and diagrams. There was also a collection of various pathological specimens showing the effects of tuberculosis on various tissues and organs. It has been very well attended by the poorer classes, in whose behalf it was devised; up to last Friday night it had been visited by 33,340 persons, and on Saturday the attendance was about 8,000. The lectures that have been given on most evenings have attracted overflowing audiences. The value of the exhibition has been great and its success undoubted. It is also intended to send the exhibition to different parts of the metropolis and the country as a form of missionary enterprise.

An unusually interesting meeting of the Cardiff Medical Society took place on June 3d. This was the occasion of the presentation to Mr. J. Lynn Thomas and Dr. Skyrme of a fund amounting to £1,788 by Dr. Lucas-Championnière, the famous French surgeon, the president of the International Society of Surgery. It may be remembered that in July, 1904, an action was brought by a patient against Mr. Lynn Thomas and Dr. Skyrme. The

plaintiff claimed £2,000 damages, but was awarded only £100. The total expenses of the trial were very large. When the plaintiffs' costs had been taxed and the Medical Defense Union had paid £928, there remained to be paid a sum of £3,200. An appeal was issued, signed by over ninety leading men of the profession in the kingdom, including the president of the British Medical Association, the representatives of medical societies all over the country, and those of the hospitals. This appeal was widely circulated, and as a result, during a period of four months, there was collected for the fund no less than £1,788. When the expenses had been paid, the two gentlemen who had been involved in the matter would each receive £800, or just about half the expense to which they had actually been put. There were over 2,000 subscribers to the fund, subscriptions coming from all over the world, showing the universal sympathy felt by members of the medical profession for Mr. Thomas and Dr. Skyrme. Dr. Lucas-Championnière made the presentation amidst a scene of great enthusiasm. Among the other speakers were Dr. Squire Sprigge, the editor of the *Lancet*, and Dr. Dawson Williams, the editor of the *British Medical Journal*. Dr. Lucas-Championnière also gave an address on the modern treatment of fractures, which was listened to by a large audience of medical men.

On Friday, June 18th, the Right Hon. R. B. Haldane, Secretary of State for War, will open the new Institute of Physiology at the University College, Gower Street. The new buildings are completely equipped, and in the opinion of competent observers, there is nothing to equal them in Germany. A feature of the institute is the provision made for the comfort of animals used for experiment. The sheds where they are kept are airy and at the same time well heated. The operating room is fitted up with the same elaborate precautions against sepsis as those in the hospitals of the most modern type, while the arrangements for their accommodation after operation give proof of the most careful regard for their comfort. The new buildings have cost £20,000, including £5,000 for equipment. The teachers of physiology at the University College are Professor Starling, Dr. W. M. Bayliss, assistant professor, Dr. Page, May lecturer on the physiology of the nervous system, and Dr. R. H. Aders Plimmer, lecturer on physiological chemistry, together with a staff of demonstrators and assistants.

University College has been famous as a centre of physiological teaching and research for many years. It may be said to be the cradle of modern physiology in this country. There William Sharpey taught for nearly forty years, and to his teaching it was mainly due that physiology gained its rightful place in medical education. It was at University College that the practical teaching of physiology, begun by Michael Foster, was further developed by Burdon Sanderson. The foundation of a new Institute of Physiology carries on the tradition of University College and gives to the teaching of physiology there vastly increased possibilities of development. The opening of the institute marks an important date in the evolution of scientific teaching in this country, and we may confidently look to Pro-

fessor Starling and his associates to further the development of physiological study.

The senate of the University of Oxford has now for the sixth year arranged to have a course on ophthalmology, which will be held from July 5th to July 17th. The main idea of the course is to demonstrate—on actual patients so far as possible—the whole range of ophthalmology. The first part will be mainly devoted to demonstrating the practical examination of eye patients, the use of the ophthalmoscope, and the work of examining refraction. During the second part the work will be more specialized and the lectures delivered by various ophthalmic surgeons. The university has also decided to grant a special diploma in ophthalmology after examination. It is doubtful if this step in specialism will be favorably regarded by the medical profession as a whole, owing to the fact that the possession of such a diploma may give its holder an unfair advantage over his colleagues, unless the example to be set at Oxford is followed by all the other universities.

LETTER FROM TORONTO.

The Annual Meeting of the Ontario Medical Association.—Anterior Poliomyelitis.—Tuberculous Disease and Milk.—The Canadian Medical Association.

The twenty-ninth annual meeting of the Ontario Medical Association, which was held in Toronto from the 1st to the 3d of June, was the best attended meeting in the history of the organization, there having been present over three hundred and fifty delegates. The meeting was held under the presidency of Dr. H. J. Hamilton, of Toronto, with Dr. Bruce L. Riordan as chairman of the Committee of Arrangements. Dr. William Osler was present and delivered the address in medicine before a large audience. He dealt largely with problems in the prevention of disease, particularly calling attention to pneumonia, instancing the good work done in connection with the construction of the Panama Canal and referring at considerable length to faith healing and kindred topics. He said he had been told that more people annually frequented the shrine of Ste. Anne de Beaupré, Quebec, than went to the hospitals of Canada. He gently hinted to the clergy that they had better leave the practice of medicine to the doctors and confine themselves to their religious duties. Dr. James H. Richardson, formerly professor of anatomy in the University of Toronto, who is the oldest living ex-president of the association, moved the vote of thanks to Dr. Osler.

The address in surgery was delivered by Dr. John B. Deaver, of Philadelphia, on the subject of peritonitis. Dr. Henry Howitt, of Guelph, Dr. George A. Bingham, of Toronto, Dr. Herbert A. Bruce, and Dr. J. F. W. Ross participated in the discussion.

A discussion on the milk question was introduced by Dr. John A. Amyot, bacteriologist to the Ontario Board of Health, who was strongly in favor of the pasteurization of all milk not properly certified. The discussion thereon could be fully discussed under

the supervision of the local medical health officer. Dr. Sheard, the Medical Health Officer of Toronto, followed, opposing pasteurization, principally on the ground that it would result in producers' sending into the city dirty milk. Dr. H. T. Machell, of Toronto, chairman of the Milk Commission of the Academy of Medicine, favored pasteurization only during the three summer months, and strongly urged a vigorous campaign for clean milk, particularly for certified milk. Dr. C. J. C. O. Hastings, of Toronto, chairman of the Milk Commission of the Canadian Medical Association, supported Dr. Amyot, pointing out that it would be many years before even a goodly bulk of the milk supply could be got certified, and that until such times the proper thing to do was pasteurization of an official character.

Among other interesting and important papers and oral communications were those by Dr. L. Emmett Holt, of New York, Dr. A. R. Robinson, of New York, Dr. Hayd. of Buffalo, Dr. Mantou, of Detroit, Dr. Adler, of New York, and Dr. Lockhart, of Montreal. It was decided to meet next year at Niagara Falls, with the following officers in charge: Dr. H. R. Casgrain, of Windsor, president; Dr. F. A. Clarkson, of Toronto, secretary; and Dr. Mullin, of Hamilton, treasurer.

In the *Dominion Medical Monthly* for June Dr. H. T. Machell, of Toronto, gives an account of the cases of anterior poliomyelitis admitted into the Children's Hospital, Toronto, since January, 1899. Of the thirty cases admitted, 1899 to 1908, twenty had occurred in three years. As to seasons, eight were in August, four in September, four in October, two in January, one each in April, May, November, and December, and eight uncertain. In more than half the cases there was either fever or malaise and fever before the paralysis was noticed. Thirteen of the cases were sequelæ to nothing, three to scarlet fever, three to measles, two to enuresis, and nine indefinite. The results in treating this series of cases were: One cured; four incurable; seventeen improved; three left hospital in a week or two unimproved; one died of measles; one died in the isolation hospital. The treatment was with massage, electricity, mostly faradism, and passive movements.

Dr. J. N. Elliott Brown, superintendent of the Toronto General Hospital, writes on tuberculous disease and its relation to milk in the June issue of the *Dominion Medical Monthly*. During the last hospital year there were 140 cases of tuberculosis of various sorts, fifty-three being pulmonary, twenty-four glandular (neck), fifteen of the peritoneum, ten of the spine, seven of the meninges, five of the kidney, five of the hip, and twenty-one of other portions of the body. Ninety-four of the patients were either cured or relieved, fifteen were not benefited, nineteen died, and twelve remained in the hospital. Dr. Brown is confidently of the opinion that from twenty to twenty-five per cent. of the cows supplying milk to the city of Toronto are suffering from tuberculosis, and points out the danger, especially to children, quoting von Behring to the effect that the chief source of tuberculosis in children is tubercularized milk. Dr. Brown considers that the

alarming state of affairs demands immediately a potent remedy, and that this is at hand in the proper pasteurization of all milk under the supervision of the health authorities.

Dr. R. J. Blanchard, president of the Canadian Medical Association, which holds its forty-second annual meeting this year in Winnipeg, August 23d to 25th, visited Toronto during the meeting of the Ontario Medical Association, to interest Ontario members in the coming meeting. The Canadian Medical Association has now been incorporated by act of the Federal Parliament, provincial societies are affiliating with it, an official journal is to be established in the near future, and everything points to a consolidation of the medical societies of the Dominion and a brighter and more important future for the national medical body. If the 1,500 members of the Canadian Medical Association remain loyal to the organization, now that incorporation has been secured, there is no doubt that it will hereafter wield a powerful influence for good on the Canadian medical profession. Dr. James Bell, of Montreal, is to deliver the address in surgery; Professor J. George Adams, of Montreal, a combined address in medicine and pathology; Dr. Adam H. Wright, an address in obstetrics before the Obstetrical Section; and Dr. R. A. Reeve, Toronto, an address in ophthalmology before the Ophthalmological Section.

Therapeutical Notes.

A Painless Mercurial Injection.—Lambking's formula for a painless mercurial injection is given in the *Journal de médecine de Paris* for June 5, 1909, as follows:

R	Metallic mercury (by weight).....	5iiss;
	Wood creosote.....	5iiss;
	Camphoric acid.....	5iiss;
	Palmitin, enough to make.....	5iili.

Or the following formula may be employed:

R	Calomel.....	gr. lxxv;
	Wood creosote.....	5iiss;
	Camphoric acid.....	5iiss;
	Palmitin, enough to make.....	5iili.

M.

These creams when intimately combined form painless preparations for hypodermic injection and they melt at the body temperature, or say 98.6° F.

The Treatment of Furunculosis.—The following method of treatment is attributed to Robin (*Journal de médecine de Paris*, May 29, 1909):

1.—Attack the staphylococcus by giving sulphur baths, taking care not to employ an irritating bath that would create new portals of entry for the microbe. The following is a formula for an approved sulphur bath:

R	Sodium sulphide.....	5ss to 5i;
	Sodium carbonate, dried.....	5vi;
	Sodium chloride, dried.....	5iili.

M. et Sig.: For one bath.

2.—Treat the furuncle itself as follows: (a) Before it is formed apply to the point and to an area of one-third of an inch surrounding it three or four layers of tincture of iodine; (b) after the furuncle has begun to suppurate apply tincture of iodine, in-

cise, clean out and press; then apply the following ointment:

R	Pulverized washed sulphur.....	5iiss;
	Finely pulverized camphor.....	5vi;
	Glycerin.....	q. s.

Mix and make a soft paste, which is to be introduced into the cavity. Cover the part with absorbent cotton soaked in glycerin and leave in position for twenty-four hours, after which the dressing is repeated.

4.—Internal treatment. The following is prescribed:

R	Sulphur.....	5iiss;
	Honey.....	5vi;
	Camphor.....	gr. iv.

M. et Sig.: One teaspoonful to be taken with meals.

After eating, an absorbent powder having a basis of magnesia should be taken in order to overcome any acidity. The following is proposed:

	Magnesium hydroxide.....	5iiss;
	Sugar of milk.....	5iiss;
	Sodium carbonate.....	5i;
	Precipitated calcium carbonate.....	5i.

M. et ft. pulv.: No. xii.

As a drink with meals tar water should be taken. Saline laxatives should be given if constipation is present.

The Treatment of Hæmorrhoids.—Prion is credited by the *Journal de médecine de Paris* with the following formula of an ointment for the treatment of external hæmorrhoids:

R	Poplar ointment.....	5v;
	Extract of rhatany.....	gr. xxx;
	Extract of opium.....	gr. vi;
	Ergotine.....	gr. xv;
	Cocaine hydrochloride.....	gr. vi.

M. et Sig.: Apply once a day.

If the hæmorrhoids are internal it is recommended to introduce into the rectum two or three times during twenty-four hours the following bougie:

R	Extract of rhatany.....	gr. ivss;
	Ergotine.....	gr. iii;
	Extract of belladonna.....	gr. i;
	Extract of opium.....	aa gr. i 3i;
	Oil of theobroma.....	q. s.

Mix and make one short bougie.

An Application for Psoriasis.—The application for four or five days with friction by means of a brush moistened with the following mixture is recommended in the *Journal de médecine de Paris*:

R	Salicylic acid.....	5iiss;
	Chrysarobin.....	5v;
	Birch tar.....	5vi;
	Green soap.....	5vi;
	Rectified petroleum.....	5vi.

M.

The parts should be dusted with some simple powder after the application. At the end of five days, warm bath should be taken every day, followed by the application of petrolatum.

The poplar ointment of the French Codex (*Pommade de peuplier*) is made by dissolving in a marble mortar and mixing with 400 parts of oil, 200 drams (160 gms.) of benzoin, 100 drams (80 gms.) of resin, 100 drams (80 gms.) of turpentine, 100 drams (80 gms.) of castor oil, 100 drams (80 gms.) of solanum nigrum and white tincture, then adding a quantity of oil and heating on a water bath for 24 hours, straining and filtering. To this is added 800 parts of lard and 100 parts of butter. The mixture is then strained, and stored in a glass jar. It should be used in the evening, after the parts have been washed with soap and water, and cooled slightly, when any excess is removed by a dry cloth. The ointment is liquefied again by heat and transferred to a glass jar.

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SEVEN DAY FEVER AND DENGUE.

We publish in this issue a paper by Major Leonard Rogers, of Calcutta, entitled *Is Seven Day Fever of Indian Ports Only Sporadic Dengue?* This paper was sent to the sixth annual meeting of the American Society of Tropical Medicine to be read by proxy. The programme was so full, however, that the paper had to be read only by title. It contains several interesting points which deserve some discussion. The well known work of Dr. Rogers on *Fever in the Tropics* makes his opinions as to the nosological position of any symptom complex worthy of serious consideration.

The facts are, briefly, that there is a type of fever seen in Indian seaports which runs a course of seven days, and there is also a febrile disease which runs a course of three days which is common in Chitral. It has been maintained by Megaw that both these diseases are sporadic dengue. The decision in the matter is complicated by the fact that the cause of dengue is not yet discovered. We must remember that all acute infections may be mild, severe, or malignant, and it is quite possible that a disease which has the features of dengue in the West Indies might give rise to milder manifestations in the seacoast cities of India or in the villages of Chitral, owing to a variation in the virulence of the cause or to a difference of resistance on the part of those infected.

Major Rogers, however, calls attention to the fact that dengue usually pursues a course of three days, while the disease under consideration lasts for seven days, and shows a somewhat higher temperature curve and occasionally gives rise to a typhoid condition. The textbooks, on the other hand, indicate that an attack of dengue with the period of improvement and the period of secondary fever lasts seven days. A marked difference in symptomatology, however, is the terminal maculopapular eruption in dengue, which has not been noted in any of the published descriptions of seven day fever with which we are familiar.

In one respect the disease described by Major Rogers resembles yellow fever, and that is in the low pulse rate which accompanies the high temperature. It is a very difficult matter, however, to classify a disease from a study of temperature curves and pulse curves; those submitted with the paper would seem to show that the febrile course terminates on the sixth day, so that "six day fever" would appear to be a more appropriate name for this disease than "seven day fever." At present we are inclined to agree with Megaw that both seven day fever and three day fever are varieties of dengue.

The final decision, however, depends upon the discovery of the cause of one or other of the diseases. It is not beyond the range of possibility that a genus of animal parasites will finally be found which may have more than one species, so that, like the malarial parasites, one species may be found to cause dengue, another species may be the cause of seven day fever, and still another species may be found to be the cause of yellow fever. The clinical difference between these diseases is no greater than that between quartan malarial fever and the more malignant forms of aestivoautumnal infection.

STATE BOARD EXAMINATIONS.

Examinations are admittedly imperfect means of determining the fitness of the person examined for some particular line of study or work. The further away the examination gets from a mere test of book learning, however, the less is the imperfection of this method of ascertaining the fitness of the applicant. Even in passing a pupil from one class to another in a school, the written examination is not wholly to be depended upon as a criterion of the candidate's capacity or learning. How much less trustworthy must the result be when the examination is carried on with the view of determining the fitness of a candidate to practise medicine! It would not do, however, to admit all applicants to practice without subjecting them to some kind of test as to

fitness, and the National Confederation of State Medical Examining and Licensing Boards has undertaken a praiseworthy task in endeavoring to bring about a form of examination which will be a measurably satisfactory test of the fitness of the applicant for assuming the grave responsibility involved in the practice of medicine.

At the Atlantic City meeting of this organization a resolution was adopted recommending the various State boards now restricted as to their methods of conducting examinations to take proper steps to secure amendatory legislation which will enable them to conduct a mixed examination, oral, practical, and written, of all applicants for the medical license. The real test of the qualifications for the practice of medicine can be made only at the bedside and at the operating table. The ideal examination would involve clinical observation of a wide variety of types of diseases, recommendations as to the treatment of the cases, and several operations on the cadaver carried out under the supervision of the examiner. This, supplemented by oral and written examinations as to actual acquirements from books, would indeed serve as a test for the fitness of the applicant to engage in practice. Nothing short of this will be satisfactory, and we trust that the National Confederation of State Medical Examining and Licensing Boards will continue their efforts in the direction of improving the character of examinations until some such procedure is adopted by every licensing board in the United States.

THE SUMMER OYSTER.

It is generally admitted that the oyster may become the vehicle of poisonous material, either the specific organisms of such diseases as typhoid fever or poisons that act more quickly to produce violent gastrointestinal disturbance. It is probable that these nonspecific poisons are more apt to lodge in the oyster or its shell during the summer months—as popularly defined, during the months in the names of which the letter *r* does not occur—than at other periods of the year. But in the public mind the summer noxiousness of the oyster is dependent on the spawning process. The soundness of this idea has been upheld by many competent observers, and it has been denied by others equally competent. The question is a difficult one to decide definitively, for a spawning oyster that has proved injurious may also have been infected from without with some virulent material.

A French military surgeon, Dr. J. Doche (*Archives de médecine et de pharmacie militaires*,

May), frankly commits himself to the view that the spawning function is really the cause of one variety of the noxious activity of the oyster in summer. Spawning oysters are sometimes called "milky," because the juice which surrounds them in the shell has more or less the appearance of milk. According to M. Doche, this milky fluid contains toxins which the oyster has excreted as a result of its physiological condition. He relates the circumstances attending the violent poisoning of a number of soldiers consequent on their eating oysters in summer, and he makes out a very plausible case in support of his contention, though not one that is altogether convincing. It may be remarked, in passing, that the milkiness of the juice may be turned to practical account by accepting it as an indication that the oyster is spawning.

Men have eaten oysters in the summer months and found them both delicious and harmless. M. Doche admits that this is true, but he points out that, though the months of May, June, July, and August make up the spawning period, not all oysters are spawning at the same time, and it may very well be that certain oysters taken in summer do not happen to be spawning and are therefore as wholesome as they would be at any other time of the year. A universal feeling is apt to be well founded, and the dread of summer oysters is practically universal. The question is of rather greater importance to Europeans than to Americans, for the cooking of oysters is almost confined to America, but certainly our own people would be prudent if they altogether refrained from eating raw oysters in summer.

WOMAN'S PHYSICAL DISABILITIES.

With his well known grace of diction and aptness of illustration, Professor J. George Adami, the distinguished pathologist, delivered on April 14th before the class of young women who received their nurses' diplomas from the Royal Victoria Hospital Training School, of Montreal, a valedictory address, entitled *Man and Woman*, in which he clearly pointed out the weaknesses of women and their elements of strength, demonstrating emphatically the futility of the "Suffragette" movement unless women were prepared to surrender their peculiar privileges in return for equal rights with men.

Woman's physical weakness, as shown by her more delicate skeleton and her correspondingly weak musculature, was properly allowed to be offset by the greater sensibility of her perceptions and her readier sympathy as the offshoot of her pervading maternal instinct. Dr. Adami maintained, quite jus-

tifiably in the main, we think, that women were not quite equal to men's work, but it seems to us that in one respect he overestimated their physical inadequacy. With reference to the catamenial function, he says: "Her activities are subject to periodical functional interruption or lessening. If this reduces her working capacity only five per cent., and that is a generous estimate, it means that, as compared with man as a competitor in the common work of the world, she is not and cannot be his equal by this five per cent."

Now, if menstruation causes a woman to lose five per cent. of her capability for work, she should be totally disabled for a day and a half every month. We are not inclined to think that anything like that amount of disability is generally shown by women employed in business establishments. Indeed, a somewhat extensive observation of business women has failed to indicate to us that they often omit even an hour's work by reason of catamenial impairment of their capability. They may suffer, but they suffer bravely; they rarely flinch.

AN EXTRAORDINARY DEFORMITY OF THE PENIS.

Slight curvatures of the penis, sometimes associated with its deviation from the median plane of the body or with more or less twisting, are not very uncommon. Usually they are apparent only in the erect condition of the organ, with the efficiency of which in copulation they do not generally interfere. A remarkable case, however, is recorded by Dr. M. Bilhaut and Dr. M. Bilhaut, Jr., in the May number of the *Revue pratique des maladies des organes génito-urinaires*.

A baker, fifty-one years of age, sought for relief from a deformity of the penis which rendered sexual intercourse impracticable. The proximal two thirds of the organ were permanently in a state of sharp curvature with the concavity directed upward. In the flaccid state the distal third hung down so that the entire penis had a sigmoid shape; during an erection this dependent portion became continuous in direction with the ascending arm of the permanently curved part, so that the entire organ had very much the shape of the letter U.

Two little tumors of the corpora cavernosa were found near the junction of the curved and the pendulous portions of the penis. It was thought that their presence had given rise to retraction and thickening of the dorsal aponeurosis of the organ, and they were removed. The operation was followed by complete restoration of the normal shape and

efficiency of the penis. The tumors were of the nature of those that have been described as plastic indurations of the corpora cavernosa, usually thought to occur as an expression of gout or diabetes. The authors state that their patient was not diabetic.

HOW NOT TO DO IT.

On Saturday, June 26th, the United States Senate passed a bill, already passed by the House, authorizing the Director of the Census to appoint commissioners to attend the Paris conference for revising the *International Classification of Causes of Death*, to be opened on July 1st. Inasmuch as the last steamer by which a person could leave this country in time to reach Paris by the first of July sailed from New York on Wednesday, June 23d, three days before the action taken by the Senate, Congress can hardly be said to have acted precipitately on a measure which, in one form and another, has been before it for several months.

As we stated in our last issue, however, the country has not had to go without representation, several of the government bureaus having on their own motion deputed suitable representatives. The Bureau of the Census has sent Dr. Cressy L. Wilbur, and the Navy Department has sent Surgeon Pleadwell, as we have stated before. We may now add that the Public Health and Marine Hospital Service has detailed Surgeon H. D. Geddings. But all this is either quite independent of Congressional action or anticipatory of such action.

THE KUSSMAUL MEMORIAL.

On May 15th there was unveiled in Freiburg, Germany, a memorial to Adolf Kussmaul, in presence of the family, the reigning Grand Duke of Baden, the professors and students of the university, and the civic and state officials. Christian Bäumler, the professor of pathology and therapeutics in the university, in his speech, paid a high tribute to the life and work, scientific as well as professional, of the great German physician. The memorial, a work by Professor Volz, of Karlsruhe, is made from Carrara marble and consists of a pedestal with a tablet representing an allegory of medicine, and is crowned by a bust of Kussmaul. Kussmaul had been a professor of medicine in the University of Freiburg from 1863 to 1876, when he was called to Strassburg. He died in Heidelberg on May 28, 1902. His *Lehrbuch der inneren Medizin* will always be remembered as one of the most charming books written by a physician.

News Items.

Changes of Address.—Dr. H. Greenstein, to 612 Lexington Avenue, New York.

Serum and Vaccine Therapy was the title of the paper read by Dr. H. R. Livengood, of Elizabeth, N. J., at a meeting of the Clinical Society of the Elizabeth General Hospital, held on Tuesday, June 15th.

The Red Cross Guild Hospital, of San Mateo, California, was recently presented with a tiny bottle of radium, to be used for experimental purposes, the gift of Mrs. Whitelaw Reid, wife of the United States Ambassador to Great Britain.

Aphasia.—The recent discussions on the question of aphasia was the subject of a paper presented by Dr. F. X. Dercum at the closing meeting for the season of the Northern Medical Association of Philadelphia, which was held on June 25th. The discussion was opened by Dr. Charles Potts.

The Richmond, Va., Academy of Medicine and Surgery held a regular meeting on Tuesday evening, June 22d. A good programme was presented which included a paper entitled Surgery of the Peripheral Nerves, by Dr. J. Shelton Horsley, and a paper on Erythema Multiforme, by Dr. Thomas W. Murrell.

Mortality Statistics of Minneapolis.—During the month of May, 1900, there were 265 deaths from all causes, which corresponds to an annual death rate of 8.63 in a thousand population. The death rate for the year 1900 was 8.92. There were 31 deaths from tuberculosis, and 26 from pneumonia during the month.

To Regulate the Sale of Narcotics in Pennsylvania.—At the annual meeting of the Pennsylvania State Pharmaceutical Association, held recently in Bedford Springs, a special committee of five was appointed to draft a new State law restricting and regulating the sale of opium and its derivatives and preparations.

The New York Ambulance Board.—Mr. Nathan Bijur and Mr. Harold I. Pratt have been appointed by Mayor McClellan as members of the new Board of Ambulance Service. The ex-officio members of the board are the Commissioner of Police, the Commissioner of Charities, and the president of the board of trustees of Bellevue and Allied Hospitals.

The Children's Hospital of Washington is about to begin the erection of additional buildings at Thirteenth and W Streets to cost approximately \$125,000. Two wings will be added at the southerly end of the present structure with which they will be connected by glass covered passage ways. Extensive improvements will also be made in the old building.

Medical Assistance by Wireless.—According to newspaper reports, a wireless message for medical assistance was received from Swan Island, in the Caribbean Sea, by the surgeon of the *Cartago*, when the steamship was about one hundred and fifty miles from the island. A prescription was sent by wireless, and later messages told of improvement in the patient's condition.

The Henry Harper Benedict Hospital, of Iliou, N. Y., was formally opened on Saturday, June 19th. Mr. Harper gave \$40,000 for founding the institution, and \$5,000 towards its maintenance. Aside from that the future support of the hospital will be in the hands of the people of Iliou. At the request of Mr. Benedict, the name of the hospital will be changed to the Iliou Hospital.

Officers of Letchworth Village.—Governor Hughes has appointed the following as members of the board of managers of this new State charitable institution: Mr. Franklin B. Kirkbride, Dr. L. Pierce Clark, Miss Marion R. Taber, Mr. Thomas J. Colton, Mr. Leopold Sondheim, of New York; Mr. Frank A. Vanderlip, of Scarborough; and Miss Cassity E. Mason, of Tarrytown.

Medical Destitution in India.—A dispensary was opened a few months ago by Dr. Lester H. Beals, a missionary of the American Board in Wai, a city about a hundred miles south of Bombay. Without any advertising ninety patients came the first day, and since then the daily attendance often exceeds two hundred. A considerable number of patients need operations, especially for the removal of cataracts, and more careful and prolonged treatment than is possible at a dispensary. Dr. Beals writes: "The medical destitution far exceeds anything that I supposed this part of India could furnish."

The St. Margaret's Memorial Hospital, Pittsburgh, which was completed and fully equipped for service ten years ago, but unused during that time on account of lack of funds for the maintenance of the building, is to be opened soon. Bids are now being secured for a general overhauling of the equipment of the hospital, and as soon as this is completed, it will be opened. It has accommodations for one hundred patients.

The International Hahnemannian Association of Homœopathic Physicians elected the following officers at the annual meeting of the association held in Pittsburgh, Pa., recently: President, Dr. S. H. Stanton, of New York; vice president, Dr. E. A. Taylor, of Chicago; treasurer, Dr. P. A. Kirchbaum, of Montclair, N. J.; and secretary, Dr. J. B. S. King, of Chicago. The convention will meet next year in Kansas City.

The Maine Medical Association, which met in annual session in Portland, on June 16th and 17th, elected the following officers for the ensuing year: President, Dr. Galen Woodcock, of Bangor; vice presidents, Dr. Stanley P. Warren, of Portland, and Dr. S. E. Webber, of Calais; secretary, Dr. W. Bean Moulton, of Portland; treasurer, Dr. E. W. Gehring, of Portland; delegate to the American Medical Association, Dr. Alfred D. Sawyer, of Fort Fairfield.

The Medical Alumni of the University of Pennsylvania held its annual outing at Glenloch Park, N. J., on Friday, June 25th. Dr. M. Howard Fussell, formerly the chief of the outpatient department of the University Hospital, was presented with a loving cup by the men who had formerly served under him. Dr. Fussell is rightly held in high esteem by all of his assistants as well as by all of the students who have been under his instruction during the past twenty years.

The Alumni Association of Harvard Medical School gave a dinner and smoker at Atlantic City during the meeting of the American Medical Association. Dr. J. B. Blake, of Boston, was toastmaster, and among the speakers were: Dr. Henry A. Christian, dean of the medical school; Dr. Silas D. Presbrey, president of the Massachusetts Medical Society; Dr. George E. Brewer, of New York; Dr. John M. T. Phinney, of Baltimore; Dr. Joseph A. Capps, of Chicago, and Dr. P. K. Brown, of San Francisco.

The Northwestern Medical Society, of Philadelphia, met on Monday evening, June 14th. The programme included the following papers: Cuguières Serum in the Treatment of Bone Tuberculosis, by Dr. C. H. Muschlitz; Importance of Early Diagnosis in Bone Tuberculosis, by Dr. A. J. Davidson; The Use of Tuberculin in Ophthalmic Practice, by Dr. L. C. Peter. Among those who took part in the discussion of these papers were Dr. H. Hudson, and Dr. William Campbell Posey, and Dr. Charles A. Oliver.

An Amendment to the Interstate Quarantine Regulations has been made by the addition of the following paragraph to article 3, general regulations: "Paragraph 8: Lepers may be accepted for transportation under proper supervision when *en route* to a seaport for deportation; also for transportation to a designated place for care and treatment, with the necessary consent of the proper health authorities, provided proper sanitary precautions are enforced with regard to the leper *en route* to destination."

A Floating Tuberculosis Sanatorium in Brooklyn.—Miss Mary Harriman, eldest daughter of Mr. E. H. Harriman, has obtained an old Erie ferryboat and presented it to the Brooklyn Committee on the Prevention of Tuberculosis to be used as a floating day camp for tuberculosis patients. This ferryboat is now undergoing repairs, and will go into commission as soon as it is in good shape. It will accommodate more than a hundred patients. The money collected by the Red Cross Committee by the sale of the Christmas stamps will be used in carrying on the work.

A Tuberculosis Sanatorium to be Established in Brookhaven, N. Y.—Dr. Eugene H. Porter, State Commissioner of Health, has approved the application of the committee on tuberculosis of the Brooklyn Central Labor Union for permission to establish a sanatorium and camp for the treatment of tuberculosis in Brookhaven, Suffolk County. Objection was made by the property owners. This is the first application passed upon since the enactment of the new law, which provides that the State instead of the local authorities shall pass upon these applications. The local authorities last year refused to permit the establish-

Three New Buildings for the Rochester, N. Y., State Hospital.—Plans have been filed for three new buildings for the Rochester State Hospital, to be erected at a cost of \$20,000. One of the new structures will be a mortuary building, one will be a dispensary, and the third building will consist of sun parlors.

A Pasteur Institute for Wisconsin.—The Board of Health and Vital Statistics of the State of Wisconsin has decided to establish a Pasteur Institute at Madison for the prevention and treatment of rabies. It is reported that the institute will have at its head Dr. M. P. Ravenel, director of the Wisconsin Hygienic Laboratory at Madison.

A Sanitary Inspection of Summer Resorts has been begun by the Department of Health of the State of New York. This inspection is undertaken with the view of eliminating the danger of typhoid fever. Statistics show that many tourists on returning to their homes after the summer vacation develop typhoid fever, due to the unsanitary conditions existing in the summer resorts visited. It is hoped that through a careful inspection by the State authorities these sources of infection may be eliminated.

Defective Teeth in New York School Children.—Out of five hundred children between the ages of fourteen and sixteen years who applied to the city authorities of New York for permits to work in factories, only fourteen were found to have sound teeth, and even these had need of attention from a dentist. The four hundred and eighty-six remaining children had two thousand eight hundred and eight unsound teeth or nearly six to each child, and only twenty-five of the entire number had had any kind of dental treatment, except extraction.

American Teachers for a Japanese University.—Letters received in this city by friends of Dr. Yaka Gawa, of the class of 1900 of the College of Physicians and Surgeons, give intimation that representatives will shortly be sent to the United States to invite several distinguished American physicians and surgeons to join the teaching staff of the University of Tokio. Nearly all the students of that institution understand English, and the university purposes securing the services of some of the most competent and eminent teachers from the United States in certain special fields, if this can be accomplished.

Infectious Diseases in New York:

From the report of the Bureau of Records of the Department of Health for the following statement of communicable diseases and deaths in New York City, June 19 and 26, 1909.

	June 19	June 26
Scarlet fever	1	1
Diphtheria	1	1
Whooping cough	1	1
Measles	1	1
Smallpox	1	1
Typhoid fever	1	1
Cholera	1	1
Cerebrospinal meningitis	3	5
Deaths	8	6

The McCosh Memorial.—A yawl, forty-five feet on the water line and formerly known as the *Idelon* of the New York Yacht Club, has been purchased from Mr. W. H. Parsons, fitted with auxiliary engines, and provided with special equipment suited for the service of the Labrador Medical Mission, to which it has been presented as a memorial to the late Dr. Andrew J. McCosh, the distinguished surgeon. The yawl has been christened the *Andrew J. McCosh*, and will be used by Dr. Wilfred G. Grenfell, superintendent of the Labrador Medical Mission, whose lectures attracted much popular attention last spring. The little vessel sailed for Labrador on July 1st, with a party of Princeton graduates and undergraduates in charge.

Hospital Benefits.—The receipts from the fair in aid of the Rockaway Beach Hospital, which was held recently, amounted to nearly \$4,000.

The gross receipts from the carnival and circus, held in Flushing, N. Y., on June 17th, 18th, and 19th, amounted to \$1,340 to be given to the Flushing Hospital.

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Vital Statistics of New York.—The number of deaths reported to the Department of Health of the City of New York during the week ending June 19, 1909, was 1,234, in an estimated population of 4,564,792, corresponding to an annual death rate of 14.10 in a thousand population. The death rate in each of the five boroughs for the week was as follows: Manhattan, 14.89; the Bronx, 17.09; Brooklyn, 12.37; Queens, 12.14; Richmond, 13.38. The total infant mortality was 386; 223 under one year of age, 96 between one and two years of age, and 67 between two and five years of age. Of the total number of deaths 145 were from pulmonary tuberculosis, 92 from bronchopneumonia, 49 from pneumonia, 110 from diarrheal diseases, 96 from heart diseases, 65 from cancer, 115 from Bright's disease, and 78 from violence, of which 14 were suicides. There were 120 still births.

The Mortality of Chicago.—During the week ending June 19, 1909, there were reported to the Department of Health 529 deaths from all causes, in an estimated population of 2,224,490, corresponding to an annual death rate of 12.40 in a thousand population. The death rate for the corresponding week in 1908 was 10.95. The total infant mortality for the week was 131; 90 under one year of age, and 41 between one and five years of age. The principal causes of death were: Diphtheria, 8 deaths; scarlet fever, 3 deaths; measles, 6 deaths; whooping cough, 3 deaths; influenza, 1 death; typhoid fever, 2 deaths; diarrheal diseases, 35 deaths; pneumonia, 66 deaths; pulmonary tuberculosis, 78 deaths; other forms of tuberculosis, 11 deaths; cancer, 21 deaths; nervous diseases, 16 deaths; heart diseases, 37 deaths; apoplexy, 7 deaths; Bright's disease, 49 deaths; violence, 60 deaths, of which 16 were suicides.

Charitable Bequests.—By the will of W. J. McAllister, the Presbyterian Hospital in Philadelphia receives \$5,200 for the establishment of a free bed to be known as the William J. McAllister free bed, contingent upon the death of a sister. The Orange Home at Hatboro, Pa., receives \$10,000 outright and \$5,000 contingent upon the death of a cousin. The Presbyterian Hospital in Philadelphia receives \$3,000 outright and the Presbyterian Orphanage in Philadelphia receives \$1,000.

By the will of Harry S. Henry, who died recently in Philadelphia, the entire estate, amounting to about \$1,500,000, will, upon the death of his widow and two of his sisters, revert to five local hospitals for the establishment of beds for the treatment of white children.

The Health of Philadelphia.—During the week ending June 19, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 23 cases, 5 deaths; scarlet fever, 38 cases, 1 death; chicken pox, 43 cases, 0 deaths; diphtheria, 89 cases, 8 deaths; measles, 150 cases, 4 deaths; whooping cough, 37 cases, 0 deaths; tuberculosis of the lungs, 110 cases, 45 deaths; pneumonia, 29 cases, 22 deaths; erysipelas, 6 cases, 1 death; mumps, 22 cases, 0 deaths; trachoma, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis other than that of the lungs, 11 deaths; diarrhea and enteritis, under two years of age, 19 deaths; puerperal fever, 1 death. The total deaths numbered 392 in an estimated population of 1,505,569, corresponding to an annual death rate of 13.02 in a thousand population. The total infant mortality was 91; 73 under one year of age, and 18 between one and two years of age. There were 41 still births; 25 males, and 16 females. The total precipitation was 0.02 inch.

The Health of Pittsburgh.—During the week ending June 12, 1909, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 7 cases, 0 deaths; typhoid fever, 16 cases, 3 deaths; scarlet fever, 11 cases, 0 deaths; diphtheria, 3 cases, 0 deaths; measles, 15 cases, 1 death; whooping cough, 36 cases, 0 deaths; pulmonary tuberculosis, 46 cases, 10 deaths. The total deaths for the week numbered 146, in an estimated population of 572,000, corresponding to an annual death rate of 13.27 in a thousand population. During the week ending June 19, 1909, the following cases of transmissible diseases were reported: Chickenpox, 17 cases, 0 deaths; typhoid fever, 11 cases, 1 death; scarlet fever, 17 cases, 0 deaths; diphtheria, 7 cases, 1 death; measles, 10 cases, 0 deaths; whooping cough, 36 cases, 2 deaths; pulmonary tuberculosis, 43 cases, 5 deaths. The total deaths for the week numbered 129, corresponding to an annual death rate of 11.72 in a thousand population.

Personal.—Dr. J. C. Flippin has been appointed associate professor of clinical medicine in the medical department of the University of Virginia, and Dr. Harvey E. Jordan has been appointed associate professor of anatomy in the same institution.

Dr. Walter Benschel, sanitary superintendent of the New York Department of Health, has been nominated as a first lieutenant in the medical reserve corps of the U. S. Army.

Dr. Thomas C. Phillips, of Milwaukee, has been appointed dean of the medical department of Carroll College, Waukesha, Wis., which was recently merged with the Wisconsin College of Physicians and Surgeons.

Dr. C. V. Chapin, superintendent of public health, Providence, R. I., had conferred upon him, by Brown University, the honorary degree of doctor of science.

Dr. H. D. Reed, assistant professor of neurology and vertebrate zoology in Cornell University, will sail for Europe on July 22d, where he will spend about a year and a half in study.

The Medical Society of New Jersey held its one hundred and forty-third annual meeting at Cape May on June 23d, 24th, and 25th. The meeting was very successful in every respect. The attendance was large, and the papers presented were of more than ordinary interest. Dr. Thomas N. Gray, of East Orange, delivered the oration in medicine, and Dr. George E. Brewer, of New York, delivered the oration in surgery. The following officers were elected for the ensuing year: President, Dr. B. A. Waddington, of Salem; first vice president, Dr. Thomas H. MacKenzie, of Trenton; second vice president, Dr. Daniel Stroch, of Camden; third vice president, Dr. Norton L. Wilson, of Elizabeth; corresponding secretary, Dr. Harry A. Stout, of Weonah; recording secretary, Dr. William J. Chandler, of South Orange; treasurer, Dr. Archibald Mercer, of Newark; councillors, Dr. Thomas W. Harvey, of Orange; Dr. Edward F. Denner, of Paterson; Dr. William A. Clark, of Trenton; Dr. William H. Izzard, of Camden; and Dr. James Hunter, of Westville; delegates to the American Medical Association, Dr. C. R. P. Fisher, of Bound Brook; Dr. Alexander Marcy, Jr., of Riverton; and Dr. Luther M. Halsey, of Williamstown.

French Appreciation of American Hospitals.—Dr. Samuel Pozzi, the celebrated French surgeon, recently came to New York to attend the McDowell Centennial celebration of the American Gynecological Society, and on June 23d he delivered a lecture before the *Société de l'Internat des Hôpitaux de Paris* embracing the impressions, which he gathered during this visit, of things medical in the United States. He said that hospital arrangements in the United States had been carried to a degree of perfection unknown in the French hospitals, a condition due, he thought, in large part to the fact that the hospitals were under private administration, and thus able to act more promptly in adopting new ideas than is possible with institutions under Government authority which moves with ponderous slowness. He was particularly enthusiastic in his praise of the operating rooms, spoke highly of the American nurses, of the audacity of the American surgeons, and then gave the highest praise to the wonderful work done in surgery by Dr. W. J. Mayo and Dr. C. H. Mayo, of Rochester, Minnesota, declaring that their hospital was in every respect the best of its kind in the world.

The Harvey Society Lectures.—The attention of the medical profession is directed to the lectures of the Harvey Society, which are collected in volumes and published by the society at a price which is barely sufficient to defray the cost of publication. Two volumes have already appeared, a third will soon be issued, and a fourth will shortly go to press. These lectures cover a wide scope of topics on subjects relating to the medical and allied biological sciences, and are authoritative in character, the entire list of contributors being made up of the names of men of worldwide reputation. Volume I, the series for 1905-6, contains thirteen lectures; Volume II, the series for 1906-7, contains ten lectures; Volume III, the series for 1907-8, will contain ten lectures; and Volume IV, the series for 1908-9, will contain nine lectures. The price is \$2.00 a volume. Subscriptions to volumes already published, or in press, may be sent to the J. B. Lippincott Company, Washington Square, Philadelphia, who will forward the volumes postpaid. Permanent subscriptions for future volumes may be sent to the secretary of the Harvey Society, Dr. Francis Carter Wood, 437 West Fifth street, New York.

Surgery in West Africa.—Two young physicians, Dr. and Mrs. William Cammack, who are at work in Chisamba, West Africa, write that they performed their first operation for hernia under most adverse conditions. The patient was placed on a school room table, the sheets, towels, and sponges were sterilized by boiling in a galvanized tub, which was the only thing available as a sterilizer, and had to be used wet, as they could not be dried without danger of being scalded again. The native helper, who spoke a little English, stood by during the performance and helped carry the patient, still unconscious, to his room and bed. In describing the scene afterwards to a group of astonished listeners he said, "I saw—I saw—I saw him die. When we carried him home he was still dead and I never thought he would live again." Dr. Cammack said that people came from far and near to look at the man, who was a walking miracle to them.

The Medical Association of the Pacific Northwest, which includes the medical associations of British Columbia, Idaho, Oregon, and Washington, will hold its first meeting in Seattle on Tuesday, Wednesday, Thursday, and Friday; July 20th, 21st, 22d, and 23d. The occasion is the tenth annual meeting of the British Columbia Medical Association, the seventeenth of the Idaho State Medical Association, the twentieth of the Washington State Medical Association, and the thirty-fifth of the Oregon State Medical Association. The programme committee, which is composed of the president and secretary of each of the associations, has prepared an excellent programme of scientific papers, and ample arrangements have also been made for the entertainment of the visiting physicians and their friends. July 21st has been set aside as Medical Day at the Exposition. The work of the convention has been divided into four sections: Medicine, Surgery, Ophthalmology and Otolaryngology, and Urology. In addition to the meetings of these sections, there will be general sessions devoted to tuberculosis and public health and sanitation. The first general session will be held on Tuesday, at 2:00 p. m., with Dr. C. A. Smith, of Seattle, in the chair. The opening address will be delivered by the Hon. M. E. Hay, Governor of the State of Washington, and the address of welcome on behalf of the city will be delivered by the Hon. John F. Miller, Mayor of Seattle. Responses will be made by Dr. S. E. Joseph, of Portland, Ore.; Dr. R. Eden Walker, of New Westminster, B. C.; Dr. R. L. McCalla, of Idaho, and Dr. Wilson Johnston, of Washington. Addresses will also be delivered by Dr. James B. Herrick, of Chicago, Dr. Roswell Park, of Buffalo, Judge A. W. Frater, of Seattle, and the presidents of the four associations which make up the new organization.

The Oklahoma Interdict.—The following resolutions were proposed by Dr. S. A. Knopf and adopted by the Section on Hygiene and Sanitary Science and confirmed by the House of Delegates of the American Medical Association at the Meeting in Atlantic City, June 10, 1905:

Whereas, The Section on Hygiene and Sanitary Science of the American Medical Association has learned with profound regret that the Medical Board of Examiners of the State of Oklahoma have decided to no longer grant licenses to practise to physicians afflicted with tuberculosis; and

Whereas, It has been sufficiently demonstrated that the clean, conscientious, and trained consumptive is not a menace to his fellowmen; and

Whereas, It is well known that the scientific knowledge of tuberculosis has been vastly increased by physicians of the past and present who have been afflicted with tuberculosis; and

Whereas, The experience in this country and abroad has furthermore demonstrated that tuberculous physicians, more than any other class, have advanced the best methods of cure of tuberculosis and have been most active in the tuberculosis propaganda, be it

Resolved, That the Section on Hygiene and Sanitary Science of the American Medical Association deeply deplores the action of the Oklahoma State Board of Medical Examiners whereby tuberculous physicians desiring to practise in Oklahoma are deprived of this privilege because of their illness. Be it further

Resolved, That this Section expresses the profound wish that the State Board of Medical Examiners of Oklahoma will withdraw this restriction and again open its hospital State to all honorable physicians well qualified to practise, though they may be afflicted with tuberculosis.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 17, 1909.

1. The Conquest of the Tropics for the White Race.
By W. C. GORGAS.
2. The Diagnosis and Prognosis of Gallstone Disease from the Point of View of the Surgeon.
By MAURICE H. RICHARDSON.
3. The Placing out of High Grade Imbecile Girls.
By WILLIAM N. BULLARD.
4. Symptom Complex of a Series of Exanthematous Diseases. Or is there a New Contagious Exanthem?
By J. WILLIAM WATSON.

2. **Diagnosis and Prognosis of Gallstone Disease.**—Richardson remarks that the diagnosis in most cases of gallstone disease must be based upon some of the manifestations of pain. Indeed, in all cases which do not present physical signs of some unmistakable kind, the diagnosis rests upon pain alone. But what besides gallstones causes pain in the right upper quadrant? (1) Infection of the gallbladder or the ducts without gallstones (gallstones may have been expelled). (2) Organic and functional diseases of the stomach and duodenum. (3) Certain diseases of the right kidney. (4) Appendicitis, when the appendix is high up. (5) Certain other very rare conditions. The weight of evidence in favor of gallstones must come from a history of pain. To reach the conclusion, correct in the vast majority of cases, that a certain epigastric discomfort is caused by gallstones, one must have deeply impressed upon his mind certain facts which a multitude of operations have proved dependent upon certain complaints. The first fact is that, with certain subjective symptoms, gallstones are found. The second is that the pathological condition found is sufficient to cause those symptoms. The third is that after removal of the stones causing distinct pathological changes the complaints cease. The fourth is that the symptoms cease after the removal of gallstones which have caused no perceptible anatomical changes. The fifth is that the symptoms do not always cease after removal of gallstones, whether organic lesions are found or not. The sixth is that symptoms often cease after drainage of the gallbladder when no gallstones have been found; and sometimes after cholecystostomy when no changes in the bile or biliary tract have been noted. There are four classes of gallbladder cases: (1) The gallbladder stone offending slightly or not at all; (2) the successfully expelled stone; (3) the impacted stone; (4) the infected tract. In many instances there will be a combination of these classes. It is very unusual to have any group except the first alone, for the expelled stone or the impacted one, with or without infection, is usually the pioneer of many which are to follow. In the diagnosis of gallstone lesions one must use the method of exclusion, and carry that method far.

3. **High Grade Imbecile Girls.**—Bullard observes that high grade imbecile girls, instead of being placed in families where they breed disease and crime, should, as soon as their condition is recognized, be placed in an institution to take care of them. By doing this we shall be able to save the community from danger. While it is not necessary that every high grade imbecile girl should be

placed in an institution, but only those who have no suitable homes where they can be safely guarded, yet even where the home is good, much evil and sorrow may be avoided if such girls are placed under care early, before any serious mischief has occurred. Although the two reasons which far outweigh all others against the placing out of these girls are, the danger that they spread crime and disease through the community; the risk of their own degradation, disease, and sin; the deterioration and destruction of a human soul. But there are also other secondary reasons which render this placing out unwise. These are: The waste of money to the state. It is better financially for the state to care for one woman during the whole of her maturity rather than to care for her at intervals, and to be obliged to support one or more illegitimate children, not to mention the cost of such disease as she may spread. It is waste of time and of energy for the societies, public or private, to attempt to care for this class. While some examples may under special circumstances be guarded for a time, the large majority fall sooner or later and usually fall far. We have a right to ask that the time and energy wasted in such unsatisfactory and unprofitable work be better spent.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 26, 1909.

1. Educational Ideals in Medicine.
By W. W. KEEN.
2. Ophthalmological Qualifications which Should Be Demanded of the General Practitioner and of the Specialist Respectively.
By ALVIN A. HUBBELL.
3. A Pragmatic View of Christian Science.
By EMIL C. WILM.
4. Whooping Cough from the Point of View of Public Health.
By CHARLES R. GRANDY.
5. Some Thoughts Concerning Sleep and Digestion.
By GEORGE M. NILES.
6. The Responsibility of the Physician in Cases which Are a Menace to Public Safety.
By WILLIAM RUSH DUNTON.

3. **A Pragmatic View of Christian Science.**—Wilm says that considered from the point of view of orthodox science or of consistent thought the value of Christian science is *nil*; this much, at least, is plain. But if it makes as little sense to ask whether a theory is true as to ask whether it is blue (a piece of pragmatic facetiousness) and if the truth of a view is measured by the measure of its success in life and practice, then Christian science is, on its metaphysical side, a highly respectable candidate for philosophical honors. It is one of those views, many more of which could be named, whose logical value is neither negligible or nonexistent, but which, nevertheless, seem to serve an important practical purpose, and which, therefore, appear to be justified in cases where the practical demand is more urgent than the theoretical one of making life a rational and orderly whole. Pragmatically considered, Christian science frequently appears to be right; scientifically it is wrong from beginning to end. And this may be used as an argument for Christian science or against pragmatism as suits the taste.

4. **Whooping Cough.**—Grandy observes that the first actual step to be taken in whooping cough with the individual cases is to see that they are reported as promptly as possible to the health department. The house should be placarded, as much to make the parents feel that the case is serious as

to warn friends and neighbors of the presence of the disease. A medical inspector should then go to the house, give the people instructions as to the seriousness of the disease with young children, as to how to prevent its spread, the probable time the contagion will last. He should also have printed instructions to supplement what he has said. The instructions as to quarantine will, however, have to be modified to suit the cases and the circumstances of the family. Thus children that live in houses with yards and porches, ample enough to provide the very necessary fresh air, should not be allowed to leave the premises. Less fortunate children might be allowed in the streets and parks, if they wore conspicuous ribbons bearing the word "whooping cough," but this privilege should be withdrawn if they were found to be purposely mixing with other children. A still better place for these children is a special hospital outside of town, where they could get plenty of fresh air and good food, for this is the only sure way of saving the babies of the tenements from infection. All large cities should have these whooping cough hospitals. Not only should a medical inspector have the right to send to this hospital all patients that he does not think can be cared for at home, but also any patient who breaks the quarantine rules established by him should be sent to the hospital, no matter what the financial circumstances of the family. Not only should the whooping cough patient be withdrawn from school, as seems to be the universal custom, but the other children in the family should be excluded for two weeks after being separated from the patient, and this exclusion should be continued, if they have even the slightest coughs. Any pupil who has been exposed to contagion and who has a cough should be immediately sent home by the teacher, who should also notify the health department. In this way one of the greatest sources of infection, the patients who have not yet "whooped," will be nearly eliminated from the schools. It is frequently easier and better for people with the necessary means to send their young children away from the house, which contains a case of whooping cough, but these children must be watched and kept away from other children as soon as any suspicious cough appears. The placard and the quarantine should not be removed from the house, if we follow the rule laid down by Forchheimer, "unless six weeks from the onset have elapsed, until the true whoop shall have disappeared entirely, and until expectoration shall have practically ceased." The room occupied by the patient should then be disinfected as much for educational purposes and for justifying the placarding and quarantine as for the removal of contagion left in the room.

MEDICAL RECORD

June 26, 1909.

1. The Clinical Diagnosis of Tuberculosis of the Tonsils, By LEE M. HURD and JONATHAN WOODSON.
2. On the Use of Atropine Sulphate and Atropine Methyl Bromide in Diabetes Mellitus. A Preliminary Communication, By J. RUDISCH.
3. Compensatory Albuminuria; a Contribution to the Study of Clinical Albuminurias, By HEINRICH STERN.
4. The Treatment of Potts' Disease at the Sea Breeze Hospital, By LEONARD M. FERNANDEZ.

5. The Combined Operation for the Radical Cure of Inguinal Hernia and Appendicitis, By ANTHONY H. HARRIGAN.
6. Dermatoxia Noxialis Infection; Report of a Case Contracted in Southern Mexico, By JAMES D. MANGET.
7. Some Practical Points Concerning the Treatment of Fracture of the Lower End of the Radius, By ERIC CARL BECK.
8. Contribution to the Study of Thiosinamine in Otolaryngology, By FRANCISCO M. FERNANDEZ.

1. Tuberculosis of the Tonsils.—Hurd says that the tonsil in which we find evidences of tuberculosis is usually pale, the crypts contain cheesy detritus, the edge of the anterior pillar may have a passive hyperemia, and the associated lymphatic gland is usually much enlarged and hard. From this early stage it may progress until any number of glands are involved. The question has been put: if the tuberculosis has reached the cervical lymphatics, why remove the tonsil? There are two very good reasons. First, such a tonsil is allowing microorganisms to take the same route as the tubercle bacillus did, and this makes it still harder for the lymphatics to overcome the tuberculosis, which they have a fair chance of doing with the tonsil out. This is easily shown by the fact that after removal of the tonsil the lymph glands begin to subside, and if only enlarged from septic absorption will entirely disappear; and in tuberculous adenitis there will be a rapid diminution in the size of the glands to a certain point, which was the increased load placed upon the glands from draining a generally diseased tonsil. Also, when the tuberculous cervical glands are removed, the tonsil remaining is liable to reinfect the remaining glands. The most frequent site for enlargement of the cervical glands is at the angle of the jaw, and in recognizing the tonsil as the portal of infection its prompt removal will abort many cases and perhaps other more remote tuberculous lesions. Wright, in his report on the microscopical examination of such a case says: "This tonsil is a good illustration of the grounds I have for calling areas in tonsillar section suspicious of tubercle. In one of the three sections there are granular areas where the proliferation of the round cells are becoming granular and taking the stain badly; near by are some old fibrous areas. Another section shows this more marked, with the addition of epithelioid cells and the contiguity of the fibrous area. Still a third section shows all this plus two imperfect giant cells in these areas. I should therefore say that this appearance is strongly indicative but not yet, to me, entirely conclusive of the existence of typical tubercle. In this case, from the clinical history and the objective examination, there is little doubt but that the glands in the neck are tuberculous. Later, ten more slides were examined. In many of them there was the well marked identical area of tubercle granulum and epithelioid cells, and in one of these supplemental ten slides there was in this area a fairly well marked giant cell. Diagnosis: Tubercle of the tonsil."

2. On the Use of Atropine Sulphate and Atropine Methyl Bromide in Diabetes Mellitus.—Rudisch states that the action of atropine may be summed up under the following heads: (1) Reduction in the amount of sugar excreted; (2) Increase in carbohydrate tolerance. 1. It was uniformly ob-

served that glycosuria disappeared much more rapidly under this combined form of treatment than with the customary antidiabetic diet alone. It is a common experience that while a strict carbohydrate free diet will usually cause a marked diminution in sugar excretion, traces of sugar will still remain in the urine or appear from time to time. In these cases the use of atropine in sufficient dosage has invariably resulted in a complete suppression of the glycosuria. Interruption in the administration of the drug without change in diet has been followed in many cases by the reappearance of sugar in the urine, but this glycosuria could always be made to disappear again promptly by resuming the atropine. 2. The influence of atropine in increasing carbohydrate tolerance is manifested in two ways. An amount of carbohydrate sufficient to cause glycosuria in a patient whose urine has become free from sugar but who is not taking atropine, will be perfectly well tolerated as soon as the atropine is administered. After the prolonged administration of atropine the tolerance for carbohydrates increases much more rapidly than after a period of antidiabetic diet alone. The appearance of glycosuria in such cases is the signal to resume the atropine, and even without any reduction of the carbohydrates this frequently is sufficient to cause the urine to become again sugar free. He has administered the atropine in the form of the methyl bromide and the sulphate. The former has the advantage of being much less toxic, but its effects are not so prompt as those of the sulphate. Its cost, moreover, limits its use. As the initial dose of the methyl bromide he has given gr. 2/15 three times a day, to adults, gradually increasing this by gr. 1/15 until gr. 8/15 three times a day are being taken. In one case three grains were given daily over a short period with no other toxic effect than dryness of the throat. The initial dose of atropine sulphate should be gr. 1/150, three times a day, that may be gradually increased to gr. 1/20, three times a day. Children require a dosage proportionate to their age.

7. **Fracture of the Lower End of the Radius.**—Eric Carl Beck remarks that in these cases the patient should be placed on his back. It keeps him and his body quiet, and precludes the possibility of aerial gymnastics on the part of the surgeon. Let one assistant firmly hold the upper arm down upon the table, exerting counter extension at the same time. This is most easily done by placing the hand over the shoulder into the axilla, where the fist will act as an efficient lever. The other hand can be used to keep the arm upon the table. The second assistant should hold the thumb and fingers of the patient, having first rotated the forearm so that the palm points upward. This rotation serves two purposes. Firstly, it places the ulna and radius in their natural relations to one another, replacing the radius to the position of its greatest length, parallel to the ulna, and secondly it permits of easier manipulation during the procedure of replacement. The greatest tension should be exerted upon the thumb, as by its means the direction of the head of the radius is best regulated. The thumb should be held between the crooked first and second fingers, as it can be held more firmly and for a longer time.

the fingers toward the ulna. This maneuver projects the carpus and throws the head of the radius still further forward. Thus sufficient play between the fragments is provided so that there is no great difficulty in restoring the continuity of the bone. While the assistants continue to hold the arm firmly in the corrected position, a plaster of Paris bandage is applied. Starch bandages may also be used—they are not so heavy—but should be applied rather loosely as they have a tendency to shrink and cause extremely painful oedema. The application of cotton or gauze bandages upon the skin is not necessary, but simply facilitates the removal of the dressing later on. There is no danger of pressure gangrene or atrophy if the displacement has been corrected. The oedema is caused by the ragged edges of the bone, and as soon as the normal condition is restored the injuries to the soft tissues take care of themselves.

BRITISH MEDICAL JOURNAL

June 12, 1906.

1. The Modern Treatment of Fractures.
By JUST LUCAS-CHAMPIONNIÈRE.
2. The Prodromas of Migraine.
By Sir WILLIAM R. GOWERS.
3. The Diagnosis of Syphilitic Diseases of the Nervous System.
By F. W. MOTT.
4. Chronic Intestinal Stasis.
By ARBUTHNOT LANE.
5. Hypertrophic Osteoarthropathy of Hands without Visceral or Constitutional Disease.
By R. C. WORSLEY.
6. Biotripsis, or Life Wear: Trophic Changes in Old Age.
By G. LENTHAL CHEATLE.
7. Some Aspects of the Legal Responsibility of Medical Men.
By A. DOUGLAS COWBURN.
8. Notes on a Thirty Days' Fast.
By F. PENNY.

2. **Prodroma of Migraine.**—Sir William R. Gowers remarks that the time of life at which migraine begins varies much. Often the headaches are said to go back to the period of earliest memory; they may begin only when adult age is reached, or a prodroma is added to those which before occurred without one. They may commence at any later period, and often as late as fifty or after. At any adult age, the prodroma may occur alone, at least sometimes, the headache being or becoming slight and trifling. When a visual spectrum has often preceded the headache, it is sometimes called into separate existence without succeeding headache by any flickering light before the eyes, such as a reflection from rippling water. In middle or later life the occurrence of an unaccustomed premonition may give rise to much concern, especially if it involves the arm, lips, or speech. It may seem like a vascular lesion in the brain, especially if it occurs without succeeding headache, or if this is only slight. Even a more severe degree of pain in the opposite side of the brain may seem the effect of a presumed cerebral lesion, to the medical practitioner as well as to the patient, who is likely to consult his adviser in alarm on account of symptoms which are new in his experience. In young children sudden symptoms are sometimes seen, with headache, pyrexia, and general aspect of illness, often with vomiting. The symptoms cause a fear of acute meningitis, but after one or two days the rapidly pass away. At the other end of life the prodroma of migraine frequently occurs without, or with but slight headache, and sometimes with more brief headache than occurs during middle life. Occasionally the loss of

power seems to be the chief symptom, and in these cases the headache is generally so slight as not to attract special attention. With many patients an error in diagnosis readily occurs in a first attack of this character, although another one is less likely to be mistaken. The weakness may be considerable. Recovery may not always occur, even if the vasomotor hypothesis is correct. The arterial contraction prevents sufficient blood reaching the region of the brain to maintain its function. When the blood state favors rapid thrombosis this may occur in the vessel so as to preclude the return of the circulation, and enduring thrombosis, with all its consequences, may maintain the loss of function as permanent hemiplegia. Indeed, there is some danger of this in earlier life if any change in the blood promotes its coagulation. The benefit from nitroglycerin and strychnine, although often most conspicuous, is not invariable. Cases in which vasomotor disturbance is well marked externally sometimes derive no benefit. Why this should be the case it is not possible to say. Bromide taken regularly may then have more effect, or a small, long continued course of salicylate. For the relief of attacks which are developing, a dose of antipyrine has often a quick influence, or a combination of antipyrine and caffeine, or a similar preparation of antipyrine fused with salicylate of caffeine. Nitroglycerin may conveniently be given in the form of the one per cent. solution, liq. trinitrini, but the mixture containing it must be kept acid. It may, therefore, be usefully united with a digestive tonic. Dyspepsia is common in some of those who suffer from migraine, and an error in diet may give rise to an attack some time after the previous one.

4. Chronic Intestinal Stasis.—Lane remarks that the symptoms produced by this condition are due in part to the interference in the normal functioning and are expressed by pain, and in part to the absorption of poisonous material, and are evidenced as toxæmia. While toxic symptoms may exist without pain, pain has always associated with it definite evidence of autointoxication. Many of the objective evidences of autointoxication, such as pigmentation of the skin and bad smelling perspiration, are much influenced by the color of the hair. In light haired people a very advanced condition of poisoning may exist without the presence of these symptoms, while in dark haired people these evidences appear at an early period. Pain is due apparently to the distension of a portion of the bowel with faecal contents and their gaseous products or by the passage of faecal material through it. For instance, the distension of the cæcum is a frequent and distressing symptom. Pain about the hepatic and splenic flexures, both in front and behind, results from the obstruction which exists at those points and from the drag or strain upon the retaining bands by the loaded bowel in the erect posture of the trunk. Pain in the sigmoid segment may be due to the difficulty in forcing the contents through a fixed, straight tube of diminished calibre, length, and elasticity whose mucous membrane may be gorged, inflamed, or even ulcerated, or to the distension of a loop or loops placed at a mechanical disadvantage by irregular anchoring by adhesions. Pain also results from the distension of the stomach, and also

of the small bowel because of its delayed functioning. Pain in the fixed left ovary is frequently a distressing symptom, especially at the periods. The fixation of this irritated organ renders it very tender on pressure, especially if examined bimanually, since it cannot readily avoid the pressure of the fingers as does a mobile ovary. Apart from this, there are the mechanical symptoms which ensue from the progressive development of the cystic condition of the ovary, which is now found to be more frequently malignant in structure than was supposed. Degenerative cystic changes in the breast are very commonly present in a varying degree in certain cases of chronic intestinal stasis. This change is usually first observed in the upper and outer segment of the left breast, and later in the corresponding area of the right breast. In the young unmarried woman chronic mastitis which is accentuated at the periods is very common. It affects the same areas of the breasts as does the cystic change which appears later. The pain due to movable kidneys, gallstones, gastric and duodenal ulcers, pancreatitis, renal conditions due to the narrowing of the right ureter by the band retaining the appendix or by suppurative about the appendix, uterine versions and flexions, and to many other conditions, are fairly characteristic. Autointoxication reduces the resisting power of the individual to the entry of organisms of various sorts, and facilitates their obtaining a foothold in some of the tissues of the body.

THE LANCET

June 12, 1909.

1. The Modern Treatment of Fractures.
By JUST LUCAS-CHAMPIONNIÈRE.
 2. Diagnosis of Syphilitic Diseases of the Nervous System.
By F. W. MOIT.
 3. Operative Treatment of Fractures.
By W. ARBUTHNOT LANE.
 4. A Preliminary Note on the Vaccine Therapy of Enteric Fever.
By D. SEMPLE.
 5. A Case of Facial Palsy Treated by Faciopharyngeal Anastomosis in which an Anastomosis was also made between the Spinal Accessory and the Distal Segment of the Divided Hypoglossal Nerve in order to Prevent Permanent Lingual Paralysis and Atrophy.
By CHARLES A. BALLANCE.
 6. The Surgical Treatment of Colitis.
By GEORGE HEATON.
 7. A Case of Fatal Hæmorrhage into the Pons Varolii in a Young Infant.
By SIDNEY PHILLIPS.
 8. Internal Hernia; Extensive Resection of Gangrenous Ileum; Recovery.
By W. SAMPSON HANDLEY.
 9. A Case of Bacillary Infection of the Urinary Tract Treated by the Corresponding Serum and Vaccine.
By H. O. BUTLER.
 10. An Instructive Fatal Case of Appendicitis with Advocacy of Early Operation.
By J. S. BOWEN and EDWARD M. CARMICHAEL.
- 4. A Preliminary Note on the Vaccine Therapy of Enteric Fever.**—Semple observes that the administration of bacterial vaccines in cases of enteric fever is a practical method of increasing the bacteriotropic substances in the blood, as evidenced by an increase in the opsonic index of those treated by this method. When appropriate doses are given the method is devoid of all risks, is easily carried out, produces no apparent disturbance in the patient's condition, and does not interfere with any other treatment the physician may deem necessary. It would not be possible to generalize from the few cases which he cites as to whether vaccine treat-

ment has a marked effect in cutting short the fever period. In six of the nine cases treated well marked improvement set in after the inoculations. This was especially the case in autogenous vaccines. In the remaining three there was an amelioration of the clinical symptoms.

5. A Case of Facial Palsy Treated by Facio-hypoglossal Anastomosis.—Ballance reports such a case, and says that the hypoglossal nerve supplies muscles the cortical centres of which are nearer to the face centres than is the case with the cortical centres of the muscles of the shoulder. The cortical centres for the muscles of the face and tongue overlap one another. It might therefore be anticipated that the prospects of dissociated facial movement through the centre for the movements of the tongue would be greater than when working through the centre for the movements of the shoulder. Moreover, it may be recalled that the movements of the tongue are closely associated with those of the lips, so much so that in health the orbicularis oris and the transverse fibres of the tongue contract together. Probably the facial nerve derives its lip fibres from the hypoglossal nucleus. There is certainly a close relation not only between the cortical face centre and tongue centre, but also between the facial and hypoglossal nuclei in the bulb. The hypoglossal nerve is therefore to be preferred for this anastomosis to the spinal accessory nerve. Experience has shown that the atrophy of one half of the tongue leads to no material inconvenience, but that loss of power in the sternomastoid and trapezius muscles may be associated with deformity, discomfort, inconvenience, and even worse results. These are additional reasons why the hypoglossal should be preferred for the anastomosis. It is of the first importance to obtain in cases of facial palsy as the result of nerve anastomosis movements of the face dissociated from those of the shoulder or the tongue, as the case may be. In this way only can equal and symmetrical emotional movements, as in talking and laughing, be restored. In the case he reports the movements due to emotional stimuli are symmetrical and perfect. He believes this result can be obtained only by devoting the whole nerve, either spinal accessory or hypoglossal, to the cure of the facial palsy. Partial anastomosis is not the right course to adopt. End to side anastomosis he condemns, as also end to end anastomosis with use of part only of the hypoglossal or of the spinal accessory nerve. The attempt to obtain recovery from the lingual atrophy by uniting the distal end of the divided hypoglossal to the lingual nerve on the hypoglossus muscle has in his hands failed. This case shows how a good result may be obtained without sacrificing half of the tongue or either of the cervical muscles.

6. The Surgical Treatment of Colitis.—Heaton says that of the causes of acute ulcerative colitis we know but little. Some authorities, notably Rolleston, include all such cases under the term dysentery, and maintain that bacteriological examination shows them to be identical. But Osler, Allchin, and others hold that they are separate and distinct diseases. Bright's disease would certainly seem to be a predisposing factor and the disease seems equally common in men and women. There is profound

diarrhœa, and blood is almost always present in the motions, mixed with a most offensive mucus and pus. There are usually marked abdominal tenderness, rapid and progressive emaciation and weakness, the patient in some cases lapsing into a typhoid condition. The temperature is irregular, and there may be profuse perspirations. Distinctive diagnosis has to be made from abdominal tuberculosis, typhoid fever, and malignant ulceration of the lower bowel with spurious diarrhœa, and is in some cases a matter of extreme difficulty. A sigmoidoscopic examination should be made whenever practicable in these cases, and will often materially help in arriving at a right conclusion. The prognosis seems from the reported cases to be a very bad one; intestinal perforation is frequently a cause of death. Murrell reported five cases treated on purely medical lines with one recovery and four deaths. Active surgical treatment is urgently called for in such cases. The large bowel must be kept empty and at rest, and yet to starve such patients is to kill them, while rectal feeding is out of the question. An artificial opening is made in the cæcum, or the appendix is fixed to the abdominal wall and opened. The operation can be done in a very few minutes and with but little or no shock. Intestinal contents are in this way diverted from the ulcerated colon, which is at the same time put at rest and under the best conditions for repair. Through the opening thus made the inflamed and ulcerated bowel can be daily irrigated. H. C. Curl has reported eleven such cases, with eight recoveries and three deaths. One of the deaths occurred in a patient who was already moribund when operated upon. Later, when the patient is convalescent and the ulcerative processes have come to an end, the cæcotomy or appendicostomy opening is easily closed. In chronic ulcerative colitis the urgency of the symptoms is not so great and milder medical measures may be given a prolonged trial. But when the diarrhœa still continues with the passage of blood and mucus, and despite treatment the patient is progressively losing weight and passing, as they frequently do, into a neurasthenic condition, an appendicostomy with prolonged daily irrigation of the colon will in many cases effect a cure. Many such successful cases have been reported.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 10, 1900.

1. Chromocystoscopy, By EUGEN JOSEPH.
2. A Clinically Interesting Case of Foreign Body Granuloma, By SCHOFFER.
3. Wassermann's Reaction and the Influence exerted upon it by Treatment, By FRITZ HÖHNE.
4. Demonstration of Syphilis by Color Reaction, By SYMANSKI, HIRSCHBRUCH, and GARDIEWSKI.
5. Methods Used to Prevent Conception, By F. LEHMANN.
6. Diazoreaction in Yellow Fever, By CIRIO VARGAS and HARALD SEIDELIN.
7. Antiphones, By SPRENGER.
8. Contributions to the Pathology of the Secretion of the Gastric Mucus (Concluded), By L. VON ALDOR.

1. Chromocystoscopy.—Joseph reports several cases in which the diagnosis of a diseased kidney on one side with a functioning kidney on the other was made or confirmed by this method. A solution of indigo carmine is injected into the gluteal muscles. A few minutes later the urine excreted

through the ureter is strongly stained, and by means of the cystoscope it can be seen escaping from the ureter leading from the functioning kidney, while none escapes from the other ureter. This observation can be made in cases in which catheterization of the ureter would be difficult.

2. **Foreign Body Granuloma.**—Schopper describes a case of granuloma of the eyebrow which greatly resembled a chancre. Wassermann's and other tests for syphilis proved negative, and the tumor was finally found to be due to the presence of a bit of straw under the skin.

3. **Wassermann's Reaction.**—Höhne analyzes a large number of cases in which Wassermann's reaction was positive and shows the results of treatment with various preparations of mercury. The percentage of cases in which the reaction became negative after treatment is shown to be much greater after the use of certain preparations than after the use of others. Thus the influence of calomel seemed to be the greatest, closely followed by the salicylate and the soluble salts.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

May 11, 1909.

1. Obstetric Operations with Abnormal Smallness and Incomplete Dilatation of the Soft Parts, By PFANNENSTIEL.
2. X Ray Treatment in Gynaecology, By ALBERS-SCHOENBERG.
3. The Importance of Wassermann's Serum Diagnosis of Syphilis in Practice, By KOPP.
4. Blood Pressure and Its Auscultatory Method of Determination, By EBRET.
5. Casuistics of Colibacteriæmia. Bacteriological Diagnosis of Typhoid Fever, By WIENS.
6. The Importance of the "Radiär" Cholesterin Stone in Inflammatory Cholelithiasis, By BACMEISTER.
7. The Present Status of the Treatment of Gonorrhœa in France, By HOFFMANN.
8. The Influence Exerted on the Gastric Secretion by Salt Solutions in the Intestine, By VON BENEZUR.
9. Experiments with Ferralbol, a New Albumenoid Preparation of Iron, By LEVY.
10. A Fatal Case of Atoxyl Poisoning, By SCHLECHT.
11. Sclerosis of the Abdominal Vessels, By ROSSBACH.
12. Contribution to the Treatment of Pulmonary Diseases with Kuhn's Suction Mask (Concluded), By GREEF.
13. Bathing Habits and Hygienic Customs among the Japanese, By PAPELLIER.

1. **Obstetric Operations with Abnormal Smallness and Incomplete Dilatation of the Soft Parts.** Pfannenstiel says that many women although they have normal pelves and normal genital organs which functionate normally are badly fitted to overcome the bodily fatigue and mental agitation which are associated with confinement and asks why should the anæmic, feeble, nervous, terrified, or oversensitive primiparæ be denied the kindness of the forceps when they are easily applicable. More difficult conditions are present when the soft parts are the seat of extensive cicatrices, atresia, tumors, or of an infantile narrowness and rigidity. The indications in such cases of such operations as incision of the perinæum, incision of the os uteri, colpo-hysterotomy, and Cæsarean section are discussed.

2. **The X Ray in Gynæcology.**—Albers-Schoenberg enumerates the results to be obtained in gynæcology from the use of the x rays thus: 1. The production of the cessatio mensium, associated with which are a) the diminution of myomata; b) the reduction or cessation of hæmorrhages caused

by myomata, whether menstrual or intermenstrual; c) the cessation of pain dependent on myomata; d) the cessation of preclimacteric hæmorrhages or pains when no myoma is present; e) sterilization for gynæcological reasons. 2. The cessation of postclimacteric hæmorrhages. 3. Mitigation or cure of troubles arising from myomata without hæmorrhages in postclimacteric life. 4. The mitigation of menstrual disturbances at any age, when possible without sterilization, otherwise with sterilization.

3. **Wassermann's Reaction.**—Kopp maintains that in cases of primary syphilis the diagnosis of which presents difficulties the serum diagnosis does not clear up the diagnosis. A rule of conduct in the way of treatment cannot be obtained from either the positive or negative result. A legitimate dependence of the results of the reaction on the influence of treatment has not been proved in tertiary syphilis. A positive reaction proves at best nothing more than that there is a greater degree of probability that the individual undergoing examination has been infected with syphilis at some previous time. Finally, he considers that the too optimistic acceptance of Wassermann's serum diagnosis is associated with certain dangers.

5. **Colibacteriæmia.**—Wiens reports four cases of colibacteriæmia, three of which were fatal.

12. **Treatment of Pulmonary Diseases by Means of Kuhn's Suction Mask.**—Greef speaks very highly of this method of treatment. He has met with but one case in which harm seemed to have been produced, a case of severe hæmoptysis, and this may have taken place without relation to the treatment.

ROUSSKY VRATCH.

May 16, 1909.

1. Hypodermoclysis with Salt Solution in the Treatment of Cholera, By M. A. VASSILIEVA.
2. Two Cases of Tetany and Cholera, By E. A. GISE.
3. An Epidemic of Asiatic Cholera in Children during the Year 1908 (Concluded), By Z. I. KL'BANSKAYA.
4. Remarks upon the Article of Leontyeff and Stelker, "On the Presence of Cholera Vibrios in Convalescents from that Disease," By M. P. MIKHAILOFF.
5. On Wassermann's Reaction, By P. P. MASLAKVETS and J. U. LIEBERMANN.
6. Pathological Anatomy and Pathogenesis of Tuberculosis of the Male Genitals (To be continued), By B. N. KHOLTSOFF.
7. The Army Step (According to paragraph 23 of the Infantry Code, 1908) from the Physiological Viewpoint (To be continued), By N. A. KRUGLEFFSKI.

1. **Hypodermoclysis in Cholera.**—Vassilieva reports results of treatment of cholera by means of hypodermoclysis. The solution contained 0.7 per cent. of sodium chloride and was introduced in quantities varying from 500 c.c. to several litres in the course of from one to three days. There were 129 patients thus treated, fifty of whom recovered and seventy-nine died, a mortality of 61.2 per cent. Of the seventy-nine fatal cases, forty-seven deaths occurred within four days after the onset of the algid stage. The rest died between the fifth and the seventeenth day. The results with hypodermoclysis were best in the cases in which this measure was applied early. As a rule, the first injection was followed by rapid improvement, which, unfortunately, did not persist. This method of treatment is useless in the typhoid stage and in the very acute types of the disease.

THE GLASGOW MEDICAL JOURNAL

May, 1909.

1. Three Somewhat Remarkable Cases Illustrating Some of the Difficulties Connected with the Diagnosis of Abdominal Disease, By A. ERNEST MAYLARD.
2. Short Notes on "Puna" or "Soroche,"

By JAMES W. ALLAN.

3. Macrostoma, associated with Cleft or Soft Palate,

By G. H. EDINGTON.

4. A Case of Dermatitis Repens,

By J. WYLLIE NICOL.

5. The Treatment of Phthisis by the Intravenous Injection of Iodoform,

By JOHN BAIN.

6. Rheumatoid Arthritis Illustrated,

By F. W. SOMERVILLE.

5. **The Treatment of Phthisis by the Intravenous Injection of Iodoform.**—Bain reports six successful cases of patients treated by intravenous injection of iodoform. The amount of iodoform which they all received was, on an average, $\frac{1}{2}$ grain every second day, and toward the end of treatment every third day, except at the first injection, when it was advisable only to give $\frac{1}{4}$ grain, or 5 minims of the ethereal solution of the drug, to see how the patient was going to stand it. Some patients coughed dreadfully at first, and even after they had got accustomed to the injections they were unable to stand more than 10 minims as a maximum. It was noticed that on the day following an injection of 15 minims, the patients sometimes complained of severe headache, and aching all over the body, particularly in the lumbar region. Excessive coughing after an injection is a factor in the case which should lead us to be careful regarding our prognosis. His unsuccessful cases had shown this symptom to a marked degree, and whenever he noticed this to persist he formed an unfavorable view of the case, which its subsequent course fully confirmed. The solution of iodoform which was used was prepared according to the formula of Dr. Dewar:

R Liquid paraffin, 40 per cent.;
Ether, of 30

In every 20 minims 1 grain of iodoform is dissolved; thus 10 minims contain $\frac{1}{2}$ grain of the drug. The technique of the intravenous injection is as follows: A handkerchief is bound firmly round the upper arm, just above the elbow, and the ends are twisted and then given to the patient to hold. The object of doing so is to prevent any movement of the arm in undoing the ends of the handkerchief after the needle has entered the vein. To make the veins stand out, the patient is directed to rapidly move the fore arm up and down, though in many male patients the application of the handkerchief to the arm is quite sufficient in itself to make the veins stand out prominently. The vein usually used is the median basilii of either arm, but any superficial vein of the forearm is equally serviceable. The patient now rests the back of the hand on the injector's knee, while the latter grasps the arm sufficiently firmly to steady the swollen vein and prevent its moving during the introduction of the needle. The needle of the hypodermic syringe is introduced slowly with a circular motion, using as little force as possible, its entrance into the vein being indicated to the injector by a swelling of the neck having ceased to connect with the outermost of the veins. After the injector sees

the blood in the syringe he asks the patient to let go the twisted ends of the handkerchief, and then slowly gives the injection. If it is done rapidly the patient often complains of a feeling of having been struck a severe blow on the chest or shoulder. He is at a loss to assign a cause for this sensation, but his patients have complained of it so often that he is convinced they do experience such a feeling, and always warns a new patient to feel no alarm should he be similarly affected.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, held January 18, 1909.

The President, Dr. ROBERT T. MORRIS, in the Chair.

Election of Officers.—The following officers were elected: Vice-president, Dr. Ransford E. Van Gieson; recording secretary, Dr. P. Brynberg Porter; chairman for the borough of Queens, Dr. Neil Orrin Fitch. The usual reports were presented.

The Diagnosis of Gastric Ulcer.—Dr. MAX EINHORN said that in the diagnosis of ulcer of the stomach he had for some time past been using the method of introducing a white string and allowing it to remain in the stomach over night. If an ulcer was present and in such a position that the string came in contact with its surface there would be found more or less discoloration from blood at a certain part of the string. More recently he had employed a rubber bag, inclosed in gauze. This was introduced into the stomach in a flaccid condition, and then dilated by means of the tube to which it was attached. It was allowed to remain *in situ* for half an hour, when the air was permitted to escape from it and it was withdrawn. The gauze was dried, and it showed discoloration if it had come in contact with an ulcer. Several of the gauze bags which had been employed in this way were exhibited. In one instance the bloody discoloration was caused by a cancer, with an ulcerating surface.

Some Serious Lapses in Administrative Hygiene. The aim of this paper, which was read by Dr. HOMER WAKEFIELD, was to direct attention to the prolific causation of disease involved in the pathogenic action of a group of substances which, he said, might be classified as decadent proteins, and included degenerate nucleins, degradation albumins, putrefactive products, and divers renegade tissue extractives, when ingested as food.

Demonstration of Models Illustrating Certain Phases of Syphilis.—Five models were presented by Dr. WILLIAM S. GOTTHEIL. One of the most remarkable of them was that of a penis on which there were no fewer than eleven chancres. This was accounted for, Dr. Gottheil thought, by the fact that the man was suffering from herpes of the penis at the time syphilis was contracted.

Wassermann's Reaction in Syphilis.—Dr. HOWARD FOX demonstrated the principles and technique of the reaction. He said it should properly

erly be called the Wassermann-Neisser-Bruck reaction. In order to understand it one must have a clear idea of hæmolysis. Having defined and discussed this, he explained the principles of the Bordet-Gengou phenomenon, upon which the Wassermann test for the diagnosis of syphilis was based. The following materials were necessary for the test. 1. The "antigen" (extract of a syphilitic fetus). 2. Antibody (contained in the patient's serum to be examined). 3. Complement (normal fresh guinea pig serum). 4. Hæmolytic amboceptor (serum of a rabbit immunized against sheep's corpuscles). 5. Sheep corpuscles, obtained by defibrinating sheep's blood and washing out serum by adding salt solution and centrifugalizing. It was necessary that Nos. 2, 3, and 5 should be freshly prepared. No. 1 lasted a variable number of weeks or months, and No. 4 could be kept for an indefinite time. Wassermann's theory of a true antigen antibody union was overthrown when it was found possible to make the syphilitic extract with alcohol. This showed the active principle to be a lipoid and not an albuminoid body. Numerous lipoid substances, such as lecithin, cholesterolin, sodium oleate, even petrolatum, were found to be able to replace the syphilitic extract. This of course showed that the action of the syphilitic extract could no longer be considered as a specific one. The practical value of the test, however, was not changed. The extract of guinea pig heart, first used by Landsteiner and his associates, had recently given results identical with those from syphilitic extract in the hands of Meier, a pupil of Wassermann's. The most suitable fluids used for testing for antibodies were blood serum and spinal fluid. Antibodies had also been found in the urine, milk, and amniotic fluid. The urine was not a reliable substitute for serum, as of itself it had too strong an antihæmolytic action. The appearances presented by a positive and a negative test were then demonstrated with the tubes. The necessary controls were demonstrated by a chart, and Dr. Wood McMurtry's chart for recording results was shown.

Three modifications of the Wassermann reaction were discussed. That of Bauer consisted in omitting the hæmolytic amboceptor and relying upon the amboceptor (against sheep's corpuscles) normally present in the patient's blood. The objection to this theory was that the amount of amboceptor was an unknown and variable quantity. Practically, Behring had lately obtained in a series of 123 cases by this method results precisely similar to those from the regular Wassermann test. The modification of Tschernogubow consisted in developing an amboceptor against human corpuscles and using as an indicator human corpuscles (a drop of blood from the finger), instead of sheep's corpuscles. He failed to mention the source and titre of his amboceptor. He, furthermore, used for complement that which was normally present in the patient's blood, assuming that it would be active with human corpuscles. That this was false had been shown by Noguchi, who obtained no hæmolysis even when using human complement (with human corpuscles + antihuman amboceptor) as high as 0.3 c.c., when at the same time guinea pig complement in 0.025 c.c. readily produced hæmolysis. Noguchi

in his modification also used an antihuman amboceptor (serum of rabbit immunized against human corpuscles). For complement he uses guinea pig serum.

Dr. H. NOGUCHI said that the original Wassermann system of syphilis serodiagnosis was too complicated to be of general employment, and was open to many sources of error in the hands of unskilled investigators. It was only by those most conversant with the matter that its difficulties were thoroughly appreciated. The modifications of Bauer and Hecht simply added certain disadvantages to the original method, while the procedure of Detre and von Brezousky not only was as complicated as the latter, but reduced the practicability of the test by the use of horse blood corpuscles for the hæmolytic indicator. The proposed simple method of Tschernogubow was not feasible, inasmuch as he would use human complement to reactivate antihuman amboceptor. According to the experiments of Dr. Noguchi the antihuman amboceptor (of rabbits) showed no affinity toward human complement; hence Tschernogubow's method was a fallacy.

Dr. Noguchi's investigation of the system of the original Wassermann test, and of such modified methods as those in which susceptible foreign corpuscles were used for the hæmolytic indicator, had shown a very serious defect in the foundation of the system. The presence of natural hæmolytic amboceptor in the serum to be examined produced an additional sensitization of such corpuscles to that which was caused by the introduction of a calculated amount of immune amboceptor. This supersensitization of the corpuscles rendered a partial fixation of complement undetectable, while a proper degree of sensitization would bring out any reduction in complement by a partial suppression of hæmolysis. If it was an equal amount of natural amboceptor which existed in all human serum, it would be an easy matter to eliminate this source of error, but in reality the amount of natural amboceptor varied from nil to several units, and it could not be estimated without a special titration for every serum. For this reason the Wassermann method and most of the modifications of it were inaccurate. By means of demonstrating a parallel series of the Wassermann and his own system Dr. Noguchi had proved that this statement was borne out by the facts.

The defect of the Wassermann test was more apparent when dealing with specimens of blood sera from cases of parasyphilitic and more or less treated syphilitic affections. The Noguchi system of serodiagnosis consisted of the use of antihuman amboceptor (from the rabbit) and guinea pig complement. For general use he recommended the dried preparations of amboceptor, guinea pig complement, and antigen, in the form of powder or reagent paper. (Demonstrations given.) The quantity of the patient's serum required for his method, he said, was only a few drops, and it was used without a preliminary inactivation at 56° C. (132° F.), as in the Wassermann system. The suspension of blood corpuscles was easily prepared freshly with one drop of the patient's blood, and there was no need of a centrifuge or refrigerator, as in systems where sheep's washed corpuscles were employed. For in-

cubation the waistcoat pocket was sufficient, no thermostat being required. For measuring the different preparations of test reagents and the patient's serum or blood suspension no special graduated pipettes were necessary because capillary pipettes, which could be made at the time in each instance, were sufficient for dropping the patient's serum. In conclusion, Dr. Noguchi stated that in a comparative test examination of the Wassermann method and his own, in nearly three hundred cases, he had found the Wassermann far more inaccurate. No inactivation of the patient's serum was necessary, as this human complement had no effect upon the human corpuscles and was therefore not a disturbing factor. A drop of the patient's blood supplied the necessary corpuscles, and half a c.c. of blood gave sufficient serum for the tests. Furthermore, both amboceptor and complement had been dried and prepared in strips of paper (like litmus paper) and definite amounts used for each test. Not only was the test extremely simple, but it also appeared to be very accurate. Dr. Noguchi had compared a series of cases by his test and by the regular Wassermann test, and found that his simplified method gave more accurate results than the highly complicated Wassermann reaction. Half the cases tested were cases of his own, which he had studied clinically.

Dr. Fox mentioned several substitute methods depending upon the formation of a precipitate and having nothing in common with the Wassermann test.

The Practical Application of the Reaction and its Value in the Diagnosis and Treatment of Syphilis.—By Dr. BOLISLAW LAPOWSKI. (To be published.)

Dr. NOGUCHI said that, as the Wassermann test included five factors, it was very complicated and difficult to carry out. It was therefore very desirable that we should have a simplified method, and the one which he had devised appeared to accomplish the end in view satisfactorily. In his technique the process of drying was a very important matter. Dr. Noguchi illustrated his remarks with his test tubes and papers.

Dr. WOOD McMURTRY said that Dr. Noguchi's modification of the Wassermann reaction was exceedingly interesting, and he hoped it would fulfill the expectations of its originator. However, the only test for syphilitic antibodies which should be used at present for clinical diagnosis was that done in accordance with the technique of Wassermann, Neisser, and Bruck. The alcoholic extract of fetal liver was in every way preferable to the watery extract. The latter must be kept on ice and in the dark, and even then, especially in summer it would frequently deteriorate a few hours after its preparation. The alcoholic extract was easier to make and infinitely more stable and reliable. It could be kept, like other reagents, on the laboratory shelf, and usually retained its full activity for from six weeks to three months or even longer. The speaker advised all obstetricians and general practitioners to add to their obstetric bags a small case holding several sterile test tubes. Some of the blood which was lost in all deliveries could be collected quite

syphilitic antibodies. If this was adopted as a routine measure, he believed it probable that many apparently healthy women and their offspring would be found to be syphilitic. In such cases treatment could be begun immediately and the chances of tertiary and parasymphilitic lesions in the mother and hereditary syphilis in the child almost eliminated. This would also remove many dangerous but unrecognized sources of infection to others. Furthermore, inasmuch as the duties of the Health Department included that of furnishing every facility for the diagnosis of infectious diseases, the director of the Municipal Laboratory should provide means for applying the Wassermann reaction for syphilis. This would place the reaction within the reach of all physicians—even those practising in the poorest districts.

Dr. EDWARD D. FISCHER said it did not seem to have been shown that this test was altogether a positive one. There was still an element of doubt in regard to it, and it was just in the doubtful cases that we wanted to be sure in regard to the presence or absence of syphilis. Practically, in most of the cases we met with such a test was not necessary. Therefore, until more control cases had been examined, and the reaction had been established on a firmer basis than at present, it seemed the part of wisdom not to place too much reliance upon it. In syphilis of the nervous system there was often a long interval—perhaps ten or fifteen years—between the so called cure of the disease and these late manifestations.

Dr. JAMES PEDERSEN thought we could accept Dr. Lapodowski's statements as giving the present day status of the subject. He had recently heard Dr. Francis Carter Wood say that all such discoveries must go through four periods: (1) That of universal acceptance; (2) doubt; (3) almost total neglect; (4) equilibrium, in which the consensus determined in just what measure the test was applicable.

Dr. BERNARD SACHS said that he had employed the reaction in nearly 150 cases, of 80 of which he had the full control. While this test was extremely difficult to carry out, he thought that any one of ordinary intelligence could acquire the technique in the course of a few weeks. Every hospital in the city should have at least one person who was skilled in it, as was the case in Berlin and other European cities. His own cases had been at Bellevue and Mount Sinai Hospitals and in private practice, and he briefly referred to a few of them in which the reaction had proved of service. One was a case of diffuse cerebrospinal lues in which the question was between syphilis and multiple sclerosis, and the diagnosis of syphilis, as shown by the Wassermann test, was confirmed by autopsy. In a case of hemiplegia with occasional attacks of paraplegia, in which sudden blindness of one eye occurred, very active antisyphilitic treatment was instituted in consequence of the showing of the reaction. In a case of aortic insufficiency, with hemiplegia which would formerly have been credited to embolism, the test showed the presence of syphilis. The Wassermann test was also of service in obscure skin affections. In a case of atypical character, which was supposed not to be syphilitic, the reaction was positive, and later all the signs of secondary syphilis developed.

In another instance, where the diagnosis lay between sarcoma and gumma of the skin, the reaction was equally positive. In cases of tabes and parisis it was not very much needed, but there were many other kinds of cases in which it was of great service in making a diagnosis. The Noguchi test was certainly to be preferred, on account of its simplicity, but until it had been positively shown to be of equal value he believed that the Wassermann technique should be carried out in all practical work.

Letters to the Editor.

TUBERCULOUS DISEASE IN BURMA.

AMERICAN BAPTIST MISSION, CHIN DEPARTMENT,
HAKA, Chin Hills, Burma, May 15, 1909.

To the Editor:

As the medical profession all over the world is now making an investigation as to tuberculosis and the sources of infection to mankind, you may be interested in a few notes from these ends of the earth, and even willing to give them space in your valuable paper.

It would seem reasonable to think that tuberculosis would be almost unknown among a people living an open air and to a great extent an outdoor life, as is the custom among the tribes of the Chin Hills. This is, however, not the case, and I regret to report tuberculosis as quite a common disease even here. Very few cases are to be seen in our mission hospital as well as the Government hospitals, but when we visit the villages they show up for treatment. The name given the disease by the Chins is a ku-a saupi-ku (the cough, the long cough). In my travels I have seen tuberculosis of the spine and of the knee joints, lupus vulgaris, and tuberculosis of the lungs and cervical glands. I have found tuberculosis prevalent among all the tribes from north to south, among the old and the young. As to the possible source of infection, before the British took possession of the hills, some fifteen years ago, the Chins lived by robbery and engaged in tribal warfare as well as in limited agriculture. Since the British occupation they have subsisted by farming and coolie work. In raiding the Burmans, captives were taken and retained as slaves. Tuberculosis being a common disease among the Burmans, they may have brought the infection up into the hills.

Again, the Indian soldiers may have brought the disease, up here, as tuberculosis is very common among the Gurkhas; a large percentage of them die from this disease. The Gurkhas are a pastoral people, and live with the herds, a most filthy life. The Chins are not pastoral, although each village has a herd of mythuns, but they do not milk them or use milk as food. While the Burman slaves and the Gurkhas may have introduced tuberculosis among the Chins, it is not probable, as the disease seems to antedate both. Again, they may have brought the seeds with them from their ancestral home, Tibeto-China. At any rate, one case would be sufficient to infect them all. The Chins are unusually filthy, and, while they do not practise kiss-

ing, they expectorate anywhere and everywhere. They indulge in the use of tobacco and intoxicants without exception and without moderation. A Chin would rather have the reputation of being the heaviest drinker than any other reputation. He knows no greater joy than to be drunk, drunk day and night. So all that is needed are seeds; soil and season are here.

I have observed that the chicken is subject to both tuberculosis and syphilis. The fowl is the most commonly used creature, both as food and for sacrificial purposes, up here. An egg is never so bad but that a Chin will eat it. A number of times my cook, after having killed a chicken, has brought it to me for inspection, and I have again and again found tubercles in the liver and heart as well as along the intestines. The English fowls introduced into these hills seldom live longer than two years, and on examination I have found almost without exception that the liver and heart had what seemed to me to be tubercles. They are sick a long time and become so emaciated that nothing but skin and bones remains. The native fowls suffer from the same trouble, and, as we usually get our eating fowls from distant villages, they have not been contaminated by our European fowls, but must have carried the infection from their original home. I have been up here since 1901, and soon after my arrival I noted these facts, and, as my observations have been kept up and travels have extended and the tuberculous pest been more and more noted by closer contact with the people, it has grown on me that *there might be some relation between the tuberculosis of the chickens and their eggs and the tuberculosis of mankind.* The theory of bovine infection would not up to date prove anything among the Chins, though it probably plays a prominent part in tuberculosis among the Indian races, who subsist on milk and rice only.

During a recent journey of 600 miles, I treated 1,944 patients, and among them a number were tuberculous. As forerunners of civilization and modern medicine among uncivilized races we are eagerly looking to you in the home land for practical suggestions and curative remedies. We follow with interest the march of progress in all lines.

H. EAST.

Medical Missionary to the Chins.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we mention those in which we think our readers are likely to be interested.]

Religion and Medicine. The Moral Control of Nervous Disorders. By EDWARD WILSON, D.D., LL.D., LL.M., LL.B., UEL McCOMB, M.A., D.D., and ISADOR H. CORIAT, M.D. New York: Moffett, Yard & Co., 1908.

The book which bears this title is the official statement of the aims and objects of those who have started the so called Emmanuel movement. It is a very difficult matter to review such a book. If one undertakes to estimate its value from the scientific viewpoint, either as a popular presentation of

anatomy, physiology, and neuropathology, or of psychology, the only verdict would be that given by the candidates for admission to the freshman class of one of our large universities when asked to tell all he knew about Caligula. He said: "The less said about Caligula the better." From the viewpoint of the psychologist the book would be open to many serious attacks. From the viewpoint of theology we could make no estimate.

The viewpoint of practical therapeutics is the only position for the reviewer to base an estimate on. Every practitioner of medicine, after a very few years' experience, knows that a sick human individual with an undisturbed brain does better in fighting his illness than one who is mentally disquiet, whether the unrest is due to fear of death, fear of future punishment, or fear of temporary disability. There are many young adults of either sex whose lives have been saved, apparently, by a marriage ceremony performed during the critical period of an acute disease. In such a case whatever will quiet a disturbed cerebration ought to be done for the benefit of the patient, for the purpose of saving his life, but shall we insist that every single person who is near death shall be married?

Further, every practitioner of medicine knows that functional diseases of the nervous system are produced by improper bodily and mental hygiene, and that once a functional nervous disorder is started the only way to stop it is to correct the bad mental and physical irregularities that produced the symptoms in the first place or made them worse in the last place. It has long been known that there were many people who were quieted and led into proper ways of living by a study of the precepts of Christianity. Mrs. Eddy knew this, and so she invented her jumble of religious and scientific hodge-podge so that it might be mysterious enough to satisfy the notions of those who were unable to bring themselves to look upon human life as a variation of animal life in its large aspects. The orthodox theologians, apparently frightened by the defection of their parishioners to the standard of humbuggery, have finally discovered that the Christian religion contains those elements which, rightly presented to the human mind, make for peace and quietness. By substituting a peaceful and quiet train of thought for the turmoil and uncertainty of remorse and apprehension much good has been accomplished and will continue to be accomplished. So long as mental methods are adopted after careful physical examination by a competent diagnostician has failed to show organic changes, so long will the Emmanuel movement be productive of much good and no harm. Just so soon, however, as the theological portion of the partnership becomes convinced that it is the essential element of the business, shall we see harm resulting. Then cases of chronic nephritis will be treated as cases of functional neuroses, and general paresis will be given a mental therapy when sodium iodide would do more good. The history of such movements in the past has been that the great success of the movement from the mental side has convinced the nonmedical members of the partnership that the medical members were not essential to the success of the method.

The Emmanuel movement can, by teaching men and women more how to live rightly and by discontinuing to teach or to try to teach human beings how to die and what to look for after death, accomplish great good. Human beings unfortunately want to break all the laws of hygiene and of morals at will. They want a physician to give them a dose of medicine that shall allow them to do the former with impunity now, and a clergyman to give them a faith that shall allow them to do the latter with impunity hereafter.

Medicolliterary Notes.

Are not physicians who have the opportunity glad to go fishing? It is a dignified recreation, not generally productive of perspiration or profanity, and one in which a practitioner might become very skilled without laying himself open to the accusation of neglecting the technique of his profession. In the *June Scribner's Magazine* are four beautiful pictures by Oliver Kemp that will stir the blood of any fisherman; they depict respectively adventures in landing bass, trout, muskallonge, and salmon.

From hints dropped by the publishers, and from good internal evidence, we may conclude that *With the Coin of Her Life*, in the *June Century*, is by Dr. Weir Mitchell. The author takes advantage of the usages of fiction writers to allow doubt in the reader's mind whether the supernatural is involved or whether the heroine is the victim of an hallucination of sight. The story is the first of a trilogy on the thirteen at table superstition, by different authors, the others being Owen Wister and Margaret Deland. If we have mistaken the author of the first, we have been cleverly misled.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following news is supplied, by special request, to the Surgeon General, United States Public Health and Marine Hospital Service, during the week ending June 25, 1906.

States.	Mar.	April.	May.	Deaths.
California—San Francisco	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Georgia—Columbus	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Illinois—Chicago	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Indiana—Indianapolis	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Iowa—Des Moines	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Kansas—Topeka	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Massachusetts—Boston	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Michigan—Detroit	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Minnesota—St. Paul	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Mississippi—Jackson	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Montana—Helena	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Nebraska—Omaha	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Nevada—Carson	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
New York—New York	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Ohio—Cincinnati	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Oregon—Portland	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Pennsylvania—Philadelphia	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Rhode Island—Providence	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
South Carolina—Charleston	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Tennessee—Memphis	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Texas—El Paso	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Texas—Fort Worth	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Texas—Houston	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1
Texas—San Antonio	June 1-15, 1906	June 1-15, 1906	June 1-15, 1906	1

Places	Dates	Cases	Deaths
Smallpox—United States.			
Utah—Salt Lake City	May 11	26	1
Washington—Spokane	May 22-June 2	6	1
Washington—Tacoma	May 30-June 1	1	1
Wisconsin—Marquette	June 5-12	1	1
Wisconsin—Milwaukee	June 7-11	7	1
Smallpox—Insular.			
Philippine Islands—Manila	April 24-May 1	8	1
Smallpox—Foreign.			
Brazil—Bahia	April 30-May 7	5	1
Brazil—Rio de Janeiro	April 25-30	34	1
Brazil—Sao Paulo	April 12-May 2	1	8
Canada—Halifax	May 30-June 1	1	1
Canada—Vancouver	May 1-31	6	1
China—Hongkong	April 9-May 1	5	1
China—Tientsin	May 1-8	1	1
Ceylon—Colombo	April 24-May 8	5	1
Egypt—Alexandria	April 1-30	5	1
Egypt—Cairo	May 6-13	4	1
Egypt—Suez	March 25-May 2	1	3
Great Britain—Bristol	May 22-29	1	1
India—Bombay	May 11-18	11	1
India—Calcutta	May 1-8	25	1
India—Madras	May 1-8	2	1
India—Rangoon	May 1-8	2	1
Indo-China—Saigon	May 1-8	6	1
Italy	May 23-30	6	1
Italy—Genoa	May 23-30	1	1
Italy—Naples	May 23-30	17	1
Japan—Formosa	May 1-8	3	1
Mexico—Chihuahua	May 31-June 6	2	3
Mexico—Monterrey	May 24-31	1	1
Portugal—Lisbon	April 20-May 2	3	1
Portugal—Lisbon	May 9-10	6	1
Russia—Odessa	May 8-20	8	1
Russia—Warsaw	April 3-24	9	1
Spain—Barcelona	May 23-31	1	1
Spain—Valencia	May 15-22	8	1
Spain—Vigo	May 22-29	1	1
Turkey—Constantinople	May 16-21	1	1
Yellow Fever—Foreign.			
Barbados—Parish, St. Joseph	June 5-12	1	1
Brazil—Rio de Janeiro	April 30-May 7	8	1
Brazil—Manaos	May 15-22	2	1
Cuba—Havana	June 21	1	1
On S. S. First Bismarck from Vera Cruz			
Guatemala—Guaymas	May 10-22	21	1
Trinidad	March 27-April 3	1	1
Cholera—Insular.			
Philippine Islands—Pinaros	April 24-May 1	16	11
Cholera—Foreign.			
China—Amoy	June 1	Present	
China—Swatow	May 1	Present	
India—Bombay	May 11-18	6	1
India—Calcutta	May 1-8	2	1
India—Rangoon	May 1-8	1	1
Russia—St. Petersburg	May 25-June 1	5	1
Straits Settlements—Singapore	April 24-May 1	1	1
Plague—Foreign.			
Brazil—Rio de Janeiro	May 20	1	1
China—Hongkong	April 3-May 1	12	8
China—Swatow	April 10-May 15	2,454	1
In 14 districts in vicinity.			
Ecuador—Guayaquil	May 1-22	29	1
Egypt	May 13-June 2	61	1
India	April 24-May 8	3,331	8,09
India—Bombay	May 11-18	21	1
India—Calcutta	May 1-8	28	1
India—Rangoon	May 1-8	18	1
Indo-China—Saigon	May 1-8	1	1
Japan—Formosa	May 1-8	116	98
Japan—Yokohama	May 1-8	2	1
Venezuela—Caracas	June 9-17	2	1

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending June 23, 1900.

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Albany and Peekskill, N. Y., upon special temporary duty.

BELL, J. M., Pharmacist. Leave granted May 27, 1900, for thirty days from June 18, 1900, amended to read thirty days from July 10, 1900.

CARRINGTON, P. M., Surgeon. Directed to proceed to Los Angeles, Cal., upon special temporary duty; granted fifteen days' leave of absence in July, 1900.

COLLINS, G. L., Passed Assistant Surgeon. Granted one day's leave of absence, June 18, 1900, paragraph 150, Service Regulations.

CURRIE, DONALD H., Passed Assistant Surgeon. Directed to represent the Service at the Second International Congress against Leprosy to be held in Bergen, Norway, August 16 to 10, 1900.

FRIEDMAN, HENRY M., Acting Assistant Surgeon. Granted twenty-eight days' leave of absence from July 4, 1900.

GEDDINGS, H. D., Surgeon. Upon completion of duties enjoined by Bureau order of June 8, 1900, detailed to represent the Service at the International Conference on Tuberculosis to be held in Stockholm, Sweden, July 8 to 10, 1900; assigned for duty in the office of the American Consul at Naples, Italy; directed to proceed to Hamburg and Berlin, Germany, upon special temporary duty.

GIBSON, L. P., Acting Assistant Surgeon. Granted eight days' leave of absence from June 14, 1900.

GWYN, M. K., Passed Assistant Surgeon. Granted fifteen days' leave of absence from June 21, 1900.

HOLT, JOHN M., Passed Assistant Surgeon. Detailed to represent the Service at the joint annual meeting of the Medical Associations of the States of Washington, Oregon, and Idaho, to be held in Seattle, Wash., July 20 to 23, 1900.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted nineteen days' leave of absence, from July 17, 1900.

MAGRUDER, G. M., Surgeon. Granted twenty-three days' leave of absence from July 9, 1900.

MASON, WILLIAM C., Acting Assistant Surgeon. Granted six days' leave of absence from June 28, 1900.

MCCLINTIC, T. B., Passed Assistant Surgeon. Upon expiration of present leave of absence, directed to report to Director of Hygienic Laboratory for temporary duty.

RAMUS, CARL, Passed Assistant Surgeon. Granted one day's leave of absence June 13, 1900, on account of sickness.

REA, ROBERT H., Acting Assistant Surgeon. Granted one day's leave of absence, June 18, 1900.

RYDER, L. W., Pharmacist. Granted one day's leave of absence June 19, 1900, under paragraph 210, Service Regulations.

STEVENSON, J. W., Acting Assistant Surgeon. Granted four days' leave of absence from June 22, 1900.

WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from June 22, 1900, on account of sickness.

WERTENBAKER, C. F., Surgeon. Detailed to inspect the Bacteriotherapeutic Laboratory, Asheville, N. C.

Boards Convened.

Board of medical officers convened to meet at the U. S. Immigration Office, Vancouver, B. C., June 12, 1900, for the purpose of examining alien Chee Yu. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Acting Assistant Surgeon H. R. Storrs; Acting Assistant Surgeon Stuart A. Ross, recorder.

Board of medical officers convened to meet at the Bureau, June 19, 1900, to determine the fitness of Pharmacist E. B. Scott for promotion to the grade of pharmacist of Class I. Detail for the board: Assistant Surgeon General W. J. Pettus, chairman; Passed Assistant Surgeon J. W. Frask, recorder.

Resignation.

Pharmacist K. H. Graham resigned, to take effect July 15, 1900.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 26, 1900:

BUCHSBAUM, MAURICE, First Lieutenant, Medical Reserve Corps. Ordered to duty with troops marching from Fort D. A. Russell, Wyo., to Fort Robinson, Neb., instead of First Lieutenant Joseph E. Bastion, Medical Reserve Corps.

CHAMBERLAIN, WESTON P., Major, Medical Corps. Detailed a member of the board of medical officers for studying tropical diseases in the Philippine Islands.

DALE, FREDERICK A., Captain, Medical Corps. Granted leave of absence for fourteen days.

FISK, OWEN C., First Lieutenant, Medical Reserve Corps. Ordered to Fort Michie, N. Y., for temporary duty during the week beginning July 12th.

FOSTER, CHARLES L., Captain, Medical Corps. Ordered from San Francisco, Cal., to Washington, D. C., in charge of an escort to insane patients; granted leave of absence to July 6th.

KIERSTED, HENRY S., Captain, Medical Corps. Granted leave of absence for one month.

KIERULFF, H. NEWTON, First Lieutenant, Medical Reserve Corps. Ordered to Fort Snelling, Minn., July 2nd, for temporary duty.

MCCOWN, THOMAS B., First Lieutenant, Medical Reserve Corps. Ordered to Fort Duchesne, Utah, for temporary duty during the week beginning July 12th.

MCMILLAN, CLEMENS W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, August 20th.

O'DAY, SYLVESTER F., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his services being no longer required.

PERLEY, HARRY O., Colonel, Medical Corps. Announced as chief surgeon, Department of the Colorado; ordered to inspect posts in that department.

SCHMITTER, FERDINAND, First Lieutenant, Medical Corps. Ordered to St. Louis, Mo., for temporary duty in charge of the Medical Supply Depot.

TRUBY, ALBERT E., Major, Medical Corps. Ordered to take charge of chief surgeon's office, San Francisco, Cal., during the absence of Major James M. Kennedy on inspection tour.

TYLER, GEORGE T., First Lieutenant, Medical Reserve Corps. Relieved from duty at Plattsburg Barracks, N. Y.; will proceed to Seattle, Wash., in time to sail August 5th for the Philippine Islands.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending June 26, 1902:

ALFRED, A. R., Surgeon. Detached from the *Wolverine* and ordered to the *Minnesota*.

BRISTER, J. M., Passed Assistant Surgeon. Detached from the *Milwaukee* and ordered to the *Independence*.

COHN, I. F., Assistant Surgeon. Ordered to duty at the naval hospital, Philadelphia, Pa.

DU BOSE, W. R., Medical Inspector. Detached from command of naval hospital, Yokohama, Japan, and ordered to Bureau of Medicine and Surgery, Navy Department.

DUNN, H. A., Passed Assistant Surgeon. Detached from the *Independence*, ordered home, and granted leave for two months.

EYTINGER, E. O. J., Assistant Surgeon. Ordered to the *Wolverine*.

FRENCH, G. R. W., Acting Assistant Surgeon. Appointed an acting assistant surgeon from June 18, 1902.

GILL, J. E., Passed Assistant Surgeon. Ordered to the naval recruiting station, Cleveland, O.

GILTNER, H. A., Assistant Surgeon. Detached from the naval training station, San Francisco, Cal., and ordered to the *Glacier*.

GROVE, W. B., Surgeon. Detached from the *Minnesota* and ordered to the naval training station, Narragansett Bay, R. I.

IRVINE, W. L., Acting Assistant Surgeon. Ordered to duty at the naval hospital, Boston, Mass.

JENNESS, B. F., Passed Assistant Surgeon. Detached from the *Glacier* and ordered to the *Milwaukee* and to additional duty at the naval hospital, Puget Sound, Wash.

JOHNSON, M. K., Surgeon. Detached from the naval training station, Narragansett Bay, R. I., July 10th and ordered to the *South Dakota*.

KENNEDY, R. M., Surgeon. Ordered to command the naval hospital, San Juan, P. R., sailing from New York, N. Y., about July 24th.

MORRIS, L., Surgeon. Detached from the naval station, Cavite, P. I., and granted leave until September 1st.

MUNGER, C. B., Assistant Surgeon. Ordered to the naval training station, San Francisco, Cal.

OLSON, G. M., Assistant Surgeon. Ordered to the naval recruiting station, Minneapolis, Minn.

PRYOR, J. C., Surgeon. Ordered to command the naval hospital, Yokohama, Japan.

REED, A. U., Assistant Surgeon. Ordered to naval recruiting station, Minneapolis, Minn.

ROBNETT, A. H., Assistant Surgeon. Ordered to duty at

SHIPPEN, L. P., Assistant Surgeon. Detached from the naval recruiting station, Minneapolis, Minn., and ordered to the navy yard, Mare Island, Cal.

STEADMAN, W. G., Assistant Surgeon. Detached from the *Louisiana* and ordered to continue treatment at the naval hospital, Norfolk, Va.

THOMAS, G. E., Acting Assistant Surgeon. Detached from duty at the naval hospital, Norfolk, Va., and ordered to the *Franklin*.

VON WEDEKIND, L. L., Surgeon. Detached from the *South Dakota* and ordered home to await orders.

WEBB, U. R., Passed Assistant Surgeon. Detached from the naval hospital, San Juan, P. R., and ordered home to await orders.

WHEELER, L. H., Passed Assistant Surgeon. Detached from the *Hancock* and ordered to the *Marietta*, sailing from New York, N. Y., about June 24th.

WHITE, E. C., Passed Assistant Surgeon. Detached from the naval recruiting station, Cleveland, O., and ordered to temporary duty at the naval torpedo station, Narragansett Bay, R. I.

WILLIAMS, R. B., Surgeon. Commissioned surgeon from December 11, 1900.

WILSON, H. D., Surgeon. Detached from the *Illinois* and ordered to continue other duties.

WOODS, E. L., Assistant Surgeon. Ordered to duty at the naval hospital, Annapolis, Md.

Births, Marriages, and Deaths.

Born.

BANTA.—In Fort D. A. Russell, Wyoming, on Tuesday, June 15th, to Captain William P. Banta, Medical Corps, U. S. A., and Mrs. Banta, a daughter.

Married.

ALLYN—GREENMAN.—In Mystic, Connecticut, on Wednesday, June 23, Dr. Louis Maxson Allyn and Miss Laura Abbie Greenman.

CHAMBERS—SCHLEY.—In Philadelphia, on Thursday, June 24th, Dr. Francis Stapleton Chambers and Miss Mary Katherine Schley.

DOWNING—TREAT.—In Flushing, New York, on Wednesday, June 16th, Dr. F. C. Downing, of Lanesboro, Massachusetts, and Miss Elizabeth C. Treat.

JOHNSON—CORCORAN.—In Providence, Rhode Island, on Wednesday, June 16, Dr. George F. Johnson and Miss Helen I. Corcoran.

JOHNSTONE—SHYROCK.—In Philadelphia, on Thursday, June 24th, Dr. Oscar P. Johnstone, of Pittsburgh, and Miss Bertha E. Shyrock.

MOORE—COLLINS.—In Bustleton, Pennsylvania, on Wednesday, June 23d, Dr. Joseph A. Moore and Miss Helen Regina Collins.

PHILLIPS—TYLER.—In Elderhurst, Sackett Harbor, New York, on Wednesday, June 23d, Dr. Merritt Flint Phillips and Miss Elizabeth Gratz Tyler.

PRESCOTT—THOMPSON.—In Cresco, Iowa, on Wednesday, June 9th, Dr. Lee W. Prescott, of Sloan, and Miss Sadie Thompson.

WELTY—FORD.—In Philadelphia, on Thursday, June 24th, Dr. Emil M. Welty and Miss Lily I. Ford.

Died.

ADAMS.—In Fort Worth, Texas, on Tuesday, June 15th, Dr. George E. Adams, aged twenty-seven years.

HARGROVES.—In Norfolk, Virginia, on Wednesday, June 16th, Dr. Legave Hargroves, of Deans, aged forty years.

O'GRADY.—In Brooklyn, New York, on Tuesday, June 22nd, Dr. Joseph O'Grady, aged fifty-seven years.

POST.—In New York, on Friday, June 25th, Dr. H. W. Post.

WEISZGERBER.—In Philadelphia, on Wednesday, June 23d, Dr. John Weiszgerber.

WELCH.—In St. Petersburg, Florida, on Tuesday, June 22nd, Dr. Thomas P. Welch.

WILSON.—In Boston, on Thursday, June 17th, Dr. Louis T. Wilson, aged thirty-two years.

WILSON.—In Upper Montclair, New Jersey, on Wednesday, June 23d, Dr. Thomas P. Wilson, aged seventy-eight years.

WOLF.—In Newark, Delaware, on Tuesday, June 22nd, Dr. Theodore R. Wolf, aged fifty-nine years.

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Original Communications.

A NOTE ON THE IPECAC TREATMENT OF AMŒBIC DYSENTERY.*

BY GEORGE DOCK, M. D.,
New Orleans,

Professor of Theory and Practice of Medicine in the Tulane
University of Louisiana.

(Published under the Imprimatur of the American Society
of Tropical Medicine.)

The ætiology of the disease usually called amœbic dysentery is still unsettled, but as a practical matter we know that when amœbæ of certain kinds occur in the stools there is a peculiar form of ulcerative enteritis, affecting part or even all of the colon. We also know that the affected individual is likely to have a chronic, recurring diarrhœa or dysentery, with considerable risk of large abscess of the liver, or of other complications. Like many other diseases, it is relatively amenable to treatment in the beginning, and this fact, with its tendency to remissions, make it a favorable subject for therapeutic novelties, most of which fail in longer trials. Ipecac has been used from an early period, but although it is still recommended enthusiastically by many, it is either not tried, or used with poor or indifferent results by many more. Even those who employ it with confidence differ as to the class of patients most benefitted, some stating that the remedy is only useful in acute cases, others chronic ones; some in the amœbic, others in the bacillary forms. Having used it with what seemed to me remarkably good results in chronic amœbic dysentery, and having learned some things about its employment and action that are not widely known, it may serve a purpose to call attention to it at this time.

I have no theory of the action of the drug. I have made some experiments with live amœbæ from stools, on the warm stage, which suggest a direct destructive action, and I hope to carry the observations farther. There is also, apparently, a cholagogue action, and sometimes a purgative action, but I am unable to ascribe what part, if any, these have in the general result.

Clinically, in cases treated with ipecac we see within a few hours a cessation of the amœboid motion of the parasites. Soon after, they have the appearance, in fresh stools, of amœbæ that die under observation, and in from one to three days they disappear completely. In the same time, beginning

within twelve hours from the administration of ipecac, the stools lose their dysenteric character. Mucus and blood, later pus, disappear, and the stools resemble those of mild, simple enteritis, or normal infants' stools, or even become formed. Sloughs and the gangrenous or cadaveric odor also disappear, except in the extensive and severe cases sometimes encountered, in which the disease is too advanced to permit time for improvement. Other protozoa in the fæces, such as trichomonads, vary much in their reaction to ipecac. Sometimes they disappear before the amœbæ; usually they are little or not at all affected. In one case the interne, Mr. Kory, showed me a lively strongyloides in a stool passed after all the amœbæ were killed. Gripping and tenesmus sometimes continue a short time, but soon cease, and are rarely increased by the treatment.

Most of my observations were made in cases in the wards of the Charity Hospital, New Orleans, within the current year, and as many of the patients left as soon as they got relief, the final outcome cannot be stated. In two cases the patients remained in the hospital for four and two months respectively after treatment, and control observations, after salts and with the use of the rectal tube, have been negative. Similar experiences have been met by several of my colleagues who have used the treatment.

The suggestion to try the method was given me by seeing, in the summer of 1908, a patient treated in my wards four and a half years before. He had had a severe dysentery for two years, acquired in the Philippines, but remained free from symptoms and amœbæ after ipecac treatment. The case will be reported by my former colleague, Dr. John G. Gage, of Ann Harbor.

In another case cure has continued for six months. A brief history will be instructive, and I have to thank my friend, Dr. H. A. Freund, of Detroit, Michigan, who carried out the final treatment, for notes of the latter and its results.

The patient was a white male, who at the aged of fifty-two acquired chronic dysentery in Honduras, in March, 1904. He treated himself by daily enemas of physiological salt solution, two quarts, followed by a quart of water containing five grains of quinine. Notwithstanding this treatment and a careful life in other respects, I found in December, 1904, a moderately severe dysentery, with mucus, blood, and pus, and large, active amœbæ with red blood cell inclusions. For the next three and a half years the patient carried out treatment with saline enemas, followed by 1 in 1,000 quinine solution. He became very expert in taking the injections, and by posture got them well up in the colon and retained the quinine for considerable periods. He also took, all this time, chaparro amargoso, and also sulphur, the latter in twenty grain doses,

*Read at the sixth annual meeting of the American Society of Tropical Medicine, held at the United States Naval Medical School, Washington, D. C., April 10, 1909.

three times a day. He was satisfied with his condition, and though not well he was fairly comfortable until September, 1908, when, possibly as a result of a chilling, he had a pain in the left side, and frequent small stools. He then came to see me. Examination with the protoscope showed general redness and swelling of the mucosa, with many small ulcers. Bits of rose colored mucus lay on the surface, and showed under the microscope large numbers of large and active amœbæ. Dr. Freund then began ipecac treatment, and owing to the abrupt exacerbation and the long duration it seemed advisable to make it thorough. After the first course of thirteen five grain pills of ipecac, salol covered, in as many hours, there was still considerable mucus in the stools but the amœbæ were all dead. Two more courses of ipecac were given, ice water and quinine enemata used, and the patient not allowed to go about for six weeks. The ulcers in the rectum were touched with silver nitrate.

Certain details of the treatment should be considered. The patient should be kept in bed, not only on account of the depression sometimes but not always caused by the ipecac, but on general principles that apply to the treatment of all severe intestinal inflammations. With the idea of getting the remedy as closely as possible in contact with the parasites, there should be a preliminary purgative. Epsom or Glauber salts, with or without a preliminary dose of calomel, seem well adapted. Fasting beforehand is rarely necessary, but all food should be stopped while the ipecac is being taken, and only liquids, such as albumen water, gruel, whey, weak tea, and water, used after it.

The dose of ipecac may be varied to suit the severity of the case, from thirty to sixty grains being given at first, and then twenty to forty grains twice a day, for three days. At first I gave five or seven and a half grain doses every hour until from sixty to 105 grains were taken, but it seems equally efficient and less troublesome to give a larger dose once or twice a day. In some cases the condition of the stools and other symptoms warrant stopping treatment before the end of the third day. The ipecac is given in pills covered with salol or keratin. The latter I have never used, because the salol covered pills are easily made by any competent pharmacist, and are usually satisfactory. Dr. Freund has had some made with chocolate coating under the salol. The object of the cover is to prevent an emetic action, salol and keratin being undissolved in the stomach, and this makes unnecessary the use of opium preparations, formerly thought to be essential in the ipecac treatment. If there is much pain morphine may, of course, be used, but I cannot but think it a mistake to narcotize a patient with dysentery. Vomiting rarely occurs after taking ipecac as described. Usually there is no nausea or regurgitation at all, and several patients have assured me they had no unpleasant sensations of any kind. Rarely there is vomiting after the first dose. In one case a patient taking ten grains three times a day vomited if his mealtime came two hours after the medicine, but not when the hours were changed. Occasionally, more or less distinct salivation is noticed. As a precaution, I advise patients to lie down after taking the ipecac, on the right side, with an ice bag to apply to the epigastrium or throat in case nausea appears. The patient must always be warned not to chew the pills, but in children, and patients who do not understand well, this may occur, with the result of an emetic action. Griping after ipecac may be treated by a hypodermic injection of atro-

after the amœbæ have disappeared, should be treated as under other conditions, but not with strong astringents or opiates. When in doubt in such a case, a saline purgative is the best thing to use. Hot normal saline flushes of the colon, or ice water, are valuable in the after treatment. Local treatment of ulcers of the rectum should not be neglected, if found, and they should always be looked for.

Perhaps it may be necessary to say that I claim no credit for originality in any of the details given, and wish only to stimulate others to actual trials, as well as to the study of the recent literature.

124 BARONNE STREET.

AGRICULTURAL ASPECTS OF THE PELLAGRA PROBLEM IN THE UNITED STATES.*

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Expert, Bureau of Plant Industry, Bureau of Plant Industry, U. S. Department of Agriculture.

(Published under the Imprimatur of the American Society of Tropical Medicine.)

As I wish to speak on pellagra from the aspect of the agriculturist, I am going to make the assumption, right or wrong, that pellagra is caused, directly or indirectly, by the consumption of Indian Corn. I wish, however, to make myself perfectly clear upon this point. I am not asserting that corn is the only or even the most important ætiological factor. My own personal experience with the subject has, as yet, been inadequate for me to have an opinion of my own. I am making the assumption merely as a working hypothesis. I am going to assume further that good corn is wholesome, but that spoiled corn is an important factor in the development of pellagra. I am perfectly well aware that the zeist theory of the ætiology of pellagra is not universally accepted, and I am furthermore perfectly well aware that the supporters of this theory are divided into two unequal groups, a small one asserting that a corn diet is in itself an important factor; and a far larger one which makes spoiled corn alone responsible. However, I think it is no overstatement of the facts to say that the great majority of the students of pellagra incline to the belief that spoiled corn when consumed by poorly nourished and badly housed individuals is the most important ætiological factor. This being so, it is not for me to pass judgment on the merits of their attitude. I can but accept it provisionally, disclaiming, for the present, any responsibility for it.

Now, making this position, be it right or wrong, our starting point, let us ask ourselves the question why it is that, though maize has been grown and consumed in this country for ages, pellagra has not appeared until within the last few years. I realize perfectly that, logically, I ought to prove that pellagra is actually a new disease and has not merely been overlooked until the last few years. This, however, is again a clinical proposition that lies outside the scope of my work. I can but assume that the clinicians of the past were good observers

*Read at the annual meeting of the American Society of Tropical Medicine, held at the Eastern States Medical School, Washington, D. C., August 1909.

and that therefore pellagra is a newcomer. Why then is it a newcomer? Have there been in recent years changes in our methods of dealing with corn which, on the zeist theory, would explain the appearance of pellagra?

Are we to-day planting new varieties of corn more subject to spoiling than the old ones? Have new methods of corn culture come into vogue? Are climatic conditions different? Has corn culture spread to new territory unsuited to it? Is the method or time of harvesting other than it used to be? Are the methods of storage and transportation changed? Does the consumer cook or prepare corn food in new ways?

These are some of the possibilities that must be taken into account. Let us consider them seriatim and see how far they support, individually or collectively, the zeist theory and how far, assuming the correctness of this theory, any changes that we may find account for our recent outbreaks of pellagra.

Let us first consider corn culture in the south where pellagra has appeared and where corn forms twenty-three per cent. of the diet of the Tennessee and Georgia mountaineer and 33.5 per cent. of the negro's.¹ Conditions in some of the southern States resemble those in New England and the northern Atlantic States in that an amount of corn insufficient for local consumption is produced. This statement is difficult to prove in the absence of statistics upon the movement of crops within the country. The statistics on the shipping of corn out of the county where grown show us that in both these sections of the country but a very small portion of the crop leaves the home county.² The inference is that much corn is imported from the corn belt; and this is the opinion of crop and milling experts. Nearly all the corn grown in the south must therefore be consumed and milled where grown. Under such conditions changes in agricultural methods are less likely to be made than when the produce is exported into the markets of the world. Corn, furthermore, has been until very recently, possibly, a minor crop in the south. It was more profitable to exchange cotton for corn than to grow corn, another state of affairs not likely to stimulate changes in agricultural methods.³ Moreover, the further south we go the poorer the average yield per acre. Statistics do not show any marked increase in the yield of the last ten years such as one would expect were corn culture changing or improving rapidly in the south.⁴ And nevertheless despite these factors which make for conservatism in agriculture, the educational influence of the southern experiment stations has been effective in bringing about some change though not as much as in the corn belt proper where these conservative factors are not effective.⁵ The varieties of corn planted, which, as we shall see, have changed so much in the corn belt, have not left the south uninfluenced. The

methods of corn culture have in a measure changed, due to improved methods of agriculture involving the rotation of crops. A man farming on this principle wants to get one crop off the land so as to be able to get the next one in as soon as possible. The result is a tendency, in a few sections to-day, to harvest the corn before it is thoroughly ripe, whereas formerly it was allowed to dry out on the stalk till late in the fall. A similar effect in causing a too early harvesting of corn is brought about in a few sections by the cessation of the old practice of topping. Topping consists in cutting off for fodder that portion of the stalk projecting above the ears. The ears were allowed to ripen and dry on the remainder of the stalk. They were then husked in the field, and the stover used as forage. Experiment stations have demonstrated that this form of procuring fodder is unprofitable; and it will in time die out.⁶ More and more corn is being shocked instead of being allowed to ripen on the standing stalk. The result is again a tendency to harvest more unripe corn than formerly. However, it is but fair to say that despite the efforts of the stations these changes in southern agriculture have been very slight. Of the remaining factors of our list, transportation, inasmuch as most of the corn produced is probably consumed locally, can hardly be of importance. Still it is worth while pointing out that, as we shall see in another connection, transportation in the warm and sometime also moist southern climate may be a more important factor in spoiling corn than it is in the colder north. Methods of milling in the conservative south have probably also changed less than elsewhere. This applies particularly to the removal of the germ before the grinding of the endosperm. While in the north nearly all the corn for human consumption is treated in this way, in the south the old fashioned form of corn meal is still very popular.⁷ The great significance of this fact, I shall have occasion to recur to later.⁸ The south is climatically peculiarly well suited to corn culture and the climatic conditions must be exceptional indeed to prevent proper ripening of corn. How important ripening is, we shall soon see. And finally I have been able to learn of no changes in the preparation of maize food which seemed significant.

We have then found changes in the corn grown in the south mainly in the harvesting of greater quantities of imperfectly ripened and cured corn, and possibly also in new varieties grown. Even these changes are, however, not very extensive. Most other factors remain unchanged. Is this true of imported corn, which as we have seen is increasingly imported into the south as well as into New England? Can we find new conditions in corn imported into the south from regions further north, which are capable—always granting the correctness of the zeist theory—of accounting for the outbreak of pellagra?

I think we can. Such changes will be particularly significant if we consider that in the past gen-

¹C. S. Woods, Food Value of Corn and Corn Products, *Farmers' Bulletin*, No. 298, U. S. Department of Agriculture, p. 7.

²Yearbook of the Department of Agriculture, 1907, p. 610. W. O. Atwater and Charles D. Woods, Dietary Studies with Reference to the Food of the Negro in Alabama, U. S. Department of Agriculture, Office of Experiment Stations, Bul. No. 89, 1907, p. 1.

³S. M. Tracy, Corn Culture in the South, U. S. Department of Agriculture, Farmers' Bulletin No. 81, 1898, p. 1.

⁴Yearbook of the U. S. Department of Agriculture, 1901, p. 611.

⁵Alabama College Station Bulletin, No. 88, Mississippi Station Bulletin, No. 33.

⁶S. M. Tracy, Corn Culture in the South, *Farmers' Bulletin*, No. 81, U. S. Department of Agriculture, 1908.

⁷Atwater and Woods, Dietary Studies with Reference to the Food of the Negro in Alabama, U. S. Department of Agriculture, Office of Experiment Stations, Bulletin No. 71, p. 8, 1907.

⁸H. W. Wiley, Composition of Maize, U. S. Department of Agriculture, Bulletin No. 103, 1902.

eration the amount of corn imported into the south has been increasing. In fact there has been considerable change all over the country. Corn was formerly produced sufficiently for local needs and corn meal was made locally. Naturally, under these conditions the best corn was selected for human consumption. In recent decades corn has more than ever before become an article of commerce, a condition of affairs which certainly does not tend to keep up quality. Therefore let us take up again our series of possibilities applying them this time to corn culture in the corn belt.

Varieties of corn planted have been changing considerably in the last decades. Originally in New England the flint corn was and still is grown. One of its characteristics is its excellent keeping quality. In the corn belt this variety is not grown to any considerable extent. Consciously or unconsciously the effort of the agricultural experiment stations has been to increase the oil content of corn. The result is a decided increase in the amount of corn oil which may be obtained from the grain and a corresponding increase in the caloric food value of the grain, a most important economic factor because so much corn is used to fatten domesticated animals. What may be accomplished by systematic selective breeding along these lines is seen in some work done recently by Louie H. Smith, at the Illinois Agricultural Experiment Station*. In ten generations the oil or fat content was raised from a minimum of 4.70 per cent. to a maximum of 7.37 per cent., a gain of 2.67 per cent. Now, this change in the oil content of the grain may well be of importance to pellagra. When corn becomes mouldy it is always the embryo that is affected first. It is into the embryo that the fungus first makes its entry and there it flourishes best. Not merely does the fungus flourish best in the embryo but the greater part of the toxic material is in the decayed embryo. That spoiled corn contains toxic substances was easily proved by Neusser, Lombroso, Erba, Babes, and others. Whether these toxic substances are capable of producing typical pellagra is an entirely different question, a question that we begged when we started with the assumption that pellagra is due to spoiled corn. Be this as it may, the toxic material is mainly in the germ. Now as it happens, the greater part of the oil is located in the embryo. Probably, therefore, a variety rich in oil is also one with a large germ. It is, therefore, not unreasonable to assume that such a large embryo variety of corn would, when it does become mouldy, produce a greater amount of this poisonous material. It is of course true that in the process of milling the germ is more or less completely separated and used to make corn oil and cattle feed. However, this is not true of corn milled in the south or for the southern market. The milling of corn differs from that of wheat in that it is not so centralized. Corn meal is milled in many places throughout the country. When the germ is not separated the amount of it to be found in different grades of meal is different. The best grades will have least and the poorer grades most. This matter has been investigated by Dr. Stefano Balp, of Bergamo, who was able to

show that the toxicity increased with the diminution in quality going parallel with the embryo content.¹⁹ Of course the poorer parts of the population purchase the cheapest and poorest grades of flour and the most toxic. What the material is, out of which the microorganisms manufacture the toxic principle or what this toxic principle itself is, chemically, we do not know. There have, to be sure, been a long series of researches upon these substances. They have been carried out by Cesare Lombroso, Neusser, Babes, Erba, Antoniu, Mario Serena, Elena Manicattide, and others, but in no case has any single substance been definitely isolated or characterized chemically. There is some evidence that some of these toxic substances are related to the fats, or at least have similar solubilities. This is a possibility worthy of future investigation in the light of the work of Faust and Tallqvist²⁰, upon the rôle of oleic acid in bothrioccephalus anæmia. I mention it here merely to point out that the high oil content of recent varieties of corn may also be important in this connection.

And this brings up the question of the keeping qualities of different varieties of corn. As a general rule varieties like flint corn keep best. In Roumania there is a general belief that only the yellow and the white varieties of corn cause pellagra; while the red does not. Von Babes²¹ states that as a matter of fact red corn keeps better—in Roumania at any rate—than the paler colored kinds. This is an important line of investigation upon which we have as yet insufficient data, for the subject is a most difficult and intricate one.

We have then in considering our first possibility found that in the corn belt the varieties of corn are changing and changing in a way that may increase the toxicity when the corn spoils.

The development of new methods of culture in the corn belt may be dismissed briefly. I was able to learn of no radical changes, at least of none capable of throwing light on the matter under consideration.

When we come to consider climatic conditions we find more important factors. Weather statistics show us that for the last seven or eight years we have had a preponderance of cold wet falls and sometimes late springs. Now, corn to ripen properly needs plenty of time for growth and a long warm fall. It is our beautiful Indian summer that is largely responsible for the excellent quality of our corn crop. We have not had the typical Indian summer of recent years, and consequently a fair amount of corn had to be harvested before it was properly ripe. Now, in Italy it is a fairly generally accepted view that corn harvested before it was properly ripe is almost certain to spoil and to produce pellagra. Is it not then a most significant coincidence that our outbreak of pellagra has followed a series of cold, wet falls?

Now, climatic conditions are but one side of the question whether or not we are growing corn in territory unsuited to it. A given district may be unsuited temporarily because for a time there prevail abnor-

*Louie H. Smith, Ten Generations of Corn Breeding, University of Illinois, Agricultural Experiment Station, Bulletin No. 128, 1909.

¹⁹Centesime anni di lotta contro la pellagra (1881-1906) biella, 1908.

²⁰Schrippe für experimentelle Pathologie und Pharmakologie, Ivi, p. 367 (1907).

²¹Die Pellagra, p. 88, Wien, 1901.

mal climatic conditions; or it may be more or less permanently unsuited because only exceptionally does the summer warmth last long enough. Now, the southern part of our country is probably very rarely subjected to such climatic conditions that corn does not ripen properly. As we travel north this becomes less and less true. To-day the corn belt is steadily spreading northward and westward toward the mountains. Every effort is being made to extend it and to develop varieties of corn which will thrive further and further north. The wheat lands of the northwest are not as productive as they were. Hence it is desirable to have a rotation of crops, and corn is one of the crops the introduction of which is being attempted. It is a question whether to-day with the existing varieties of corn the northern limit of safe corn culture has not been exceeded. The cultivation of corn in unsuitable territory is practised extensively in Italy and only in these parts of Italy does pellagra occur. In southern Italy, where maize ripens well, there is no pellagra. Italian and Roumanian investigators maintain that corn harvested unripe is pretty certain to spoil and when consumed to induce pellagra. Is it not likely that with the extension of our corn belt northward in recent years, together with our recent exceptionally cold and wet falls, we have been harvesting more moist corn than in former decades? If this is so may it not have some bearing on the pellagra situation?

Our next point for consideration, the methods and time of harvesting, is intimately associated with the suitability of the territory to corn culture and the climatic conditions. I have already shown that more corn is probably harvested in this country before it is ripe than was the case in former years, partly because of unusual climatic conditions, partly because of the extension northward of our corn belt. These factors necessitate the harvesting of corn too early and its insufficient curing. The great dangers of this procedure I have already pointed out, though it is of course impossible to say how extensive this has been. Corn is very difficult to keep without moulding. This is due chiefly to its great moisture content which is very much greater than that of other grains. It must be thoroughly dried in order to keep well. The parching of corn practised by the Indians was therefore a most rational procedure. Even ripe corn unless it is thoroughly dried is liable to mould. Corn that ripens late in the year has not time to dry properly before it is stored in the cribs and bins. Moreover, it is still the practice of some farmers to store it insufficiently protected from the weather so that during the winter it becomes thoroughly wet. As long as the weather is cold corn does not spoil. As warm weather comes on such corn is very likely to spoil," for the conditions under which it is shipped make its spoiling almost a certainty.

There has been another factor to encourage imperfect curing, the market conditions in the fall. Of recent years the production of corn has probably not kept pace with the demand. The result has been that unusually high prices have prevailed in the fall. These have naturally stimulated early

marketing. It is of course evident that shelled corn will dry less easily than corn on the cob in the bin.

Corn is transported in closed cars without ventilation. The grain of corn is a living thing. It is breathing, consuming oxygen, giving off carbonic acid, and as the result of its respiration heat. The heat thus given off increases the rate of respiration till the corn heats up hot enough to create ideal conditions of temperature and moisture for the growth of fungi. Corn transported thus into the northeast may have its tendency to ferment checked by the colder climate. Corn shipped to the south will on the contrary have the tendency to ferment augmented often by the warm moist climate. Quite in conformity with this fact, is the experience of the United States Department of Agriculture with ship loads of corn exported from the seaports of the two sections to foreign lands. Shipments from North Atlantic ports are not so apt to become spoiled; as we go south more difficulty is experienced; while the greatest difficulty is often encountered with shipments from gulf ports.

We see, therefore, that in the last few years there have been not a few changes in corn conditions. Whether these changes are sufficient to account for our outbreaks of pellagra it is of course impossible to say positively, though they are, to say the least, suggestive. They make the corn imported into the south mainly responsible for the conditions there, though as we have seen there are changes in corn production in the south itself which may well aggravate the situation. Whether this is entirely fair is, in the absence of statistics of the movement of corn within our country, not possible to decide. Certainly there is an analogous case abroad. The Greek island of Corfu used to produce maize of an excellent quality and pellagra was unknown there. Subsequently corn culture was discontinued because wine culture was found more profitable. Corn was thereupon imported and pellagra appeared.

As I have already pointed out New England, as well as the south imports large quantities of corn; and most certainly much of this is spoiled. Why then is not pellagra rife in New England? Pellagra does not occur there for probably the same reasons that it spares the Italian city dwellers though it decimates the surrounding peasantry. The New England population lives under good hygienic conditions, while corn products are only a small part of its daily diet. The reverse is true of the southern dorky. In New England in the milling of corn meal the grain is first degerminated. In the south it is usually not so treated. In New England much of the imported grain is fed to stock. The south is notoriously poor in the numbers of its domesticated animals. In New England the climate for a great part of the year does not favor fermentative processes; in the south it does. All these are reasonable explanations.

Having considered the conditions which lead to the deterioration of corn, what remedy is it possible to suggest? The most potent factor in the spoiling of corn is water. An excessive moisture content is very apt sooner or later to lead to mould formation. Of course it is to the interest of the farmer to sell corn with as great a moisture content as possible, for such corn is heavy and will aver-

¹W. C. Hartley. *Harvesting and Storing Corn*. *Farmers' Bulletin*, No. 313, U. S. Department of Agriculture, 1907.

age more bushels to the acre than after proper drying and curing. When it is loaded into cars it straightway heats up, ferments, and spoils, often before it reaches its destination. The dealer who receives such corn naturally often succumbs to the temptation of mixing it with enough good corn so that meal made from the mixture will not be offensive to the taste or smell. The amount of spoiled corn used in this way is very great. The only rational means to combat this evil is to induce purchasers of corn to pay for it according to its moisture content. No progressive large consumer of coal any longer purchases it on the basis of its weight alone. The price paid for coal is to-day regulated by its caloric value. Corn probably varies far more in its caloric value than coal, for its moisture content may vary from less than ten per cent. to more than thirty per cent. Why buy corn in a less rational way than coal? If the price of corn is fixed by the moisture content, this will offer a powerful inducement to the farmer and shipper to dry his corn thoroughly before transporting it because it will greatly reduce his freight charges. It would, probably, very largely put a stop to the spoiling of corn and, on the zeist theory, to pellagra. But it would also be a matter of tremendous economic importance to our country. Of course any preventable disease, pellagra, or any other, is an economic waste; and of course, spoiled corn even when fraudulently sold, represents an economic waste. But the greatest economic waste of all, lies in the unnecessary transportation of water in the form of the moisture in corn. Annually many million gallons of water are hauled from the corn belt to the seaboard, an enormous economic waste, and one that it is to the interest of the public health as well as the public wealth to prevent. The dealing in moist corn has been so great that the exporters have overreached themselves. Not only have they brought it about that American corn fetches a low price in the world's markets, but they have practically closed these markets to this, one of our most important crops.

The remedy is then to cause the corn to be thoroughly dried before transportation. To bring this about, corn must be sold upon a basis of its moisture content. But to make this possible there must be an efficient impartial system of grain standardization. Such a system under the complex conditions of our present civilization can, without doubt, be best carried out by the Federal government. Federal grain standardization would not merely tend to restore to us our lost markets, it would not merely increase our economic efficiency, it would not merely make for higher business morals and greater commercial honesty, but it would also be a most important public health measure. Such legislation would be as truly a potent influence in our public health as a Federal quarantine.

If I have taxed your patience with a discussion of certain features of the corn industry it is because I know that as physicians we are intensely concerned with all that has to do with the public health. Nothing is more important to the public health than the food supply of our people. No element of the food supply is more important than the cereals. In our country corn is one of the most important

among them¹. I trust therefore that anything that affects the quality of our corn is of some interest to American physicians. So I do not feel that I need apologize for not having treated the subject assigned to me in this "symposium" in a clinical fashion.

THE ETIOLOGY OF PELLAGRA.*

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Pellagra has become of interest to American medical men only since 1906, and even now it is of practical importance chiefly to only one section of our country. Its appearance, however, as experience in other countries has amply demonstrated, is a matter of much gravity, and the question may in time assume the proportions of a national calamity.

A disease of this endemic epidemic type is naturally of great interest to me as an officer of a national public health service, and of course my more direct interest would, for like reason, lie in the direction of its etiology and epidemiology. Our experience with the disease in America has not been extensive, and our literature, though rapidly increasing, is as yet of small volume. It is my purpose in this paper then to attempt only a brief, general review of what is known regarding its etiology.

The etiology of pellagra, in any definite, scientific sense, is essentially unknown. In the words of a recent Italian writer: "The actual knowledge of the cause and nature of pellagra, one may say, remains still in the realm of hypothesis, although an extraordinary scientific activity on the part of students, especially Italian students, has thrown light on many important points." In spite of this fact, however, even a brief review of the extensive literature will soon convince one that profound convictions are held as to its nature and cause by the vast majority of students of this interesting disease.

The very early views entertained as to the nature and cause of pellagra, such as its being an atypical expression of leprosy or of syphilis or of scurvy, while interesting, possess now perhaps only historic value. For, with the exception of a small group of students, to whom I shall later refer, no doubt is expressed that the disease is a distinct entity with its own peculiar morbid phenomena. Indeed its unique symptomatology, its anatomical lesions, epidemiology, and geographical distribution would seem to leave no doubt upon this point.

With regard to the cause of pellagra, throughout all of its literature there stands one supreme idea or theory, which permeates almost all authors, directs most research work, and upon which is founded practically all attempts at its restriction or eradication. This idea is the etiological relation declared to exist between pellagra and the extensive use of maize, or Indian corn, as an article of food. This

¹ *Proceedings of the Department of Agriculture, June 15, 1910.*

*Read at the sixth annual meeting of the American Society of Tropical Medicine, held at the United States Naval Medical School, Washington, D. C., April 1910.

idea seems to have arisen very early in the history of the disease, and such a suspicion may possibly even have been entertained by Casal himself, who is credited with first having described pellagra. Indeed there are authors who are inclined to maintain that pellagra was known before Casal's day, and that even then suspicion had fallen upon maize as its cause. At any rate, the idea, in a vague sort of way, was an early and persistent one. It was perhaps first formulated, early in the nineteenth century, by Marzari, who believed that maize caused the disease by reason of its deficiency in certain nutritive qualities. Thus later came into tangible existence the great maize theory of pellagra, and the final creation of the so-called "zeist" (from *Zea mays*) and "antizeist" schools of thought. The maize idea, in one form or another, has ever since held a dominant place in the aetiology of pellagra.

Following its definite enunciation, the maize doctrine, more or less rapidly, began to undergo a development and modification which has continued up to the present time, with a consequent almost bewildering variety of opinions.

The first important step in its evolution was the announcement of Balardini's "verderame" theory. This observer had noticed on the grain a greenish discoloration, shown later to be a growth of *sporosorium maydis*, and he conceived the disease to be due to this hyphomycete. This introduced a new phase of the maize idea in attributing the disease, not to maize *per se*, but to spoiled or damaged maize. Largely through the labors of Lombroso, who was doubtless stimulated by Balardini's conception, this idea was later developed broadly, and so ultimately came into existence what is sometimes called the "zeitoxic" school, who maintain that not in maize, but in spoiled maize (*i. e.*, maize which under the influence of bacterial growth has undergone some change) must the cause of pellagra be sought.

It seems unnecessary to trace step by step the evolution of the maize doctrine, and it will, perhaps, serve every purpose to state briefly the present views held by various writers on this subject. But before doing so it may perhaps be more logical to state, with equal brevity, the general grounds upon which are based an aetiological relation between maize and pellagra. The broad statements may be given, as follows:

1. It is declared that history and observation show clearly that the first appearance of pellagra, and its later dissemination, followed, more or less closely, the introduction of maize culture into Spain and its gradual spread to France, Italy, and other countries of southern Europe.

2. It is declared that pellagra is found as an endemic disease only in those countries where maize is grown and extensively used as an article of diet by the poorer rural classes. It is of importance to note on the other hand that the area in which pellagra is found endemic is but as a spot on the extensive area over which maize is found under cultivation. There are vast tracts where maize is, and has been grown and used as food for many years, and yet no pellagra has appeared. This is a matter

of much import with regard to the aetiological rôle which spoiled maize is supposed to play.

3. It is declared that countries in which maize is not grown or used as food, or only exceptionally so used, even though contiguous to pellagrous sections, or actually surrounded by them, are free of pellagra. There are numerous striking instances of this kind reported in the literature of pellagra (see Lombroso, Procopiu, Babes and Sion, and others).

4. It is declared that a change of food either among individuals, or groups of individuals, brings constantly a diminution or disappearance of pellagra, or *vice versa*. There are also many reported instances of this kind. Most writers allege that recovery may take place, or amelioration occur in the condition of pellagrins by removing from their diet all maize and maize products. The case of Corfu, in this connection, is regarded as such a notable instance that it may bear quoting. Typaldos states that pellagra was unknown in this island previous to 1857 and that up to that time the inhabitants grew their own maize, which was of a fine quality, but, for economic reasons, the culture of grapes became almost universal, and they began to subsist on an imported maize of very poor quality, that is spoiled maize. Pellagra followed and became endemic, and he found in 1866 eighty-one cases there. (Arnould.)

Now to return to the various modifications of the maize theory, if we disregard some of the finer distinctions, they may perhaps be grouped as follows:

1. The idea that maize, as a food stuff, is wanting in proper nutritive value. This conception is in reality no longer held, having been rather effectually discredited by many careful analyses of maize which show that this cereal possesses high nutritive value, is rich in fats and nitrogenous substances, and is easily assimilable. In food value it compares very favorably with rice, for example, which constitutes a staple article of diet among a numerous class of people who do not suffer from pellagra. Pellagra is moreover not infrequently found among well nourished individuals, and its symptomatology is not that of inanition.

2. The idea that good, sound maize contains certain toxic substances which cause pellagra. This is another view which has been largely discredited by the absence of pellagra in so many places where maize is, and has been, for long periods, extensively used as food.

It is also worth while to note that the gross distinction between sound and spoiled maize is, in the opinion of many able observers, not always easily determined. Maize, by reason of its high fat and nitrogen content, seems quite subject to change under the influence of bacterial growth, and grain which to all appearance may seem perfectly sound can nevertheless be shown to be spoiled or damaged to a greater or less extent.

3. The toxicochemical idea that under the influence of parasitic growths (bacteria or moulds) maize may undergo certain changes with the formation of one or more toxic substances of a chemical nature (exogenous poisons). This idea has a host of adherents. It was established through the admirable labors of Lombroso who has been its great advocate and exponent: and it is perhaps today the most popular of all the various phases of the maize

¹Arnould, J. In *Dictionnaire encyclopédique des sciences médicales*, p. 316. ²D'ailleurs Casal entrevit aussi l'étiologie: il posait l'atmosphère, l'atmosphère et le climat, comme cause totale du mal.

theory. It is not without critics and antagonists however, and Lombroso's experimental work and conclusions have been seriously called in question by many able students of the disease.

Lombroso, after devoting more than a quarter of a century to the problem, came to the conclusion that certain toxic substances are produced in the maize by the growth of saprophytes on the grain, and that the use of such maize as food produced pellagra. He failed directly to incriminate any particular microorganism. In investigating chemically the poisons in question, he describes three substances, a red oil, a highly toxic substance or "pellagrozeina," and a resinous substance. "Pellagrozeina" he found the most toxic of all these substances, and in its action on animals very similar to the poisonous materials held responsible for the production of ergotism. It is probably not a definite substance and has been said to contain at least two active principles, one tetanizing (like strychnine), the other narcotic (like conium). In animals inoculated with these toxic substances Lombroso noted such symptoms as wasting, muscular spasms, diarrhoea, and death; in fowls loss of feathers also occurred. He also gave a tincture of spoiled maize to men and observed changes in appetite, some loss of weight, erythemas, desquamation, and other skin lesions, with sometimes light diarrhoea.

In the opinion of many such acute lesions are not comparable to pellagra, and similar conditions may be produced with other harmless cereals submitted to the same process.

A great number of students have accepted Lombroso's ideas in general and followed him in this field, seeking principally to determine the character of the toxic substances produced and the microorganisms responsible for them. Erba, Hausemann, Pelloggio, Gosio and Ferrati, Mariani, Belmondo, Pelizzi, Tirelli, Babes and Sion, and many others have obtained various toxic substances from spoiled maize, but so far there is not sufficient evidence to call any of these substances specific in their nature. The evidence submitted seems only to show that from spoiled maize various poisonous substances may be obtained which in animals, and even in man, will produce symptoms or changes which appear somewhat like pellagra. On the other hand, it is known that extracts from other grains, similarly spoiled, may likewise contain similar poisonous properties.

It is of much interest in this connection to know that Babes and Manicatis succeeded in neutralizing the toxicity of spoiled maize extracts with the serum of cured pellagrins; and, from a series of carefully conducted experiments, concluded that the blood of pellagrins contains a substance which possesses the property of counteracting the toxic action of the extracts of spoiled maize.

4. The toxicoinfective idea that from spoiled maize there is formed within the body certain toxic substances (endogenous).

Neusser advocated the view that under some circumstances there is formed in maize, largely under the influence of the *Bacterium maydis*, a certain "receptive mother substance" which later, in the body, underwent a further change. Under other circumstances, however, he viewed the disease as a direct intoxication.

De Giaxa, following an earlier idea of Di Donna's, attributed great importance to the action of the colon bacillus on ingested maize. His idea seems to have been that the vegetating properties of this bacillus may become greatly modified on a culture medium of maize, and he alleges that he has shown the production, by the colon bacillus on maize media, of specific toxic substances.

Marie also seems to favor the conception of an autointoxication. After reviewing, with approval, Pelizzi's work, he seems to think it reasonable to suppose that the necessary elements in the production of pellagrous symptoms, once in the blood, may decompose there under the action of certain bacterial ferments ingested with the maize, and undergo toxic transformations. He thinks the toxic substances involved may perhaps be more nearly related to amorphous chemical ferments, and suggests that the pellagrous poison may be polytoxic.

5. The idea that pellagra is a specific infection, derived from maize, either a mould or a bacterium.

The flora of maize has been frequently studied, and a great number of parasites named and described. Most of these, however, have attracted little attention with the exception of the fact that all may cause changes in the grain upon which they vegetate.

Following Balardini's *sporidium maydis*, which was later discredited, Pari incriminated the maize smut (*ustilago maydis*). This, too, was discredited.

In 1881 Majocchi discovered on maize a motile organism which he called *Bacterium maydis*. He asserted also to have found it in the blood of pellagrins. Cuboni later found a similar microorganism in spoiled maize and in the stools of both healthy persons and pellagrins, but in greater profusion in the latter. Paltauf and Heider and others worked with this microorganism, and it was later shown to be the ordinary potato bacillus.

In 1896 Carrarioli reported that he had found a bacillus in the blood and stools of pellagrins, which he named *Bacillus pellagræ*. His results have not been confirmed.

In 1902 Ceni declared pellagra to be due to an infection by two moulds, *Aspergillus fumigatus* and *flavescens*—a true aspergillosis. He states that the spores of the aspergilli, ingested with food, escape through the intestine and locate in the lungs, pleura, pericardium, and pia mater, from which places he has been able to isolate them at autopsy. He also states that the greatest toxicity of the aspergilli occur at that season when pellagrous symptoms are most in evidence, and that this corresponds to the "cycle of the annual biological evolution" of these hyphomycetes. Later, with Besta, he found these moulds to possess a virulent and characteristic toxine, which resides almost exclusively in the spores, and determined that the media on which they grow plays but little part in its production. More recently Ceni and Besta are said to have found toxic properties in *Penicillium glaucum*.

Tizzoni, in a series of recent papers, announces the discovery of a specific microorganism, which he calls *Streptobacillus pellagræ*. This work has, of course, not been confirmed. In his first paper (1906), working with Fasoli, he states he isolated from the blood and organs of acute pellagrins (*tifo pellagrosa* and *fronosa pellagrosa*) a bacillus which

he found pathogenic for the usual laboratory animals, and which in the guinea pig produced a very suggestive clinical picture and anatomical lesions. In his next paper, working with Panichi (1907), he experimented with rabbits and guinea pigs by introducing into the stomach cultures of this same bacillus. From these experiments he concluded that this bacillus had an elective action upon the intestine of any animal, but in the more susceptible guinea pig it produced death with an experimental and anatomical picture similar in all respects to pellagra, provided the diet of the animal contained a liberal share of maize. In his last paper (1909) he reviews his previous work, announces the isolation of the same microorganism from the stools and blood of chronic pellagrins as well as from spoiled maize. He describes two distinct strains of this bacillus, easily distinguished, and thinks these strains correspond to different grades of virulence (acute and chronic pellagra), that the symptoms and anatomical lesions produced in the guinea pig correspond to those of pellagra, that the elective lesion is in the intestine which is always primarily involved, that this intestinal lesion is always followed by a specific, general intoxication, especially manifested upon the nervous system, blood vessels, and red cells, and secondarily upon the liver and kidneys; finally that these toxins show a long period of latency, and have a particular affinity for the nervous system, conducing ultimately to its profound disintegration.

So much for the maize theory and its variations. Now when we turn to the "antizists" we find them greatly in the minority. There are two great facts which have been urged against the maize theory. First, and most significant, is the extensive territory over which maize is and has been cultivated and used as food for many generations, and yet no pellagra has appeared. The second is the frequently reported cases of pellagra in which there is no history of the use of maize or its products by the sufferers as food.

The first statement is of course evident, and the "zeitoxic" idea is offered in explanation. The second is by no means always admitted, and has proved the cause of much controversy. Soon after its creation the "zeit" idea met with much opposition, and later a group of French thinkers, especially Landouzy and others, reported a number of cases of pellagra where no maize had been consumed. Roussel, the able and ardent French "zeit," sharply questioned such observations and rather effectually discredited the diagnosis, introducing at the same time into the literature of pellagra the now well known term pseudopellagra, which he thought described their cases, as they did not conform to the picture of the true disease. This term, pseudopellagra, has itself been the cause of confusion to some and an object of ridicule to others. Manson speaks of the invention of the comfortable term pseudopellagra, and scornfully remarks: "The disease is pellagra when it fits in with the orthodox theory and when it can be connected in any way with maize, but when this is not possible, the disease becomes pseudopellagra."

From France frequent reports have been and are being made of pellagra without maize, and there has grown up there a school of thought which denies that pellagra is a morbid entity at all. It is

spoken of as the pellagrous syndrome and regarded as a *morbus miseriae* (see Cecconi, Le Fers, and others). It is undoubtedly true that there may arise among alcoholics and in cachectic states, especially among the insane, certain symptoms simulating in many respects pellagra, yet such a diagnosis is not admissible; and it is said that a careful study of such cases readily permits discrimination. Certainly it seems difficult to understand how doubt can arise that pellagra is a disease *sui generis*, when consideration is given to its unique symptomatology, its anatomical lesions, epidemiology, and geographical distribution.

All criticism of the maize school, however, is not of this destructive type. At the meeting of the British Medical Association in 1905, Sambon, in a remarkable paper, put forward the highly interesting suggestion that pellagra might be due to some protozoan, a suggestion which has later met with the hearty approval of Manson. The general line of this argument is that an examination of the numerous observations and experiments shows one fact clearly, and that is that each investigator asserts that he has reproduced pellagra, either in man or animals, and yet it is evident that the disease can have but one cause. It is unwise, therefore, to place too much reliance on such experiments, and it should not be forgotten, as history amply shows, that the interpretation of experiments is often as fallacious as the interpretation of natural facts. The reputed historical facts with regard to the relation between the introduction of maize culture and the appearance of pellagra are called in question, and an attempt is made to show that there is historical evidence to prove that maize was grown in Europe long before the date usually assigned. It is pointed out that the areas of maize growing and pellagra endemicity do not coincide, that pellagra has been observed frequently in parts of France, Spain, and Italy where maize is not cultivated, and that the comparative study of the distribution and prevalence of pellagra at different periods is decidedly unfavorable to the maize theory.

The opinion is expressed that the prevailing ideas as to the etiology of pellagra are very unsatisfactory, and that the maize idea has been much too dogmatically adhered to by investigators. The suggestion is made that pellagra shows many analogies with such diseases as syphilis, trypanosomiasis, and kala azar. Such remarkable resemblances are noted between pellagra and trypanosomiasis as the characteristic, perivascular, small cell infiltration, benefit by treatment with arsenical preparations, and the mononuclear increase in the blood. It is further suggested that the parasite may be insect borne, and the erythema of pellagra may be one of those interesting instances of correlation in nature whereby the parasite is enabled to enter some intermediate host, complete its life cycle, and perpetuate its existence, such as is seen in the correlation between the night swarming of the larvæ of certain filaria and the nocturnal habits of its intermediate host, the mosquito; and that maize may perhaps be found to sustain some such relation to the etiology of pellagra as the swamp has been shown to sustain to the etiology of malaria.

In this connection it is highly interesting to record that Babes and others in a very recent article

have reported highly beneficial effects in the treatment of pellagra by atoxyl and arsenous acid combined, and they have put forward practically the same suggestive idea as Sambon's. They state that the almost specific therapeutic action of arsenical preparations as well on certain protozoal diseases as upon the manifestations of pellagra at least suggests, by analogy, some conclusions as to a similar aetiology. Pellagra, they still think, is in all likelihood due to some change in maize caused by parasitic influence, and the idea can not yet be excluded that from spoiled maize not only toxic substances but parasites as well may be conveyed to the predisposed human organism, either direct or by means of insects or other organisms.

From its analogy to malaria, piroplasmosis, and trypanosomiasis, diseases to a certain extent with the same geographical distribution, the thought is justified that for the transmission of pellagra some similar, intermediate, animal host is necessary; and for the intoxication or infection itself some microscopic animal parasite. Such a parasite must necessarily be very small, perhaps ultramicroscopic, and, although in their researches they found only in the erythematous skin of pellagrins bodies resembling the smallest Negri bodies, yet the results of arsenical treatment encourage new investigations along the lines suggested.

The usually given *predisposing causes* of pellagra contain some facts worthy of brief mention.

With regard to *age* the statements are somewhat discordant, but it is worthy of note that the disease does not occur in infants and seems to be rare in children. The usual age seems to be about twenty to forty.

Its relation to the *seasons and sun*, from the characteristic, spring erythema has furnished much cause for discussion at times; and the disease has been called the "sun disease," "sunstroke of the skin," etc. General opinion, however, seems to attribute to the sun only a mild, exciting effect in the production of the erythema.

Alcoholism and other depressing conditions exert only the indirect influence of lowering resistance, but it should be noted that the toxic substances of spoiled maize are soluble in alcohol and hence alcohol may contain such poisons.

From a review of the literature one would seem justified, at least tentatively, in making the following statements:

That the cause of pellagra is essentially unknown.

That the idea, in one form or another, of an aetiological relation between pellagra and the use of maize as food, is held by the majority of students of the disease, that such an idea is almost as old as the history of the disease itself, that it rests to some extent upon the observations and experimental work of many able men, and that, in consequence, it is not to be lightly cast aside, though, at the same time, it would seem unwise to hold such views so dogmatically as to exclude investigation along other suggestive lines.

That Ceni's work on the direct infection by certain hyphomycetes (aspergilli), and Tizzoni's work on his specific *Streptobacillus pellagrarum*, while well worthy of serious attention at the hands of investigators, remain yet to be confirmed.

That Sambon's suggestion of the possible protozoal nature of the disease rests largely on an argument by analogy, and is at present little more than a suggestion, though an extremely interesting one. It offers a new, and possibly profitable, field for investigators.

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PROGNOSIS IN EYE DISEASES VIEWED FROM THE STANDPOINT OF THE PATIENT'S RIGHTS AND THE OPHTHALMOLOGIST'S DUTY.*

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Perhaps a better title for my paper, as indicating its purpose most definitely, would be What Ought We to Tell a Patient Afflicted with a Serious and Progressive Eye Disease?"

For the patient at least this is a question of the utmost moment. The physician naturally lays most stress on diagnosis and treatment; and, indeed, he can hardly devote too much care to the one nor too much judgment and thought to the other. But to the patient the prognosis is the important thing. He is mildly interested in the nature of his com-

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plaint, but he is vitally interested in its outcome. His curiosity leads him to ask: "Doctor, what is the matter with me?", and consideration for his comfort or convenience will urge the query "What I am obliged to do for my eyes?"; but his supreme interest centres in the anxious question "Can you cure me and when?" or in the agonized appeal "Doctor, am I going blind?"

Too often the answer to these questions is given hastily, perfunctorily, on insufficient evidence, and without thought of the effect that may be produced in the patient. The result is untold mental suffering leading sometimes to despair—even to insanity or suicide—or more often driving the patient to resort to quacks whose business it is to promise hope to the hopeless. In many cases the patient, finding after a time that the ophthalmologist's recklessly made prognosis is unverified by the event, conceives, not unjustly, a contempt for him and the science that he represents.

Even when an evil prognosis has been made on sufficient grounds and is verified by time, what gain has the patient had from our prediction? None. Rather has he received cruel and needless suffering which we might have averted had we been more chary of prediction and more cheerful in manner; had we, in a word, allowed him the benefit—the delusion, if you will, of hope.

We believe that very rarely, indeed, is it justifiable to tell the patient that he cannot recover or that nothing can be done for him. We would go further and say that it is rarely proper for us to say this even to ourselves.

The conditions in which this sort of statement is oftenest made are: 1. Extensive disease of the cornea; dense corneal opacities, staphyloma, keratoconus. 2. Iridocyclitis; degenerative iridochorioiditis and other degenerative or destructive affections of the uveal tract. 3. Retinitis pigmentosa. 4. Optic nerve atrophy (including high grade toxic amblyopia). 5. Glaucoma. 6. Progressive high myopia. 7. Detachment of the retina. 8. Intraocular hemorrhage. 9. Cataract. 10. Injuries, including operations.

A few cases may be cited, which show the necessity of care in the prognosis of these conditions and the advantages of an enlightened optimism over a dogmatic and inconsiderate pessimism.

CASE I.—A girl of twenty-one came to me with dense opacities covering both cornea. In her better eye vision was 15/200. An optical iridectomy had been advised, but careful comparison of the sight before and after dilatation of the pupil—the test in the latter case being made with a rotating keyhole slit—showed that there was no likelihood of any gain from this operation. Nor did there seem much probability of helping her at all with glasses, yet by painstaking tests a glass was found which raised her vision to 15/100 in each eye. Slight as this gain seems, it was marvellous to her. The pleasure and real help that she got from it would have been lost, had I after a perfunctory examination told her that nothing could be done to improve her sight. Moreover, had I told her this, she might have been discouraged from seeking further aid from one who would have taken the trouble to help her.

CASE II.—A young girl was obliged to give up a clerical position because of increasing poor sight in one eye. I found it affected with that peculiar form of degenerative uveitis associated with heterochromia of the irides. As is usual in such cases a cortical cataract developed, and opacities formed in the vitreous. The sight has naturally gone from bad to worse. Under the strain of her enforced idleness and the brooding over her trouble, the girl who had

been of a light, happy disposition, became morose, nervous, and irritable. I have kept her under treatment, general and local, although I regard her eye condition as practically hopeless; and I have done this, first because I wish to eliminate every possible cause of constitutional trouble, second, because I am hopeful that by and by some light on some new form of treatment will bring this intractable condition and be applicable to her case; third, and most of all, because I am convinced that if I cast her off and tell her that I can do nothing for her eye, her present discouragement will become despair and her moodiness insanity.

CASE III.—A man of fifty-eight with pronounced arterio-sclerosis and with recurrent retinal hemorrhages came in one day with vision reduced suddenly to mere perception of hand movements. Only a black reflex was obtainable with the ophthalmoscope—the vitreous was evidently full of blood. To myself—not to the patient—I said, "There is no hope for restoration of useful vision in that eye." Yet ten months later, after continuous treatment with sodium iodide and systematic dieting, he had in that eye a vision of 15-20+ with glasses. The hemorrhage, except for a few shreds had been absorbed, and although the fundus showed evidence of the damage it had suffered, the eye was almost as useful as ever.

CASE IV.—I saw three years ago a society woman with a toxic amblyopia due to great excesses in both alcohol and tobacco. Her sight was only 3/200; there was an absolute central scotoma 5° wide in the right eye and 10° wide in the left. There was well marked temporal pallor of both discs. Yet three weeks later under abstinence and the use of potassium iodide and strychnine nitrate, supplemented by the very best hygienic conditions, her vision rose to 15/50—in the right eye and 15/200 in the left, while the scotomas shrank to one fourth of its former size. The condition at the outset seemed most unpromising; yet the immediate improvement was great and the ultimate result probably excellent.

CASE V.—Last year I saw a lady whose eye was blind from detachment of the retina, and who had a cystoid bulging along the scar produced by an old cataract operation. The cystoid vesicle was lined with pus and the interior of the eye contained purulent masses which pressed against the cornea; the iris was sodden, swollen, and discolored, and the sclera, along the operation scar was beginning to bulge. The tension was elevated. The lids were swollen. In a word, the condition was one of panophthalmitis with impending perforation through the cornea or along the sclerocorneal margin. I advised incision, but the patient preferred to trust to Nature. She was justified in the event, for, impossible as it seemed to me for such a thing to occur, the inflammation after increasing for awhile abated; the cystoid vesicle and ciliary staphyloma flattened down, the pus absorbed, and the eye returned spontaneously to its original condition.

This unusual outcome would not prevent my advocating incision in a similar case in the future; but it would make me cautious in again giving an absolutely unfavorable prognosis in a well developed panophthalmitis.

CASE VI.—Shortly after the civil war an army officer consulted one of the most distinguished ophthalmologists in New York and was told that if he did not give up tobacco he would go blind in a few months. The officer, who had optic nerve trouble with color blindness caused by a sun stroke, lived thirty years after that, and smoked and read assiduously up to the day of his death.

CASE VII.—Six years ago a gentleman of sixty-one consulted me, stating that an oculist fifteen years before had told him he would go blind in a few years. He had a retinitis pigmentosa far advanced; but his vision when I first saw him was still 15/40 with glasses. His fields, of course, were very small. Six years later, and twenty-one years after the fatal prognosis given by the oculist, his vision was still 15/40, and although his fields had contracted, he was still able to go about alone. Careful correction of his rather high mixed astigmatism had given him comfortable and fairly adequate vision.

CASE VIII.—Quite lately I saw a lady who had seen a number of ophthalmologists and was greatly depressed because she had—rightly or wrongly—gathered from them the impression that she had glaucoma and that her sight

was rapidly going. She had a myopia of over 20 D with considerable atrophy in the macular region of both eyes and a corresponding large central scotoma. Naturally her vision was very poor (12/200 at best). Yet a 14 D glass for distance gave her great satisfaction and comfort in enabling her to see her way on the street; and the discovery that her peripheral field and her tension were normal enabled me with a good conscience to give her a fair prognosis and lift a great burden from her mind.

The condition above all others in which careful prognosis is required and reckless statements are to be deprecated is cataract. A case like the following is typical enough:

CASE IX.—A lady in poor circumstances, but of good breeding and intelligence, came to me for glasses. I found an incipient cataract; said nothing of it, and gave her glasses with which she got a vision of 15/15—. Soon after she went to one of our dispensaries and was told abruptly that she had cataract, would be blind in a few months, and could then come back for operation. Naturally she was panic stricken. When she returned to me, I said to her something like this: "I saw your cataract when you first came. I did not speak of it, however, because in the first place, there was no earthly reason for your being troubled about it, and, in the second place, what you mean by cataract is quite different from what I mean. I understand by it any opacity, slight or great in the eye, whether progressive or not; you understand some terrible affair that would soon blot out your sight altogether. Now I saw twelve years ago a patient who had as much cataract as you have now. I gave her glasses and have changed them from time to time, and her cataract has developed so little in all those years, that in spite of it she is still able to read and otherwise use her eyes as she pleases. Your cataract may never increase to the point of producing blindness; it causes you no trouble at all now and may not cause you any for years to come. Until it does cause you trouble there is no use of your thinking nor of my speaking about it."

And this is the attitude that, I think, we ought to take regarding incipient cataract. If we do not purpose attacking it therapeutically, we ought to say nothing about it to the patient at least, although we may speak to the patient's relatives if they are to be trusted. If pressed to say whether there is a cataract, we should answer in some such way, as I did to my patient. In particular, I think we ought to avoid using the term cataract whenever we can, speaking rather of an "opacity," or a "muddiness," or "speck," or any other term that shall convey to the patient a truer because more comprehensible idea than does the term cataract. We shall thus often spare the patient what one of them said had been inflicted on her "a life of horror," that terrible expectation of blindness, which to the nervous is worse than blindness itself.

Other cases might be adduced, but these may suffice to illustrate and, I hope, justify the following propositions:

1. An error in prognosis is often more disastrous to the patient and more humiliating to the surgeon than an error in diagnosis or in treatment.

2. Be the condition ever so desperate, we are rarely justified in admitting even to ourselves that the case is hopeless and that nothing more can be done; to make such a statement to the patient, except in the very rarest instances, is needless and often very pernicious cruelty. This is so because (a) our diagnosis and prognosis are necessarily fallible. (b) Even if the diagnosis is accurate and the prognosis apparently so according to present standards, we never know how soon some new discovery may change our views of the one or the other. Only recently we have learned that some-

times an apparently intractable uveal disease may be relieved by tuberculin; optic neuritis that we once would have considered irremediable may be relieved by decompression; an optic nerve atrophy that we would have held to be inevitably progressive may be arrested by operation on the accessory sinuses; and an impending suppurative in the eye may be stopped by staphylococcus vaccine. So other conditions which to-day we regard as incurable may be susceptible of amelioration to-morrow because of some discovery as yet undreamt of. (c) Even if the case in hand is really hopeless, we have no right to deprive the patient of the blessings of hope. In particular, we have no right by predicting an unfortunate outcome to give him the needless suffering of an anticipated evil which is often worse than the suffering of an evil realized.

3. Brutal positiveness, often regarded as an evidence of honesty, is more frequently a sign of sheer selfish inconsiderateness on the part of the surgeon, who will not take the time or trouble to mitigate the blow he is inflicting nor give the patient the explanations necessary to qualify his downright assertions. Sometimes such positiveness is simply a mark of ignorance; the expression of a hastily formed and erroneous opinion.

4. If we maintain a cheerful and determined optimism we not only help the patient to bear his troubles, and by giving him hope prevent much suffering and mischief, but we are ourselves stimulated to make greater exertions in his behalf and are prevented from degenerating to the dead level of routine treatment or to the depths of an actual therapeutic nihilism. We shall find, too, I believe, that in most cases the exercise of such an optimism, by making us more careful in prognosis, makes us also more careful in diagnosis. We are more apt to find out all the points of a case, if we are seeking with all our power to find something favorable to tell the patient or something upon which we can base some kind of treatment. Certainly those who make "snap" prognoses are very apt to make "snap" diagnoses as well.

5. In pursuance of this optimism, we should strive to emphasize the favorable points of the patient's case, call attention to the fact that he is holding his own, attend with sympathy and patience to his complainings, and lay stress on any factors in his case that we can ameliorate. For we must remember that in chronic progressive conditions many of the patient's symptoms, at least, can be helped, and the relief of these, even when we think them nonessential, may be of vast importance to him. Slight improvement of the sight by glasses, or adjustment of the latter to the conditions under which the patient uses his eyes, may make all the difference between useful and useless vision. This is particularly so in cataract, corneal opacities, keratoconus, and progressive myopia. Here too, it is especially necessary to keep the patient under observation, as changes in the glass will be necessary from time to time, and unless these are made the patient will get the false impression that his sight is deteriorating. Again, in these and other progressive eye affections relief of external irritation may help the patient greatly even when the sight is not improved. In myopia and in cataract potas-

sium iodide sometimes aids considerably in clearing up a vitreous opacity. In progressive cataract the use of mydriatics from time to time may give the patient useful sight during a period when sight may be of the greatest value to him.

6. Even when there is nothing much we can do, the patient often derives encouragement and satisfaction from the sympathetic cheerfulness that we have the power to give him when he visits us. To many this is a help of inestimable value, and one that it is our duty to bestow. For we must remember that we are not simply oculists but physicians, and that, even if we accomplish nothing for the patient's eyes by our consistent optimism and persistent treatment, we may yet accomplish much for his bodily and mental welfare and we are bound to do so if we can.

7. There are some cases, of course, in which optimism would be wrong. There are patients who have to be handled without gloves, and who have to be frightened or dragooned into obedience. In such cases brutal frankness is necessary, provided always that by it we can secure some good to the patient. I would never, for example, smooth over the prognosis where there is danger of sympathetic inflammation, but would say in the plainest and directest terms that the patient must lose his offending eye if he hopes to save the other. In general, however, this sort of frankness is best reserved for the patient's friends. Even to them our statements should be qualified by an avowal of the fallibility of our judgments. To the patient our prognosis should be as encouraging as possible; our demeanor sympathetic and cheerful; our treatment such as will best relieve his symptoms, so that if we cannot cure or even arrest his trouble we shall at least make him the better for having seen us. In this way we shall best subserve the patient's interests and perform our duty as ophthalmologists and physicians.

49 EAST THIRTIETH STREET.

ECTOPIC GESTATION.*

With a Report of 160 Cases from the Clinic of Dr. Joseph Price.

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There are several reasons which invite the choice of this subject. In the first place a considerable experience permits me to write a practical paper. There is a childlike humanity in surgery which crops out of us irrespective of human inclination and we find ourselves fond of that subject which has been full of victories.

The clinical history of extrauterine gestation is of such infinite value toward the recognition of the condition, that it becomes the urgent duty of the general practitioner to diagnose the malady. Again, the early and pitiable end of a promising young life is too often the penalty of delay in this trivial and misplaced conception.

Although I have little hope of calling your attention to anything new on the subject, yet a review

of a vital subject prompts renewed investigation and encourages protective efforts.

All maladies which have sufficient power to take life quickly, must be placed on the minute list, and we should be proportionately prepared to recognize and deal with such emergency. Surgically we place ectopic gestation on a par with all perforated lesions of the abdominal viscera. As a beginner in the specialty I have the most profound apprehension regarding the tardy views of operators who are applying old views and lazy surgery to rapidly fatal conditions. In a number of acute subjects the literature of the last two years has been a regression of progress. The attempts to apply surgical lethargy to active pathological conditions without in any way safeguarding the patient, has been murderous and murderous without reason. When one reads some of the literature of our day on tubal gestation in reference to the fatality of the condition, it is hard to conceive what has been the mental picture of the operator. If the investigators will but read the early post mortem history of the condition, they will find their answer with a vengeance. Nothing could be more distressing than a review of the early history of extrauterine gestation with its frightful maternal mortality. How hundreds of mothers perished from hemorrhage or peritonitis and how nearly every abdominal organ was perforated by this vicious conception. Compare the practically nil mortality of to-day with this fatal picture of a few years ago. Can you see any sane reason we should take the first step toward the age of quiescent surgery?

Mr. Tait was one of the earliest operators to call attention to the probable true aetiology of the condition. He was strongly impressed with the fact that salpingitis was largely the cause of tubal gestation. His views even to the present day have not been successfully disputed. There is little doubt but what some pathological condition or malformation of the tube is the true aetiology of the lesion. Although Mr. Tait was not of the opinion that fertilization of the ovum took place in the tube, he was forcible in his views that all forms of ectopic gestation were primarily tubal and that the other varieties were incident to rupture of the tubal form and were secondary in their locations. It is easy to reconcile most any form of ectopic gestation to Mr. Tait's views, with the probable exception of the ovarian variety which must be looked upon as the greatest rarity.

I have seen in two instances conditions which might have been taken for an ovarian ectopic gestation. The ovary was in these two cases practically in the grasp of the ectopic tube. The fimbriated extremity of the tube was adherent to the ovary and the ectopic clot being as it were pushed out or extruded onto the surface of the ovary. It would seem possible if I had seen these two cases a little later the tubal abortion might have been complete and I would have found the clot adherent to the ovary and the tube free from the mass without any sign of rupture. Of course close observation would have revealed the true nature of the condition, as the mass would not have had the ovarian tunic as its cover or the Graffian follicles to further identify it and therefore not truly an ovarian gestation.

*Read before the Gloucester County (N. J.) Medical Society, March 18, 1909.

In over twenty per cent. of our cases we were able to demonstrate some pathological condition of the nongravid tube and it would be only fair to assume that the ectopic tube had been a pathological one in a much larger per cent. of the cases, therefore we are much in accord with the early views of Mr. Tait.

We have had six patients with a pus tube on one side and an ectopic gestation on the other. I operated upon a patient who had a large abscess occupying the uterine two thirds of the tube with an ectopic mass in the outer third of the same tube. There was an angry salpingitis in the other tube but the same was patulous. The spermatozoa must have passed through the patulous tube and fertilized the ovum in the opposite tube as the abscess had completely stenosed the uterine end of the ectopic tube.

The pathology of extrauterine gestation is extremely interesting. The viscous form of pregnancy demonstrates to us that in a locality without any natural faculty for nutrition of the child, yet the embryo in a great number of cases lives to maturity and is often as well nourished as in the normal conception. The abdominal cavity affords heat and moisture and the placenta gets its nourishment from most any of the lower abdominal viscera or parietes.

The physiological cycle of the condition becomes more plausible, when we know there is no direct continuity between the bloodvessels of the mother and child in a normal conception and a like condition can be demonstrated in the ectopic gestation. The fetus grows to maturity by the end of nine months in this viscous gestation, and at the end of the normal period of conception, the uterus goes into an unavailing labor. This is an interesting fact and rather proves that the child in utero of a normal conception is not the determining cause of labor. The early writers on this subject call attention to this ineffectual labor of ectopic gestation and refer to the regularity with which this false labor occurs at the end of nine months, and that the viability of the child was of short duration after the normal period of gestation. The similarity as to the development of the child whether extrauterine or intrauterine, is striking—while the maternal effect of the two conditions is even more strikingly different.

Contrast the happy mother with the physiological pregnancy and the wild, nervous, pain ridden one of ectopic; can any contrast between physiology and pathology be more marked? The severe and agonizing pain from which the patient with ectopic gestation suffers can scarcely be accounted for by hemorrhage, rupture of the sac, or peritonitis. Ten of our patients were operated upon before there had been any sign of rupture of the tube. There was no stain of blood in the peritoneal cavity nor were there any adhesions to indicate peritonitis. Yet all of these patients had suffered excruciating pain. I operated upon a patient this week who would not permit me to make a bimanual examination on account of severe pain. The diagnosis being made from clinical history. This patient had an ectopic clot in an unruptured tube without adhesions.

It would seem that the most plausible solution for the extreme paroxysms of pain would be pressure, or unphysiological distention of the pregnant tube. The tube has not the inherent power to take on that nutritive physiological hypertrophy which is the normal faculty of the uterus. Therefore the distention and pressure may be looked upon as a trauma to sensitive organs.

The symptomatology and diagnosis of the condition are most important.

The clinical history is simply invaluable. In my gynecological experience at the Philadelphia Dispensary, I have more often been at error in my diagnosis of ectopic gestation than in any other condition. This, I believe, is due to the fact that in any large dispensary we have no time to go into details with the clinical history; and again the class of patients are not intelligent, and it is therefore hard to get an accurate history. From a review of our cases it would be hard to say that any age of the child bearing woman is especially disposed to ectopic gestation.

The colored race seems to be comparatively free from this condition—four of our 169 patients were colored. This is not consistent from an ætiological standpoint with what we would expect, as salpingitis is very common among the colored race.

Inaptitude to conception and previous confinement, followed by tardy convalescence, is often the history of the patient with ectopic gestation, and refers strongly to some inflammatory condition of the uterine appendages, as an ætiological factor of a tubal pregnancy. Mental disquietude and nervous shock seem to be a predisposing cause. Several cases of ectopic gestation have been reported in which the patient has been sentenced to imprisonment. One of our patients had been told by her family physician that she could never conceive. After suffering great mental distress for several months on account of her great desire to become pregnant, we operated upon her for extrauterine gestation.

The symptoms as a rule are well marked. The patient gives a history of a delayed period, or absence of one or more periods or possibly the menstrual flow has lasted for one day instead of four or five. If the patient has previously been confined, she feels that she is pregnant but unlike her former conceptions. There is nearly always a history of dark, bloody discharges which as a rule contains small pieces of decidua or entire decidual cast of the uterus may be discharged. Of course if this decidual membrane can be identified and abortion excluded, the diagnosis is quite certain. Pain is a most valuable subjective symptom, such as sudden agonizing pain which often causes the patient to faint. These paroxysms of pain occur at intervals of hours or days, and the patient will often volunteer the statement that she has never experienced such torture before. Dr. Price, whose diagnostic ability in this condition is second to none, lays great stress on these typical pains and was the first author to call attention to the peculiar mental aberration of the patient with ectopic gestation. If the patient's pallor indicates internal hemorrhage, certainly we would not ask for a more classical picture. I hesitate to mention the blanched patient as

a sign, as it is not necessary to wait until the patient is pulseless ere we make the diagnosis. However, unfortunately, in a good number of cases the internal hæmorrhage is so profuse that we find a pulseless patient at the first attack of pain.

The discoloration of the vaginal mucous membrane and enlargement of the breast, with possibly some secretion of milk, may be looked for as confirmatory signs.

On bimanual examination there is some softening of the cervical tissue, the os slightly dilated, and the uterus somewhat enlarged. I have not found the enlargement of the uterus a very conspicuous sign, not as much as the textbooks teach. The very markedly tender and sensitive uterus, from pelvic examination, is my most reliable sign. In no pathological condition of the pelvic viscera will you find the uterus so sensitive. The least pressure by the examining finger, will make the patient cry out from pain.

Pressure upon acute pus tubes or inflammatory cyst will not elicit nearly the distress which is produced by pressure upon the uterus in ectopic pregnancy. Pressure upon the ectopic mass is not accompanied by as severe pain as when the uterus is palpated.

There is always well marked tenderness in the lower half of the abdomen.

Dr. Price is fond of calling attention to a peculiar central distention of the lower abdomen. We feel that this distention is a very valuable sign and seems to be present irrespective of any marked peritonitis incident to the ectopic gestation. We must have some other ætiological factor producing this peculiar central distention as we have seen it in those cases where there has been no rupture or evidence of peritonitis. A possible solution will be, a partial intestinal paresis due to traumatic influence of the ectopic mass.

The lateral boggy or doughy mass which is supposed to be typical of extrauterine pregnancy would seem to me to depend very much as to whether there had been any rupture of the sac. If there has been no rupture of the sac or extravasation of the clot, I doubt if the mass can be easily differentiated from ovarian abscess or inflammatory cyst. The non resilient boggy mass would rather indicate previous rupture of the sac and extravasation of the clot.

I do not agree with the operators who question the possibility of a diagnosis of extrauterine pregnancy, prior to rupture of the tube. In the ten cases I operated upon where there had been no sign of rupture, the diagnosis was made in each case, having given strong emphasis on the clinical history of patient.

Dr. McCalla reports in the March number of the *Journal of Surgery, Gynecology, and Obstetrics*, an interesting case of bilateral tubal pregnancy. Dr. McCalla had examined the patient eight years previously and diagnosed double pyosalpinx. A very nice point comes up for discussion, as to whether the patient did not have the double ectopic gestation eight years prior to operation when the doctor first discovered the supposed double pyosalpinx. Could the patient have become pregnant with double pyosalpinx and if the early recognized condi-

tion had been double tubal also? Did the operator not have had greatest difficulty in breaking adhesions to deliver the tube, which he says in his case, on one side, was done with ease? It is possible for the embryo to remain in preservation at most any stage of development for a great number of years. A number of instances have been reported where the fetus has remained in preservation for a period of over twenty years.

I do not advocate puncture of the vaginal vault for purpose of diagnosis. This procedure necessitates an anæsthetic, the patient is subjected to an operation for diagnostic purposes when there is always sufficient evidence of pelvic trouble, to require surgical invention. The treatment of extrauterine pregnancy is purely surgical at the earliest hour. I will exclude any discussion of surgical treatment of this condition, after the period of viability of the child, as such at this era is rarely seen.

Dr. Price has operated upon two patients with ectopic gestation, with the fetus at viable age. The first case on March 30, 1887, period of gestation, seven and one-half months. The child lived four hours. The second case was operated in by Dr. Mordici and Dr. Joseph Price on October 23, 1892, period of gestation, ten months. The child is still living and in perfect health. These two cases occurred prior to my association with Dr. Price.

I know of no subject in surgery where diagnosis and early operative intervention are more closely correlative. We feel that in any of these treacherous conditions where symptoms or signs do not always bespeak the extent, or impending danger of the pathological condition, the earliest operation is our only logical recourse. Mr. Tait, in 1883, placed ectopic gestations on the early operative list, and he thus became the benefactor of thousands of lives.

How fortunate and how magnificent it is that truly great men of our profession are contented with the great good they have been to humanity. O how the great heroes of our profession have always been listless to public flattery. The newspaper notoriety of the present day is robbing our profession of much of its dignity.

If the treatment is other than first hour operation for extrauterine pregnancy, the operator assumes a responsibility which will often have for its burden a human life. I cannot see why anyone should assume such a vital responsibility when he must be aware of his inability in a good number of cases to cope with sudden and accidental hæmorrhage. One has little patience with an operator who is familiar with the pathology and tragedies of this condition, yet records his control by passive means, when the patient can bleed to death while he washes his hands. Attempts to be scientific through ineffectual efforts to diagnosticate and prognosticate the true nature and future of ectopic gestation and acute infectious lesions of the abdomen have been a most miserable failure.

Contrast the difference in mortality and results of two communities, one of which has had a strong teacher advocating early and complete work and the other an advocate of attempts at conservatism to diagnosticate differential stages in which to operate, or an advocate of partial removal of pathological conditions. In the first community the phy-

sicians always know when, how, and what is to be done, a low mortality follows such precision. In the second neighborhood the physicians who are attempting to be scientific by their recognition of differential stages of these acute pathological conditions, are unhappy because they never know when to act, or how much to do. This results in late pathological conditions with high mortality, or repeated operations with a great morbidity from partial removal of the pathological lesions.

It matters not whether the patient has had a rupture of the sac or there has been any previous indication of hæmorrhage, the fact remains there has been a condition diagnosed which has a potential tendency to hæmorrhage and therefore commands prophylactic surgery.

No operator has done more to put ectopic pregnancy on a sound surgical basis than Dr. Joseph Price. His enormous experience and low mortality permit him to dictate his views for early work and complete toilet through abdominal route. In the last eight years we have had one death in the 169 cases which constitute the material from which this paper is written. The surgery has always been done at the first possible hour. Ten patients were operated upon before there had been any hæmorrhage or rupture. Eight cases were suppurative conditions of the ectopic mass. In six cases there was an abscess in the opposite tube. Two patients were operated upon twice for ectopic gestation. The interval between the operation in one case was six years and the other four. One patient had an abscess of the tube between the ectopic mass and uterus. Tubal abortion was found in sixteen cases. To say that in any form of tubal gestation there is little danger of the patient bleeding to death, is erroneous. Tubal abortion is supposed to be accompanied with the least hæmorrhage, yet in four of our cases of this variety of ectopic gestation, the abdomen was distended with blood and the patient nearly pulseless. Several deaths have been reported from acute hæmorrhage through tubal abortion. Rupture of the inner third of the tube is accompanied with the greatest amount of bleeding. In ten of our cases rupture occurred at uterine third of the tube, the hæmorrhage was always excessive. Dr. Price is fond of saying that the outer two thirds of the tube belong to him and the inner third to the coroner. We have not waited for recovery from shock in any case.

One's inability to say as to whether there is active hæmorrhage or not, would prevent our waiting for such recovery. Again it is impossible to say just how much of the depressed condition of the patient is due to hæmorrhage. The intraabdominal clots may be profoundly shocking the patient and their removal is indicated. I have seen a number of patients brought on the operating table pulseless and taken away with fairly good pulse. In these cases if the shocked condition of the patient had been due to trauma from hæmorrhage or clots, evidently their removal or the anæsthetic had been a sedative to the nervous centres. It is impossible to say just how much of the fluid in the abdominal cavity is hæmorrhage. A good proportion of the supposed hæmorrhage may be serum incident to the irritation of the peritonæum by clots from the ex-

trauterine gestation. The condition of the pulse is not always a token of the amount of internal bleeding. I have seen a practically pulseless patient opened in whom very little evidence of hæmorrhage was found. This is just another evidence of how little we know of the true nature of things and a plea for early surgical work.

I have never seen any bad effect from removal of a great amount of hæmorrhage from the abdominal cavity on account of the release of pressure on the intraabdominal vessels. Flushing the abdomen with hot saline solution and leaving a good quantity in the cavity would counteract any such tendency to draw blood into the intraabdominal vessels.

Our surgery has always been done through the abdominal route with thorough toilet of the abdominal cavity. If there was much clot the flush toilet was used. In the eight suppurative cases an open treatment was used with a gauze drain.

Our limitations are so very human and our errors in this condition so fatal, let us be on the safe side and operate at the first hour.

1409 SPRUCE STREET.

RELAXATION OF THE SACROILIAC SYNCHONDROSIS: THIRD PAPER.*

By JOHN DUNLOP, M. D.,
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About three years ago I published my first paper on this subject with the result of my experience in about twenty-five cases; eighteen months ago I read a second paper before the American Orthopædic Association, and now to-night I bring to the attention of the society directly for the first time this most interesting subject, sacroiliac relaxation. I have thus far seen in private practice and in clinics about one hundred and ten cases, varying from the slightest pain in the lumbar region, to those completely prostrated, showing a more or less full picture of the condition.

I will now give some typical histories and examinations in order that you may see what type of cases is included, and in all probability you will be able to contrast the picture with some case in your own practice which has not yielded to the ordinary treatment of similar symptoms.

CASE I.—The first case is a man, forty years of age, married, born in Hungary, having come to this country when a young man. For the past nine years he has worked in the Washington Navy Yard, and has always been remarkably healthy, accustomed to a great deal of out of door exercise, especially walking. His previous history was practically negative, excepting, "some back trouble" six or eight years ago, exactly similar to the present, which he says came from a strain in lifting. This condition lasted, he thinks, about a week, during which time he was treated with internal medications and chloroform liniment. From 1902 until the 17th of October, 1908, he was entirely free from any back pain. On that day he sustained an injury to the lower part of his back while on duty. A part of his work consisted in having the charge of certain drawers of tools, and while in the act of stooping and opening one of these heavy drawers he suddenly felt something give way in the lower part of his back. Immediately there was a sharp pain, and in rising to a

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standing position he felt a severe cramp in his back which lasted some minutes. That evening the pain became most severe, and on attempting to rise in the morning he was taken with "a stitch in the back." He remained at home for four days, resting, taking medicine, and using liniment upon the advice of his family physician. His resulting improvement induced him to return to work for a week, but during this time he suffered a great deal with backache and pain down his legs, so that he had to stop again.

At this time the pain was on the left side of the back and extended around to the left groin, the pain down the right thigh to knee being very severe, especially on the front of thigh where there was a numb sensation.

This condition continuing for several weeks and no improvement being felt, massage was tried for two weeks, but as this also failed to give relief, he decided that he wanted other advice and went to the Johns Hopkins Hospital, whence he was referred to me. He came in leaning heavily on a cane, appearing to be fairly well nourished, at middle age, somewhat anæmic and of well developed musculature. He showed a marked left deviation of the spine from the sacral region up (said he stood that way to relieve pain but could not voluntarily correct attitude). There was very little droop to the shoulders, marked flattening of the lumbar curve, the lumbar muscles being quite prominent, especially the right; sacral region prominent; back motions greatly restricted, the right lateral movements being most painful; leg lifting in the prone position painful, more marked on the right side; motion obtainable in both sacroiliac joints, the right being a little more distinct.

Adhesive plaster strapping was applied to cause fixation of the sacroiliac joints, giving immediate partial relief. All medicines were discontinued and plenty of good food and fresh air advised. Two days later he came into the office standing quite erect, having walked from his home, a distance of eleven blocks. He was greatly improved in every respect; walking comparatively comfortable; appetite was very much improved; sleeping was much better. I should have said that previous to his first visit he had slept very poorly and that turning in bed had been painful. The strapping for fixation was left in place and an apparatus of a permanent character applied.

After five days he returned, saying that the only remaining trouble was a slight pain down the right leg after standing some time. I removed the adhesive straps and kept him at home in the fresh air for two weeks, when he returned to work, wearing the apparatus, which will be necessary for some months to come.

CASE II.—The second case is of great interest because of the patient's youth. It is that of a girl, six years and four months old, and so far as I know the youngest case on record. For more than a year she had been sleeping very poorly, waking up a dozen or more times in the night, and as the mother said, the child would complain in the morning of feeling as tired as though she had not been to bed at all. She had been seen by physicians who were unable to account for her restlessness "unless it were due to teething." Finally the child complained of backache, and in describing it put her hand directly over the sacral region. The father being a physician, and having seen some of these cases, made the diagnosis and put adhesive strapping on to support the sacroiliac joints. This relieved the symptoms, and while the straps were on she slept perfectly.

The previous history is of great interest. The general health had been excellent up to a little over a year ago, when she began to awaken constantly at night and became quite fretful. About this time she began to use roller skates and had frequent falls; she had also fallen downstairs. When I saw her the general condition was excellent, the back showing no curvature of the spine, but a slightly flattened appearance with much prominence of the lumbar muscles. All motions of the back were free. Motion in both sacroiliac joints was made out, quite free on the right side and easy to obtain. A webbing brace was made to be worn day and night. One week later the mother reported that she rarely awakened more than once in the night and that she could see improvement in every way. The pain in the back has gradually disappeared, and now she never complains.

CASE III.—The third case is that of a single woman, about fifty years of age. All of her life she has been in

poor health, quite nervous, has always had severe headaches and could never lie down without being in bed." For five years she was confined to the house, with the exception of being carried down each day to a carriage and taken for a drive. There was no history of trauma, but when in the early twenties she was operated upon, having a small growth removed from the neighborhood of the sacroiliac joint. She was then well and began to get about a little more. However, she was still extremely nervous and had attacks of pain that would confine her to bed for weeks and months at a time. At these times there were terrific headaches and complete prostration.

About three years ago she began to have sciatica, and at all subsequent attacks the sciatica accompanied the former picture of headache, backache, and nervous chills. This she thought was rheumatism. For some years she had been in an office and her desk was always arranged so she could stand or sit high.

Last spring she had three bad attacks each lasting from three weeks to a month with an interval of but two weeks; I saw her in the third. At this time she was extremely nervous, quite anæmic, and had been unable to sleep without sedatives for several months. Her general condition I thought about as bad as possible; she was suffering with headaches and severe sciatica, the pain extending down both legs into the feet. On examination there was a decided list to her spine, the normal curves were almost obliterated, giving a very flat appearance; left lumbar muscle stood out in marked contrast to the right; all of the spinal movements were restricted, but particularly the right lateral bending; left leg lifting with knee straight, and abduction of the left leg produced severe pain in the left sacroiliac joint. The examination of the feet showed complete flattening with weight bearing, but without weight a medium height to the arches. Palpation along the course of the sciatic nerve revealed no point of tenderness. There was very decided flabbiness of the entire musculature.

At first she was given complete rest with support in bed, ordered to the country and to spend most of the time in the open air. I stopped all medication except an occasional laxative. Previously she had taken great quantities of drugs, including almost every known sedative. Up to the present she has gained nine pounds, has practically no backache, sleeps fairly well, though waking at times with cramps in her legs.

I gave these few cases to draw attention to the subject, showing in a general way the class of cases which this condition embraces. In a way, my paper will contain little that is new, but on the other hand I feel that the entire subject is rather new to most of us and that a complete presentation at this time is most pertinent.

As is well known it has been only about five years since the entity of this condition was recognized, and I fear a thorough understanding is not yet prevalent. It is with this in mind that I present the subject as fully as possible.

We have been taught to believe that there was no motion at the sacroiliac joint, and one author goes so far as to say: "It is quite clear from the nature of the osseous surfaces, from the wedge shape of the sacrum, and the manner in which it is locked between the hip bones, as well as from the amphiarthroidal character of the articulations, that there can be no movement at the sacroiliac joint. While the joint serves the useful purpose of breaking shocks the cartilage is too thin and too firmly fixed to the bones to allow even of appreciable yielding, such as occurs upon the intervertebral discs."

Sir Frederick Treves in his *Applied Anatomy* states that "normally there is no movement at this joint, but when the ligaments are softened by disease, and effusion occurs between bones, some movement may be demonstrated."

The work done by Dr. Dwight and Dr. Goldthwait, at the Harvard Medical School, at the beginning of Dr. Goldthwait's work on this subject, has done much to enlighten us. The following is an abstract from his first paper on the subject: "The large amount of clinical and anatomical study which has been carried on in connection with this subject during the past two years makes it quite plain that the pelvic articulations, especially the sacroiliac synchondroses, are by no means as stable as has been supposed, and that in man and woman under normal conditions definite motion exists." It was found during these experiments carried on in the anatomical laboratory and autopsy room, that very definite motion was present in all but one case examined, and that the articulations were true joints containing all of the common joint structures.

Dr. Goldthwait's thorough review of the obstetrical literature shows that relaxation of the sacroiliac synchondroses was well recognized by some authors as a not infrequent accompaniment of pregnancy and parturition, but that such a condition existed in man, woman and child, at all ages, and in all walks of life was, I believe, not generally known.

Because of the conformation of the pelvic articulations motions are possible in certain directions only. Physiologically these motions tend to increase or decrease the pelvic diameters, as in child birth, the motions being about an axis through the lower portion of the sacroiliac articulations, or about the middle of the sacrum. The articulations are of such a character that their stability depends almost entirely upon the dense ligaments that bind them in place, therefore any condition of the system which would render these ligaments less dense or which would destroy their continuity, such as an injury where a tearing or stretching of the ligaments took place, would allow motion at the joint.

The aetiological factors are always interesting. If the history is carefully gone into I believe we can always find some cause to which the condition is to be contributed. In my experience, injury has played a prominent part, and strangely enough, most of these injuries have been of such a character as to direct attention immediately to this portion of the anatomy. For instance, several have dated their symptoms to falls from hammocks where the entire jar was directed to the back of the pelvis. Another very prominent factor has been directly attributable to the lifting of heavy objects. The patients in describing the injury, will say they have felt something give, or have had sharp pain in the lower part of the back. A few of my cases have definitely developed during pregnancy and childbirth, and in a few there has been nothing more specific than a general relaxed condition, which may or may not have followed some continued illness.

I have made the following partial classification:

1. Physiological: under this head will fall, a pregnancy, in which condition the entire pelvic region is more copiously supplied with blood, and the protuberant abdomen, due to carrying the fetus, causes a chronic strain on the ligaments which are

being prepared for the stretching at labor; b. parturition, in this state the ligaments are always stretched, and probably often torn, more especially in the elderly primipara where the soft tissues are always less flexible; c. menstruation, at this time, as in pregnancy, the general blood supply to the pelvic region is increased, which is the probable cause of the softening of the ligaments. In a number of my cases the symptoms were always exaggerated during the menstrual period, and it is this class of cases especially which I think would be of great interest to the gynecologist; d. general lack of tone, under this heading come those cases where the ligamentous and muscular structures of the body generally are in such a condition as to become more easily stretched or strained when slight forces are brought to bear. Usually, the feet are most affected, as the greatest strain naturally is put upon the ligaments holding the arches of the feet in position. So also the ligaments holding the sacroiliac joints become more stretched and allow the sacrum to assume an abnormal position, or position of strain. This class of cases is a very definite one, and the combination of the feet and back symptoms is almost constant. The condition of the feet is very distinctive, as in the position of rest without weight bearing the arches of the feet are well preserved, but as soon as the standing position is taken the feet become absolutely flattened. In such cases the treatment of the feet is as important as that of the sacroiliac joints, since the faulty position of weight bearing causes a constant strain upon the lumbar region.

II. In the second general grouping are those cases due to trauma, this I divide under two sub-heads of, a, acute, and b, chronic.

Under the heading acute come: 1, Direct blows to the sacral region of the back; 2, twisting of the back, in falls or sudden wrenching; 3, straining of the back by lifting heavy objects; 4, obliteration of the lumbar curve in prolonged anaesthesia.

We have all had experience, no doubt, with severe backache following operations, and I believe if the normal lumbar curve was supported by a small pillow during anaesthesia, we should very often prevent this distressing symptom.

b, Chronic: The chronic processes would be those where a more or less steady strain is produced. A partial classification would be: 1, Relaxation of the normal lumbar curve of the spine due to long recumbency, i. e., typhoid fever or fractures; 2, body malformations causing prominent pendulous abdomina such as obesity and many of the large abdominal tumors, i. e., fibromata, myomata, and ovarian cysts; 3, faulty methods of dress, such as "straight front" corsets, where there is a tendency to press the anterior superior spine forward and in, and incorrect shoes, high French heels for example, which cause a strain referred to the lumbar region; 4, occupations and attitudes which put a constant strain upon the lumbar region of the spine; 5, a class has been recently brought to my notice, i. e., the strain to which the joint is subjected in the pathological condition of the hips, knees and feet where the weight of the body is unevenly distributed between the two legs, as in hip

disease, fracture of the neck of the femur, still knees and ankles, scoliosis and uneven length of the legs. We can see from this group what an immensely wide field this subject covers.

In all of these subheads the injury to the joint is a strain or sprain of the joint ligaments. By strain, I mean merely a stretching of the ligaments, while sprain would imply a definite tearing of the ligamentous tissue.

There are a number of diseased conditions of the sacroiliac joints which are similar to the symptoms of relaxation, such as infectious, atropic and hypertrophic arthritis, and it is only after the use of all the means at our disposal, especially the x ray, that we can differentiate them.

General Symptoms: Although the complete picture may be very different, due to the prominence of certain features, yet, when we have analyzed the cases sufficiently, there are certain symptoms which vary little and are quite constant. Backache is probably the most common, or it may be termed "lumbago" or "rheumatism." In describing it, the patient almost invariably places the hand over the sacral region and often says that the pain is to one side or the other, and may definitely point out the sacroiliac articulation. This pain may be constant, sometimes as a dull ache, but most often it follows increased activity or any movement which would put a great amount of strain on the sacroiliac ligaments. Some of the most noticeable have been stooping, going up and down stairs, rising from a sitting posture and turning in bed. The mildest cases have been those with no other symptom than backache or a "catch in the back," during such exercises as horse back riding, tennis, golf and billiards. As the condition of relaxation becomes more pronounced the severity of the symptoms increases until in some cases prostration has been so complete that standing was impossible.

The next most prominent symptoms are the referred pains, almost always present in one or more forms. In the first place, the faulty position most of these cases take to relieve as far as possible the strain on the pelvic articulations causes a strain on the rest of the back, and backache high up, often between the shoulders, and basal headache is not infrequent. When these cases are properly cared for the symptoms disappear to reappear when the treatment is discontinued too soon. Probably the most frequent accompanying symptoms or set of symptoms, are those definitely following the course of the nerve supply from the lumbar sacral cord or the nerves passing close along with it. These nerve roots in entering the pelvis pass directly over the sacroiliac articulations and any increase in motion or thickening of the articulations at this point causes an irritation. As the result of this we have the most distressing symptom, sciatica.

I have been impressed by the variety of referred pain, such as pains through the gluteal region, the nerve supply of which is also transmitted through the lumbar sacral cord, as the superior and inferior gluteal nerves and the small sciatic nerve. One of the referred pains, which has so often been the only one present, was confined to the ischial tuberosity. This area is supplied by the inferior pudendal, a branch of the small sciatic.

The irritation of the obturator nerve and the ac-

cessory obturator would account for the pain referred to the hip joint, and a symptom which has been most prominent in several of my cases, a radiating pain extending inside of the lower abdomen to the groin. This, when situated on the right side, has in many cases simulated a chronic appendicitis, only located rather lower than the pain we would expect to find in such a condition. I have seen it present on both sides, or on either the right or left side. In trying to account for this symptom I have gone over the nerve supply thoroughly, and find that the accessory obturator which exists, according to Quain, in one out of every three or four bodies, would readily account for it. This nerve passes over the sacroiliac joint and around the belly of the iliacus muscle and into the thigh over the ramus of the pubis; hence any irritation of this nerve would give such pains in the region referred to.

Physical Signs: It is remarkable how constant the objective symptoms are when we know the clinical picture to be so varied. Some we find in practically all of the cases, while others depend on their severity. In the most severe cases, standing without support is almost impossible and any form of activity which would tend to produce motion in the sacroiliac articulations would be very carefully guarded. This gives rise at times to peculiar attitudes, for instance, stooping and getting up from a sitting position are usually made with the hand on the hip. Variations in the normal contour of the spine are very common, obliteration of the lumbar curve especially. In a large majority of my cases, lateral curvature has been present, either as a single or double curve, but very oddly the double curve has not always been the same when the sacroiliac joint of the same side has been affected. I do not know how to account for this, unless the curvature was present previous to the pelvic joint condition. We should expect the concavity on the affected side, due the persistent pull of the lumbar muscles in spasm.

In my entire series there has not been a case without spasm of the lumbar muscles, and usually the muscle stands out prominently. Naturally the spasm is always on the side of the relaxation, and, if both joints are involved, the spasm will be bilateral.

The normal contour of the sacral region may be changed. Anterior bending without flexion of the knees is restricted in the lumbar region unless the case be an extremely mild one. Lateral bending away from the affected side is painful, while bending toward the side of the lesion will be much more free.

Other means of producing motion in the joint with its accompanying pain are leg-lifting in the prone position with the knee extended, and abduction of the hips when flexed.

In many cases an abnormal amount of motion can be made out, but this is difficult at times, and I believe less importance should be given to it. Pressure over the joint usually gives pain.

Differential Diagnosis: Conditions from which we have to distinguish these simple relaxation cases will be: 1. The diseases of the synchondrosis. 2. Hypertrophic arthritis of the spine and hips. 3. Infections of the lumbar region of the spine. 4. Injuries to the lower spine, such as sprains or frac-

tures. 5. The frequency with which these cases have been operated upon for pelvic displacements leads me to include the pelvic disorders.

The x ray is of great value, and often the only means we have of differentiating some of these conditions, while in those cases where there is a question of pelvic disorder, a pelvic examination by one who is thoroughly familiar with the anatomy, is indispensable.

Prognosis: In the mild cases complete relief of the symptoms may be expected after a few weeks treatment, whereas in the more severe cases or where there is a dislocation, many months may be necessary; but in every case partial relief should be obtained immediately on institution of treatment.

The treatment consists of fixation of the pelvic articulations. For diagnostic purposes and temporary relief, I have used adhesive plaster strapping, but have never been able to get any permanent results from it as it excoriates if left on for any length of time, and stretches so that the joints are not held sufficiently to allow proper repair of the ligaments. Frequently I have found that the only means of attaining the proper amount of fixation is with plaster of Paris spica or jacket. All severe cases require as nearly complete rest as it is possible to obtain.

1309 CONNECTICUT AVENUE.

THE SURGICAL APPENDIX.

BY RALPH FRANCIS WARD, M. D.,
New York.

More has been written about the appendix vermiformis in its surgical and medical aspects, than has dignified any other organ of greater size in the human body. We are, therefore, because of our wide experience and thorough knowledge of the pathological changes to which this organ is prone, able to undertake the management and successful treatment of this mighty little offender.

While medical literature is replete with masterful handling of the diseases of the appendix, I essay to emphasize certain well trodden paths, and to mention some points which I have found of practical importance in my own operative experiences.

Inflammations of the appendix are surgical conditions. Not every case demands immediate operative interference, as for instance, the first attack of simple catarrhal inflammation, but if not operated on during the first attack, which is never a mistake, should have an "interval" operation at least within the period of one month. This obviates worry to the patient concerning subsequent attacks, and does not allow him to pass to that large class of neglected patients, many of whom we are called upon to operate upon, because of complications, and under circumstances which are not the best for the patient. Thus too frequently the surgeon is called upon to save the patient from imminent death, and to pull the family physician out of an embarrassing predicament. Osler says: "The general practitioner does well to remember—whether his leanings are toward the conservative or the radical methods of treatment—that the surgeon is often called too late, never too early."

ACUTE INFECTIVE APPENDICITIS.

This is the most important, most common, and most dangerous class of cases. It is caused by an extension of inflammation of the mucosa of the cæcum into that of the appendix, or to foreign bodies, concretions, traumatism, or to any other factor which causes a swelling of the mucosa to the point of strangulation within the thick outer walls of the appendix. Just as soon as strangulation takes place, the bacteria present are no longer held in check by the phagocytes, which do not reach the vulnerable point. The *Bacillus coli communis*, streptococcus, staphylococcus, *Bacillus typhosus*, or other organisms that may be present begin a rapid proliferation upon an unprotected and fertile field. Intraappendicial pressure rapidly rises and unless the accumulated matter finds its way through a redilated lumen into the cæcum (rare spontaneous resolution) or is removed surgically, proceeds to perforation with more or less gangrene and sloughing, producing either a localized abscess or a generalized peritonitis.

This class of cases demands an operation just as soon as the diagnosis is made. A large experience with these patients is required to appreciate the pathological changes which are going on. Not every one will have the classical picture. I recall a patient who complained of dull pain in the right iliac fossa, and experienced only moderate pain on deep pressure. Operation two hours later revealed a beginning perforation at the tip. Another complained of a sudden stabbing pain after eating lobster. There was pain on deep pressure without other signs. Operation about three hours later showed a pinpoint perforation at the tip over a concretion. A small amount of lymph was not disturbed more than necessary during the removal of the organ, the abdomen closed. Both patients made uneventful recoveries.

Surgical Treatment. The incision where abscess or general peritonitis does not exist or is not expected, in other words where I do not expect to drain, I use the "McBurney" or "gridiron" incision, and consider it ideal. The falling together of the muscles forms a solid abdominal wall, minimizing the chances of postoperative hernia.

The length of incision depends upon the thickness of the abdominal wall, and should be no longer than necessary to afford an unhampered field, but long enough to permit the rapid removal of the appendix without rupture or tearing. One and a half to three inches gives all the room that is usually required.

Having opened the peritonæum, the appendix is found, the mesoappendix is tied off with one ligature and cut from the appendix. The appendix is ligated at the base with catgut, a forceps placed distal to the ligature, and the amputation done between the two. The stump is thoroughly cauterized with the actual cautery or with carbolic and neutralized with alcohol, the free ends of the basal ligature cut, and the stump returned to the peritoneal cavity, to find its normal relations, leaving Nature to make her own peritoneal covering. The peritonæum is closed with a continuous suture of catgut. As the muscles fall together, one loose chromic gut suture holds each muscle in gentle approximation without the

least constriction. The skin is closed with interrupted sutures. Eight to twelve minutes is an abundance of time.

Before the days of anesthetics, the surgeons were noted for their accuracy and rapidity. Alas, to-day with our efficient means of administering anesthesia, many surgeons seem to have overlooked the great necessity for dexterity, and having allowed themselves to fall into slow habits, find it impossible to measure up to a great emergency. Also, that the shock is often greater from a prolonged anesthetic than from the actual operative work, is too frequently lost sight of. I regret to say that I have seen surgeons engrossed in handling everything in reach, and studying anatomy at the expense of the patient. One must not hesitate as to what course should be followed. To the experienced surgeon there is always just one course to follow, and no question about it. Nothing but what is absolutely necessary must be done and that with the least trauma, and completed in the shortest possible space of time required to do it exactly right. Nature will do the rest.

When abscess or generalized peritonitis exists I employ the "Deaver" incision, unless tumor formation indicates it elsewhere, when it should be direct to the peritonæum. The abscess is opened by blunt dissection with the tip of the index finger along the line of cleavage and all pockets rapidly opened, without otherwise breaking up the adhesions formed. The appendix is dissected from its bed by the finger and ligated in the depth of the wound without disturbing the position of the cæcum. If the appendix has sloughed off, it is removed and the stump is not sought. Nature has done the amputation. After gentle sponging and without irrigation or other cleansing, a gauze and rubber cigarette drain is inserted to the bottom of the abscess cavity. The sides of the incised wound are closed and sutured in layers to the drain. Refinement or prolongation of the operation may cause fatal termination.

The after treatment of drained cases consists in the removal of the drain in twenty-four hours, and the insertion of another, without washing or disturbing the parts. After the second day, the cavity is irrigated gently with saline, and the following day with half strength hydrogen peroxide, followed by saline. The drain is always carried to the bottom of the cavity. When all suppuration has stopped the wound is allowed to heal from the bottom by granulation.

In the moribund when a major operation and anæsthetic are contraindicated the patient may be saved by entering the abdomen with a small incision under local anæsthesia, and inserting a drain. This requires but a few seconds and gives an outlet to the peritoneal cavity. Later when the patient is stronger the appendix may be removed under light general anæsthesia, with excellent results. Washing with saline carries the bacteria to new areas which may not be fortified with lymph, causes trauma, makes the peritonæum more susceptible, produces shock, and furnishes additional surfaces for adhesions.

Appendicitis Obliterans—Involution of the Appendix—Fibroid Appendix.—This is the most usual form of chronic, nonsuppurative inflammation of this organ.

The normal structures give way to a formation of hyperplastic connective tissue which gradually in time replaces nearly all of the original structures. The irritation caused by the pressure of the contracting connective tissue around the sensory nerve filaments is the cause of pain over the appendix and in this region. Through the sympathetic fibres which are caught, are produced all manner of reflex disturbances affecting the gastrointestinal tract. These vary from the slightest intestinal dyspepsia, to the most obstinate intestinal derangements of secretion and excretion.

The real cause of these intestinal disturbances is not attributed to the appendix, unless one has had a chance to study a large number of cases of this class. An obstinate, progressive intestinal dyspepsia, with later loss of flesh, strength, and appetite, with gas continually present in the ascending colon, together with dull dragging in the right side, relieved somewhat by pressure, will be noticed in well developed cases. Patients of this class often suffer for many years, and go from one doctor to another without receiving surgical relief. I recently operated in a case of twenty-three years' standing. The appendix was a hard, solid, fibrous cord, much less than half its normal in diameter.

When operated on by one not thoroughly conversant with this type, and especially where gross changes are not very apparent, it may be left in the abdomen as a "perfectly normal appendix," the operator thinking he has made a wrong diagnosis. If, however, he should remove it "on general principles," most satisfactory relief of the preoperative symptoms will reward his work. If left in, the same symptoms will soon be looking him in the face just like the "drowned cat."

Appendectomy is the only treatment which will permanently relieve the patient from this degeneration of a degenerate organ. The operation is the same as that on an "interval" case, and the incision I use is the "gridiron."

Secondary Appendicitis.—This class is most frequently found with or following a right salpingitis, salpingoophoritis, acute or chronic oophoritis, or a tuberculous peritonitis. A direct involvement, causing concomitant surgical appendix, or adhesions and constricting bands, interfering with the blood and lymph supply, may cause subsequent inflammation of the appendix, of the acute suppurative or obliterative type.

Whenever the abdomen is opened for the relief of an inflammatory process in the neighborhood of this organ, it should be removed whether it appears to have shared in the inflammatory process or not.

When lymph is present on the peritonæum, it should not be removed, as it signifies the presence and activity of the phagocytes, which are capable of destroying the infective matter, with two exceptions, (1) overwhelming virulent organisms; and (2) subnormal production of phagocytes, from any cause. The appendix can be removed without hesitancy where there is production of lymph from an inflammation of an adjacent organ, while judgment must be exercised in its removal at the same time that other intraabdominal operations are being done for noninflammatory or quiescent conditions.

THE TREATMENT OF NEURASTHENIA.

BY MORRIS D. KELLER, M. D.,
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Clinical Assistant, Department of Medicine, Vanderbilt Clinic.

The treatment of neurasthenia, especially when it is to be applied to the poor either in private or dispensary practice, becomes a serious problem for the physician to handle. It is very easy to advise the well to do patient to take a rest cure at a sanatorium, or to make a temporary change in his occupation or to take a trip abroad or a vacation in the country; but the poor cannot afford to follow such advice. They find it inconvenient even to spend a few hours daily out of doors, because, on account of their poverty, the husband must be confined all day in his shop or office and the wife must be occupied at home with her daily washing and cooking and, usually, with the care of a number of children.

At a clinic or dispensary, these patients are further handicapped by conditions which are no fault of theirs. Hurried by the number of patients he must attend in a limited space of time, the physician cannot devote much time to each individual case. Deprived of a place of privacy, he cannot have a confidential talk with his patient. The various noises, the innumerable questions asked of him, the continual hurry, make the physician himself somewhat nervous and abrupt in his manner. The physician has to contend with all these unfavorable conditions, and in spite of them, with proper advice, many of these patients improve wonderfully.

The purpose of this paper is to outline a course of treatment for this class of patients such as can easily be conducted at a clinic or in private practice with little or no expense to the patient.

Before commencing to treat them, the physician must rid himself of the impression which is quite prevalent, that neurasthenics suffer from imaginary ills. It is true that they complain of pains far out of proportion to the severity of the illness, so as to make one believe that the pains are unreal; but as a matter of fact, these patients are ill—there is something that really pains or irritates them, but on account of their introspective tendency, they exaggerate all these symptoms. For the physician to assume that the complaints are only imaginary and on that account refuse to make a physical examination, to treat the patients in a cold, abrupt manner in the belief that to show these patients no sympathy will soon make them cease complaining, are mistakes too often made and which inspire a lack of confidence in the patient toward his physician. The first aim should be to gain the patient's confidence and the best way to do this is to interest oneself in the case in hand. The simple matter of taking a history makes the first favorable impression, for, although in taking such a record, a little more time is consumed, still a little more interest must necessarily be taken to elicit and write down the important symptoms.

After having completed the history, a physical examination of the patient should always be made, although the physician may feel certain that he will derive no further information. Such an examination inspires confidence. Ordinarily, a routine examination should be made; but the heart and lungs

(and sometimes the abdomen, when that is the seat of the complaint), should always be examined, no matter how rushed for time the physician may be. These patients often imagine that some organ is seriously affected, and to assure them that there is no heart nor lung trouble, nor any serious condition with any of their organs, does more to make them recover than any amount of medicine. Mental suggestion does enter a good deal into the treatment, and to reassure the patient constantly that he has no organic lesion, but will recover in a short time if he only follows faithfully the advice given, helps toward their recovery.

The treatment proper may be divided into hygienic, dietetic, and medicinal.

This class of patients is necessarily compelled, as already mentioned, to live an indoor existence, which, in the majority of the cases, is a great factor in the cause of the illness. The physician should therefore insist that the patient spend a few hours every pleasant day in the open air and that he should walk to and from his place of business. If the distance is too great, then he should at least walk a part of the distance—but walk he must, as this not only gives him the fresh air but also the best of exercise. The wife at home, should she be the patient, should leave her household duties for one or two hours during the afternoon, go out in the bright sunlight, walk and rest alternately, preferably in the parks, near the river, or wherever there is plenty of fresh air. This daily out of door recreation, is a true new creation for them. It is wonderful to see how soon they lose the dull, listless attitude, lose the indefinite pains and headaches, and commence to feel bright and hopeful.

A cold daily bath, on arising, is very beneficial for those that can stand it. But many cannot endure this rigid and frigid treatment, and furthermore, many have not the luxury of a private bathtub. In these cases, a cold pack or a cold douche (applied for about one minute at the outset and gradually increasing the duration) followed by vigorous friction, can be substituted with benefit. A towel dipped in cold water, held by the patient over the shoulder and squeezed out, or having this performed by another person, produces all the benefits of a spinal douche. A warm bath before retiring, will allay restlessness and benefit insomnia.

Almost all neurasthenics are constipated, and as this symptom is easily removed, at the same time benefiting the patient considerably, this should be attended to at the first visit. Laxatives may be given at first, but the objection to them is, that as soon as they are stopped, the constipation returns. For this reason, the patient must be instructed how to form a proper habit so that the bowels will move without medication. The patient should be advised to go to stool every morning, just after arising. A glass of cold water on an empty stomach aids peristalsis. They should go to stool whether they have any inclination to move their bowels or not and remain ten, fifteen, or even twenty minutes until there is a movement. A well known gynecologist informed me that many of his patients found that taking a shredded wheat biscuit and milk on arising, made them have a movement regularly. This procedure slowly but surely trains the intestines to

move daily without the aid of drugs. At the outset of the treatment, it may be of advantage to have the patient use a glycerin suppository, but this should be abandoned as soon as the first signs of voluntary evacuations are noticed.

Diet is an important question with these patients. Tea, coffee, and alcoholic drinks must be eliminated, as they tend to increase the nervousness of the patient. Tobacco must be restricted for the same reason. No specific diet can be mentioned, but each individual case must be treated along individual lines. As a general rule the patients need nourishing foods to build them up. Fried foods should be avoided as they tend to upset the stomach and also tend to constipate. Fruits that leave large residues may be allowed on account of their laxative effect.

The medicinal treatment consists mainly of sedatives and tonics. The Brown-Séquard mixture, according to the Vanderbilt Clinic formulary, is very effective in allaying the nervousness, sleeplessness, headache, etc. The following is the formula, for single dose:

R Potas. iodid.,	gr. v;
Potas. bromid.,	gr. x;
Ammon. bromid.,	aa gr. x;
Sod. bicarb.,	gr. iv;
Tinct. nucis vomice,	℥ vi;
Tinct. gentian co.,	℥ viii;
Aq. destillat., q. s.	ad. ℥i.

M.

A little suggestion when prescribing the above, as "This medicine will positively cure your headache to-night," or "You are going to sleep better, eat with better appetite, and feel better when you have finished this bottle," often works wonders. When it does not, it is then advisable to give in addition some form of valerian. A pill made of 1 grain each of quinine valerate, zinc valerate, and ammonium valerate will allay the nervous symptoms.

When the patient's bowels are regular, the nervousness abated, the headache and sleeplessness gone, it is then proper to begin tonic treatment, which must be kept up for eight or ten weeks or longer if necessary. The patient must be impressed with the importance of taking the tonic regularly for the specified length of time. Blood examination every two or three weeks to note the improvement should be made. Arsenic in the form of Fowler's solution or in tablets containing arsenous acid probably produces the best results. Strychnine (or nux vomica), quinine, and iron may be added, each separately or in combination with it. Several good tonics (formulæ from the Vanderbilt Clinic formulary) are given below:

R Ferri et quin. citr.,	gr. v;
Liquor potas. arsen.,	℥ iii;
Tinct. gentian co., q. s.	ad. ℥i.

M.

R Ferri pyrophos.,	gr. x;
Strychnine sulph.,	gr. 1/32;
Tinct. zingiberi,	℥ i;
Glycerini,	℥ v;
Aque destillat., q. s.	ad. ℥i.

M.

R (Starr's Tonic.)	
Ac. phosphor. dil.,	℥ viii;
Tinct. nucis vomice,	℥ iv;
Syrup. hypophos., q. s.	ad. ℥i;

M.

B Masse ferri carb. (Blaud).....	gr. v;
Hydrag. chlorid. corros.,	℥ i/32;
Strychnine sulph.,	gr. 1/60;
Ac. arsenos.,	℥ i;
M. Ft.: One pill.	

(These prescriptions are for single doses.)

When iron is prescribed, the physician should advise the patient about the care of the teeth. In females, it is best to advise the discontinuance of the iron preparations during the menstrual period.

This treatment is for neurasthenia in general. When this condition manifests itself in relation to some particular organ, as the stomach, intestines, sexual organs, etc., this treatment may suffice; but treatment applied to the special organ itself may benefit by suggestion. Stomach washings, colon irrigations, electricity, etc., may be necessary. But of the utmost importance is the patient's confidence in the physician. If for any reason there should be lack of confidence, the physician may as well give up his attempt to benefit that patient and, both, for his own and for the patient's sake, transfer the case to some one else.

65 EAST ONE HUNDRED AND FOURTEENTH STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXVII.—How do you treat supra-orbital neuralgia? (Closed June 15, 1909.)

LXXXVIII.—How do you treat epistaxis? (Answers due not later than July 15, 1909.)

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Answers due not later than August 16, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVI has been awarded to Dr. Charles Nathan Haskell, of Bridgeport, Conn., whose article appeared on page 1311 of volume LXXXIX.

PRIZE QUESTION LXXXVI.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOUS DISEASE.

(Continued from page 26.)

Dr. M. B. Kirkpatrick, of Trenton, N. J., writes:

The early diagnosis of pulmonary tuberculous disease is not a simple or easy task, but I believe a correct diagnosis can often be made after weighing the evidence obtained by the following means:

First, a source of possible contagion should be sought for in the patient's immediate family or

among his or her roommates, playmates, fellow workers, or business and social associates. Next, in the previous medical history of the patient the occurrence of respiratory diseases is significant, especially hæmoptysis or pleurisy.

The hæmoptysis here referred to may have been regarded as unimportant by the attending physician at the time of its occurrence, because of the absence of other appreciable signs of tuberculosis but, in view of the fact that ninety per cent. of such cases are followed later by demonstrable evidences of pulmonary tuberculosis, its diagnostic importance is very great. The occurrence of a pleurisy—especially of the serofibrinous variety is also suggestive of tuberculosis as at least fifty per cent. of tubercular cases give a history of a preceding attack of pleurisy. The personal history of the patient for the time immediately preceding his examination is the next aid in establishing the diagnosis. Unless due to an initial hæmoptysis above referred to his visit is probably due to the fact that he "feels tired all the time," "wants to sleep more than usual," "has not a good appetite," and "needs a tonic."

The first step in the physical examination is a careful study of the supraclavicular triangle. Here it is important to note a lowering in the upper border of the normal pulmonary resonance which occurs very early in an infiltration of the apex. It is also important to determine the tidal changes in the excursion of the apex, i. e., the difference in the height of lung resonance during full inspiration and full expiration. Any involvement of the apex will cause a proportionate lessening of the amount of tidal change.

The tuberculous involvement of the lung may begin as an infiltration or as a catarrhal condition. In the former case a radiogram gives important evidence, as even a slight variation in lung structure can be determined by the difference in shadow densities there is shown. By percussion also even before there is a change in note the pleximeter finger can often sense an increased resistance. In an early catarrhal tuberculosis, the radiogram offers no aid unless it be in a suspicious enlargement and density of the lymph nodes, while percussion is chiefly useful on tidal examination above mentioned. Auscultation, however, is of considerable value, as the catarrhal condition can sometimes be detected by an occasional râle heard after making the patient cough at the end of forced expiration. This symptom is more easily elicited in the early morning before the patient rises, especially if he has been made to sleep lying on the suspected side. Again by auscultation a slight prolongation in expiration is suggestive of tuberculosis even when no definite lesion can be located.

The pulse rate in the early stage of this disease often shows a marked acceleration toward night without any apparent cause, corresponding to a similar rise in temperature which is so characteristic of the later stages of tuberculosis.

The cutaneous and ocular reactions to tuberculin are very important aids in the early diagnosis and if present with some of the symptoms will usually establish the diagnosis. Increase in the size of the heart and lowering of blood pressure are said to be

of diagnostic importance and are therefore to be remembered in this connection.

To sum up: Suggestive facts in the family, social or previous medical history; a positive tuberculin reaction; abnormal shadow densities in a radiogram; slightly prolonged expiration; an unexplained evening acceleration of the pulse rate; lessening of the normal tidal excursion of the apex and lowering of the upper border of apical resonance; additional evidences occasionally obtainable by percussion and auscultation, all suggest a pulmonary tuberculous disease. The evidence thus obtained will often be sufficient to justify an early diagnosis of tuberculosis long before the cough, night sweats, fever, bacilli in the blood and sputum, and the evidences of extensive consolidation and cavity formation render the diagnosis easy, positive, and useless.

Dr. H. J. Achard, of Asheville, N. C., remarks:

The diagnosis of early pulmonary tuberculosis may be as difficult as the diagnosis of advanced disease is generally easy, and readily made from the evidences of a progressive destructive lung affection, the presence of tubercle bacilli in the sputum, the general constitutional signs of "consumption."

It is another matter in early tuberculous disease, in which a tuberculous area has not yet softened and, by breaking into a bronchus established a communication with the outer air, in short, in closed tuberculosis. In such a case the sputum, if any is expectorated, will not contain tubercle bacilli. The fatal notion that a sputum negative as to tubercle bacilli means no tuberculosis, is rapidly being eradicated from the minds of physicians, but still needs to be insisted upon. It is these early cases, where the sputum is innocent of tubercle bacilli in whom a positive diagnosis is of the highest importance, because of the comparatively far better chances of recovery under a proper régime. Given a patient who is run down, weak, and easily tired, perhaps recovering from typhoid fever or influenza or measles, and who coughs; he may or may not have a slight rise of temperature, either constantly or on exertion, or in the evening; he wants to know whether he has tuberculosis. In the light of the most recent literature, the simplest proceeding would seem to be to apply the conjunctival, or cutaneous, or the subcutaneous tuberculin test. But in about ninety-five per cent. of all adults the test will be positive. Has then the patient tuberculosis? Not necessarily. He will, no doubt, have a tuberculous focus, say in the bronchial or mesenteric glands, which accounts for the reaction; but if the infection is latent, we have no tuberculous disease, for disease is a process, not a condition. In such a case we must consider carefully all possible factors.

In examining a patient for early pulmonary tuberculosis a careful and detailed history, both family and personal, is at least as important for an opinion as is a physical examination. Regarding the family history we must attempt to elucidate these points, whether the parents or any near relations have had consumption at the time the patient was born; whether the parents were suffering from an-

other exhausting disease which might produce in the child a diminished resistance to infection; whether the mother has passed through many confinements in rapid succession; whether the parents were very young or very old at the time of the patient's birth, or whether the father was much older than the mother; finally, whether the patient was a fifth or later child or a twin, triplet, etc. All these points assist, according to Brehmer, in determining a predisposition to consumption, and may aid in diagnosis.

As to the personal history, we desire to know whether the patient was breast fed or bottle fed, because in the former case the nutrition was probably better, and in the latter, according to von Behring, a "food infection" from contaminated milk is probable, which at the time of puberty would develop into disease. We must also know whether the patient as a child was handled by, or lived with consumptives, in order to determine a possible contact infection; we want to know whether he has been a habitually "poor eater" and thus is in an insufficient state of nutrition and resistance. Among the diseases of childhood, measles and whooping cough especially predispose to tuberculous infection, not only on account of their catarrhal symptoms, but also and especially on account of the involvement of the lymph glands which then become more favorable points of localization for tubercle bacilli.

Irregular habits; occupation in close, crowded and ill ventilated rooms, especially if dusty; overwork; confinement; worry; insufficient food, in short everything which tends to diminish the individual's vitality tends to create a predisposition for tuberculosis.

Among the early symptoms of pulmonary tuberculosis we have already mentioned that the patient may cough, be easily fatigued, has lost weight. If night sweats are present, they are important. Nervous dyspepsia so called, due to the action of tuberculous toxins, and to superacidity, a capricious appetite, diarrhoea, or constipation or both alternating, without appreciable cause, are suspicious. A history of hæmoptysis, even in the absence of distinct physical signs is an evidence of old lesions which may, however, be small and so located as to be difficult of detection. Such hæmoptysis is always a definite symptom of pulmonary tuberculosis, provided it is properly distinguished from hæmorrhage from other sources than the lungs. Dr. Garvin, in Ray Brook, has seen it as an "initial" symptom in nineteen per cent. of cases; Nagel, in the public sanatorium Cottbus, in 16.7 per cent. of female consumptives; of 150 "early" cases treated in the Henry Phipps Institute during the first two years of its existence, it occurred as an initial symptom in sixteen per cent.

On inspection we may find the patient, who, by the way, should always be stripped to the waist, slender, with flat thorax and prominent scapulae, the supraclavicular and infraclavicular fossæ depressed; the facies may be anxious, pale, easily flushed; the eyes bright, one pupil perhaps larger than the other; through the fine white skin the subcutaneous veins are easily distinguished; in women one mamma may be much smaller; the areola also being smaller than on the other side; or the reverse

of this classical habitus phthisicus may obtain, with a short, squat figure, coarse skin, the dull facies with thick lips and listless expression may present the lymphatic type. In either case we look for enlarged glands, both cervical and axillary. A pallor of pharynx and larynx is frequently noted; on the gums there may be a livid red line.

Physical examination of the lungs, by auscultation and percussion, as well as by the x ray, shows the presence of structural changes which in tuberculosis occur earliest in the apex, and most frequently on the right side, according to most authors, although Louis, for instance, had found the reverse to be true. This physical examination cannot determine the qualitative diagnosis of these changes if they amount only to infiltration and have not yet progressed to softening and cavity formation. Most authors agree, however, that low, rough, inspiratory murmurs usually over one apex only, with feeble, jerky respiration, are earlier signs than those determined by percussion and are diagnostic for apex tuberculosis (Knopf. Grancher. Turban). If catarrhal changes, signs of infiltration, etc., are heard in a patient in whom the history and inspection has caused us to suspect tuberculosis, our diagnosis will be practically certain.

We have already said that a positive reaction to any one of the tuberculin tests proves the existence of a tuberculous infection, but not necessarily of a tuberculous disease. A positive reaction on the conjunctiva, with a suspicious history and definite lung signs permits a definite diagnosis of active tuberculosis, which can, however, be made, in many cases without the tuberculin test. According to Wolff-Eisner, the conjunctival reaction is very marked in early cases with good resistance, and his assertion has recently been confirmed by several American authors. The agglutination test after Arloing and Courmont is frequently found positive in healthy persons, also owing to the presence of inactive, latent foci; but if it occurs in a serum dilution of 1 in 10 or higher, it may be taken as diagnostic of active disease (S. von Ruck).

To recapitulate: For a diagnosis of early pulmonary tuberculosis a careful consideration of all factors is required, viz., history, both family and personal; exposure to infection; occupation; habits; prior diseases; present condition, disturbed nutrition, appearance of skin, chest, pupils, gums, pharynx; the presence of structural changes in the apices; positive tuberculin test; agglutination test positive in dilutions of 1 in 10 and higher. We may add that we err less seriously in calling a patient tuberculous who has no active disease, than in eliminating tuberculosis from our diagnosis when it exists; an overlooked tuberculosis is far more serious than a nontuberculous patient treated as tuberculous, because the treatment will in any case tend toward a general improvement of all bodily functions.

Dr. Norman J. Lebharr, of New York, observes:

The successful treatment of pulmonary tuberculosis depends so much upon its early recognition that the practitioner must be ever on the alert to detect the disease in its incipency.

Owing to the slow growth of the tubercle bacillus, in the great majority of cases constitutional symptoms precede those of local disease of the respiratory organs. Thus there is a prephysical stage of the disease and it is highly important to diagnosticate it in this stage, if possible. Most of us err on the side of too much optimism and we are inclined to give our patients the benefit of the doubt, until either tubercle bacilli appear in the sputum, or there are definite physical signs present in the chest. This is a mistake to be carefully guarded against, for it is only by making an early diagnosis that the mortality list can be cut down.

The majority of cases begin with bronchial catarrh. The patient is said to have taken cold. One cold is followed by another, and a slight cough makes its appearance. Associated with this there is perhaps a loss of weight. There may be a mild rise of temperature in the afternoon, and on questioning the patient he may mention that he has night sweats. Or the disease may begin with some slight gastric disturbance, and be followed by loss of appetite and then by loss of weight. Or the patient may present himself to the physician complaining only of weakness and of loss of energy. In women there is often present an amenorrhoea which may be the first symptom of tuberculosis. This is generally combined with chlorosis, and the patient is run down and weakened.

I generally regard as suspicious of tuberculosis any patient who has three or more of the following symptoms, even if there are no physical signs present. I treat these patients exactly as if I felt sure that tubercles were forming: Cough, persisting for a month or longer; loss of weight; gastric disturbances; loss of appetite; night sweats; increase in the pulse rate; a rise in temperature in the post-meridian hours of the day; hæmoptysis; laryngeal symptoms, hoarseness, aphonia, etc.; pain in the chest. When any of these symptoms are present a thorough physical examination should be made and the sputum carefully examined for tubercle bacilli. The presence of the bacillus in the sputum positively indicates tuberculosis of some part of the respiratory tract, but their absence does not imply that the patient is not suffering from tuberculosis. Numerous examinations should be made in a suspicious case. It often requires a half dozen examinations before the bacillus is found.

Before discussing the physical diagnosis of the disease in its early stages, it is well to mention the physiological dissimilarity of the right and left apices. In most healthy persons, particularly in thin subjects, the health sounds are louder and expiration is more prolonged at the right than at the left apex. This is due to difference in size and position of the right and left bronchi, and this fact must be borne in mind in estimating any slight want of symmetry of the right and left apices.

The earliest physical signs at the apices are almost exclusively discovered by auscultation. Very fine or moist râles are present at one apex, and the expiration is harshened. There may be slight dullness on percussion. This appears first at the supraclavicular and supraspinous fossæ and thence extends downward over the front of the chest. For the recognition of this slight degree of dullness light

percussion and careful attention to the sense of resistance are required. As the disease progresses the lung becomes more airless and the sounds of both inspiration and of expiration are weakened. Inspection reveals a retraction of the chest wall both above and below the clavicle. Dulness becomes more marked, and the râles are larger and more sharply conducted to the ear. Vocal fremitus is increased on the affected side. Tubular breathing may appear at a comparatively early period but this is unusual, the rule being that tubular breathing appears late in the disease, when the bronchi are obstructed.

As a further aid to a diagnosis a radiographic picture, taken at this stage, may show a shadow, but the evidence thus obtained is purely corroborative, for the diagnosis can always be made by the physical signs alone.

A very important point to be borne in mind is the fact that the apices are not always the first to be attacked in pulmonary tuberculosis. Occasionally the first physical signs present themselves at the base. This form of infection is probably an extension of a tuberculous inflammation of the bronchial glands.

The ophthalmic reaction of Calmette and the vaccination method of von Pirquet are important auxiliary methods in the making of an early diagnosis. Von Pirquet's method can be applied to all suspicious cases, but it must be kept in mind that a negative result does not preclude the possibility of pulmonary tuberculosis nor does a positive result invariably denote it.

Dr. C. F. A. Locke, of New York, says:

In examining a patient suspected of incipient pulmonary tuberculosis, it is frequently necessary to base our diagnosis on the sum total of findings and observations; the individual symptoms and clinical facts often being slight and inconclusive. My routine is as follows:

Anamnesis, emphasizing exposure, heredity and previous pulmonary diseases in the order named; careful inquiry into the subjective symptoms emphasizing especially the time of the onset of malaise, of the slight hacking cough, loss of weight, anorexia, constipation, lassitude, dyspnoea, and nervous irritability.

Examination. Daylight falling from above is preferable for an examination and the early morning hours is the best time, the patient should of course, be completely stripped to the waist. The temperature at the time of examination and the quality and the rate of the pulse should be observed. I will here omit the general physical observations, for two reasons, lack of space and because in so many incipient cases, the toxins have not as yet caused any general expression of their activity.

In the inspection of the thorax itself a point frequently neglected is having the patient stand in his natural attitude, not putting the skin and muscles on stretch by standing more erect or stooping more than usual. The supraclavicular and infraclavicular spaces demand our attention primarily, an unequal or marked depression in any of the four fossæ should be noted; differences in expansion of the two sides and failure of any areas to fill out

under inspiration are especially worthy of close observation—disturbance of the relation between inspiration and expiration can occasionally be noted during inspection.

Palpation is to me of great value, not only can the bilateral expansion be better appreciated by this method than by inspection, but failure of any one area to fill out under the palpating hand can be recognized, this latter is a finding of considerable import. Palpation with one hand is advisable, the tactile sense of the two hands being different in most individuals. Vocal fremitus is better appreciated by placing the forehead on the examining hand, as the patient either hums or says "nine, nine" in a low tone. In this relation subjective fremitus should be mentioned; have the patient hum in a low tone and ask him to note any exaggeration of the vibrations in any area; occasionally the patient will be readily conscious of this and it is a surprisingly accurate finding.

Percussion is of but slight comparative value in diagnosing incipient pulmonary phthisis, it is only at a very short distance from the skin surface that changes in the percussion note can be detected in the early stage and only when the area involved is considerable, otherwise the note from the healthy lung tissue cloaks the lack of resonance too much for ordinary appreciation. The lesion is of four or five weeks' duration at least, before it is discoverable by any method of physical examination, except, of course, in acute miliary tuberculosis. Deep and light percussion must be utilized, for deep and superficial lesions respectively and both immediate and mediate percussion, no pleximeter is as valuable as the finger in the latter form. It is, of course, the relative note that we must especially observe, but in a double apical lesion, for example, the impaired resonance may be impossible of recognition.

Auscultation. And now we turn to the most important of all the methods of physical examination in incipient pulmonary phthisis. The vesicular murmur is undoubtedly modified long before our ear can discern the difference, for it is sufficiently surrounded by the healthy tissue to obscure the breath changes in the diseased area when this is small. The first changes observable are irregularity of the breath sounds, the jerking or cogwheel breathing during inspiration accompanied by prolongation of the expiratory murmur and a harshness of the inspiratory murmur. These phenomena are due to either the tubercle or exudate in the smaller bronchi obstructing the passage of air into and out of the alveolar tissue. Comparison of the voice sounds is of some value, if one remembers that the right side is normally more resonant than the left owing to the larger bronchus; we must remember too that the breath sounds are much modified by the muscular layer as for example in the case of a hunchback.

The rapidity and character of the heart beats are of diagnostic value, and the temperature at the time of examination should be noted. These observations may be made during one examination; if a case is kept under observation the temperature should be taken every three hours, otherwise elevations of temperature are frequently overlooked; a daily weight record should always be kept.

A diagnosis in the great majority of cases can

be made by such an examination, in cases still doubtful our most valuable and accurate aid is animal inoculation, secondly sputum examination, thirdly the tuberculin test, and lastly the use of the Röntgen rays. The last two have proved anything but satisfactory in uniformity of results. Sputum examination, if showing the bacilli is final but otherwise is inconclusive, and as to the first named the very elaborateness of the method, the necessary delay, and lastly the maintenance in our office of a cage of guinea pigs places it beyond the reach of the general practitioner.

In conclusion, I may say that I have found familiarization of myself, as absolutely as is possible to me, with normal vesicular breathing, the greatest single aid to the early diagnosis of pulmonary tuberculosis.

(To be concluded.)

Therapeutical Notes.

The Treatment of Phosphorus Poisoning.—Old oil of turpentine is considered one of the best antidotes for phosphorus; it may be prescribed in a partially emulsified form as follows:

- R Oil of turpentine, 3iiss;
 Acacia mixture N. F., 3viiss;
 Syrup of bitter orange peel, 3iiss.
 M. et Sig.: One third to be taken at a dose.

A Mixture in Acute Dysentery.—Marini is credited in the *Journal de médecine de Paris* for March 27, with the following prescription:

- R Ipecac root, 5i;
 infuse for five minutes in
 water, 5vi;
 filter and add
 Menthol, gr. iii;
 Tincture of canella, 5i;
 Acacia mixture, 5i.
 M. et Sig.: One tablespoonful to be taken every hour until a slight degree of nausea is provoked.

Application for Facial Neuralgia.—Sicard (*La Presse médicale*, April 28, 1909) advises the use of the following application in cases where surgical treatment is not deemed necessary:

- R Alcohol, 5iiss;
 Menthol,
 Novocaine, aa gr. viiiss.
 M.

Creosote in Infantile Diarrhœa.—Liachenko has arrived at the conclusion that the best results in the treatment of acute or subacute gastrointestinal disorders in children are to be obtained with the use of wood creosote, especially where they are accompanied with vomiting and fetid diarrhœa, above all in cholera infantum. Creosote is, however, contraindicated in dysentery. Liachenko (*Praktichesky Vrach*, December 20, 1908; and *La Presse médicale*, May 1, 1909) advises prescribing the creosote in the form of a mixture of the following composition for a child one year old:

- R Wood creosote, gr. iii;
 Peppermint water, 5iiss;
 Mucilage of salep, 5iiss;
 Simple syrup, 5vi.
 M. et Sig.: One teaspoonful every two hours (eight teaspoonfuls a day.)

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STUDIES IN MENINGITIS.

The occurrence of a well marked epidemic of cerebrospinal meningitis in New York city in 1905 and the succeeding years led to the appointment by the city board of health of a commission to study the disease. Many important results have followed, notably the development of a curative serum by Flexner and his coworkers, to which we have already called attention (*New York Medical Journal* January 25, 1908).

The June issue of the *Journal of Medical Research* is devoted to the results of the studies of William J. Elser and Frank M. Huntoon. These studies were made from the viewpoint of the bacteriologist and epidemiologist. The results are so well stated in the paper that it is safe to say that for many years to come this work will be the authority on the biological characters of the *Diplococcus intracellularis meningitidis* and allied Gram negative cocci, as well as on the serum reactions, pathogenicity, method of dissemination, and ætiological relationship of the organisms. Concerning the morphological, cultural, and biochemical properties of the meningococcus and its allied organisms, the authors find that a mixture of ascitic fluid or human blood serum and agar or beef broth forms the most reliable culture medium. The addition of glucose is an advantage because it favors the growth of the diplococcus and makes the distinction of the chromogenic Gram negative cocci easier. Blood cultures give the best results when the blood is

inoculated with rather large quantities of liquid medium to which air has free access. The pseudomeningococcus grows better on human blood serum agar than on ascitic fluid agar. Many strains of Gram negative cocci will grow on agar without serum, or on Thalmann's agar, particularly if the medium contains glucose, after frequent transplanting.

Recently isolated strains of the organisms of the Gram negative diplococcus group must be transplanted daily in order to get an extracorporeal generation started. After several generations of the organisms have been grown, the interval of transplantation may be lengthened until the usual interval may be allowed to pass. There are certain exceptions to this rule, however. The various members of the groups cannot be distinguished by morphological characters. They all tend to degenerate early in culture media; they all exhibit a predilection for the interior of leucocytes; they are all constantly Gram negative; but the Neisser method of staining serves to distinguish the gonococcus in cultures from the other members of the group. The capsule stain serves to distinguish the *Diplococcus mucosus*, as it is the only member that has a capsule. The colony growth is uniform and constant, even after prolonged cultivation. The *Micrococcus catarrhalis* and the chromogenic organisms then undergo changes, but the meningococcus, the pseudomeningococcus, and the gonococcus retain their original cultural features. Fermentation tests in solid media furnish reliable data for the distinction of the Gram negative cocci. Quantitative determinations of the amount of acid formed in carbohydrate media give no available data. The meningococcus of Jaeger is a member of a series of organisms in all respects quite distinct from the meningococcus.

AGGLUTINATION AND ABSORPTION
TESTS FOR THE MENINGOCOCCUS.

The agglutinable property of the meningococcus is variable, and the same immune serum often gives a varying degree of agglutinability in the different strains of the organism, so that the agglutination test is of little value as a diagnostic means. About forty per cent. of the strains of the organism are inagglutinable. Some of this inagglutinability is apparently dependent upon the presence of blood serum in the culture media, since a passage through plain bouillon or glucose bouillon renders some of the inagglutinable strains more sensitive to the action of agglutinins. Whenever an agglutination test is undertaken, check tests with normal serum should be made.

Temperature exerts no marked influence in the

final results of these reactions; twenty-four hours is necessary for the completion of the reaction; centrifugalization accelerates the clumping and sedimentation. There is apparently a definite relationship between the agglutinogenic property and absorptive capacity of a given meningococcus strain. While not of great value from the diagnostic viewpoint, properly checked agglutination tests serve to distinguish the various groups of Gram negative cocci, provided the strains tested are agglutinable. Absorption tests are better, however. Under certain conditions centrifugalization of an immune serum causes a reduction of its agglutinating value. These changes have been attributed to the influence of discordant vibrations of the centrifuge.

THE BACTERIOLOGICAL DIAGNOSIS AND EPIDEMIOLOGY OF CEREBROSPINAL MENINGITIS.

In 210 cases of cerebrospinal meningitis a bacteriological examination of the cerebrospinal fluid removed by lumbar puncture established a positive diagnosis in 194 instances (92.4 per cent.). Microscopical examination of this fluid, by the smear method, furnished positive results in 82.46 per cent. Cultures yielded positive results in 85.88 per cent. For the successful isolation of the meningococcus from the lumbar puncture fluid, it is important to plant the fluid as soon as possible after its removal. For this purpose culture media should be inoculated at the bedside, and not, as is so frequently the practice, sent to the laboratory in a sterile test tube.

Gram negative cocci which are not identical with the meningococcus have been rarely found in lumbar puncture fluids. For practical purposes the detection of a Gram negative diplococcus having the morphological and tinctorial characteristics of the meningococcus in smear preparations is sufficient to establish the diagnosis, provided the examination is made shortly after the withdrawal of the fluid and the cellular elements present indicate the existence of an acute meningitis. An intracellular position of the organism strengthens the diagnosis.

For the positive identification of Gram negative cocci recovered from the nasopharynx or other parts more or less removed from the central nervous system, all tests should be made. By the use of combined cultural and microscopical methods, a positive diagnosis was established in thirty out of thirty-three cases examined at autopsy. In one of the negative cases agglutination tests were important. Instances of mixed infection are rare. The alleged occurrence of the meningococcus in the cerebrospinal fluid in cases of tuberculous meningitis requires confirmation.

It is generally admitted that the meningococcus is unusually sensitive to external influences, and the investigations under review lead the authors to an endorsement of this view. They believe that the disease is transmitted directly through the air from individual to individual. An authentic instance of indirect infection has not been recorded, and the supersensitiveness of the organism to drying would render it improbable. The most important part in the dissemination of the disease is played by meningococcus carriers. The occurrence of adult germ carriers and the fact that the majority of individuals are naturally immune to infection with the organism explain many of the peculiarities of epidemics of this disease. The organism probably gains entrance to the body from the nasopharynx or other part of the respiratory tract. The gastrointestinal tract is probably not a portal of entry. Children suffering from cerebrospinal meningitis are probably innocuous. The authors are inclined to the view that the meningococcus reaches the meninges through the blood stream. They advance experimental evidence to show that it has a special predilection for the meninges. Consequently, the point of entry is immaterial. They believe that access through the cribriform plate of the ethmoid bone is open to question. They are of the opinion, finally, that the only other organism capable of producing epidemics of meningitis is the encapsulated streptococcus of Bonomé.

RETROVERSION OF THE GRAVID UTERUS AND RUPTURE OF THE BLADDER.

The rarity of rupture of the urinary bladder as a consequence of retroversion of the gravid uterus makes an instance of its occurrence interesting, and the successful issue of an operation promptly undertaken adds a special value to the report of a case by Dr. Albert Martin, of Rouen, published in the May number of the *Annales de gynécologie et d'obstétrique*. The case occurred in the practice of Professor Martin's chief of clinic, Dr. Vallée. A healthy woman, twenty-five years old, about three months and a half along in her first pregnancy, called in her physician, M. Vallée, after she had suffered for a few days with difficult, frequent, and scanty urination. Retroversion of the gravid uterus was diagnosed, but M. Vallée's proposal to correct it at once was disregarded and the patient continued in her ordinary round of duties. One night she went to bed at about ten o'clock and slept till about one, when she awoke and sneezed. The sneeze was immediately followed by atrocious pain in the abdomen. Then M. Vallée, called hastily in the dead of night, decided that retroversion of the ute-

rus was not in itself sufficient to account for the grave symptoms present—intense pain, pronounced tympanites, a pulse of 130, and incessant vomiting—and called M. Martin.

The conclusion was at once arrived at that laparotomy was called for. The patient was taken to the hospital and the operation was performed at four o'clock. When the peritonæum was opened, from four to five pints of urine escaped. A laceration of the bladder, about an inch and a half long, was found—not the result of ulcerative action, but a true rupture. The laceration and the abdominal incision were closed *secundum artem*, but the wound in the abdominal wall was not closed until after an attempt had been made to correct the position of the uterus through it. The first effort at reduction was futile, and the midwife had to be called upon to assist by pressure in the vagina. Even then the uterus showed such a tendency to resume its vicious attitude that a colpeurynter was thought necessary to maintain it in its proper relations. We are not told how long the use of the colpeurynter was kept up.

On the whole, the patient made a good recovery, though she had fever and pyuria for a month, which may have been due in part to the *sonde à demeure*. The symptoms subsided gradually under a strict milk diet and a few doses of hexamethylenamine. At the time of the report the patient was within about a month of confinement at term. Her rescue was undoubtedly due to prompt surgical intervention.

SIMPLICITY IN BANDAGING.

Many useless niceties of manipulation have been handed down to us from past generations of authors. Some of them are still scrupulously taught to students, and particularly to the pupils in nurses' training schools. They are burdensome to acquire, and for the most part they are promptly forgotten in actual practice. For example, who ever stops to think of the *tour de maître* in passing a urethral sound? When a practitioner has really become possessed of manipulative skill he is apt to find himself giving up the precise steps laid down in the textbooks and relying more and more on a certain knack that has come to him with experience.

Perhaps it is most noticeably in teaching the art of bandaging that traditions long ago ignored in practice are made to appear of present importance. In many of the current illustrations employed, mathematical preciseness of appearance is made to predominate over utility and real effectiveness, so that it seems to be thought that the serrations of a reversed roller bandage must fall in an absolutely

straight line parallel with the axis of the limb and the imbrication be as faultless to the eye as it can hardly fail to be uncomfortable to the patient. Regard for appearances is sometimes carried so far that the sight of a raw edge is not tolerated; the pupil is required to turn such an edge in order to hide it from view, no regard whatever being paid to the fact that the necessary folding must make the pressure upon the limb uneven. Thus a "finicky" adoration of set rules leads at times to defeat of the purpose for which a bandage is applied.

It seems to us that some of the ornate bandages of our forefathers might with advantage be dropped from the textbooks, as they have virtually been dropped from practice. One of them is the capeline bandage, beautiful to look upon even when incorrectly depicted, as it usually is, but practically almost useless. Another is the stitched form of the many tailed bandage, and still another is that variety made by tearing a broad piece of muslin into strips from either end, the central portion being left intact to obstruct if not wholly prevent the proper overlapping of the turns. Properly made, of independent strips, any one of them removable and replaceable without molestation of the injured limb, the Scultetus bandage is often exceedingly serviceable, but the forms that we have mentioned should, it seems to us, no longer figure in teaching the useful art of bandaging. Simplicity is what is wanted, even if zigzags have to be a trifle irregular and turns not scrupulously equidistant.

THE CALIFORNIA STATE BOARD OF MEDICAL EXAMINERS.

Of late there have appeared in print grave criticisms of the methods of some of the State examining boards, and the California board's procedures have been particularly represented as objectionable. In the July number of the *California State Journal of Medicine* there is to be found an article, entitled Our State Board Examination, written by Dr. H. D'Arcy Power, of San Francisco. While in a general way Dr. Power professes that the board's methods are not open to serious objection, he proceeds to specific criticisms which, if correctly printed, go far toward a refutation of his main proposition. In one respect, moreover, he appears to put himself in the wrong. He says: "Finally, let me remark that it is derogatory to the dignity of the board, and in fact of [*sic*] the medical profession, to set questions in bad grammar. 'What are the origin and significance of urea' [no question mark]. 'Give the period of eruption of the *exanthema*?' [misused question mark] (ta), or the use of *neuritis* for *neurites*, do

[sic] not look well, and should not occur." Note the general ungrammatical character of this criticism on points of grammar, and note particularly the critic's use of "neurites" for *neuritides*! Surely Dr. Power never wrote these sentences quite as they appear; they must contain typographical errors.

We are glad to learn that a new board has been appointed and that, according to the June issue of the *Southern California Practitioner*, the new board has decided upon general methods of procedure which ought to enable it to avoid the faults of the old board. It should not be the object of the examining board to exalt bookworms and humiliate candidates who, whatever their defects of memory may be or how slight may be their ability to interpret the meaning of occult questions, may still be persons quite fit to practise medicine.

News Items.

An Addition to Cooper Hospital, Camden, N. J.—Funds are being collected by subscription for the erection of an addition to this hospital to be used as an outpatient department. The estimated cost of the building is \$50,000.

\$108,000 for Ellis Island Hospitals.—The house emergency bill, as agreed on by the House of Representatives, provides for \$108,000 to be expended in the erection and equipment of hospitals on Ellis Island in New York Harbor for the use of immigrants.

A Research Laboratory on the Roof of the College of Physicians and Surgeons, New York.—Plans have been filed for a laboratory for private physiological research to be erected on the roof of the north wing of the college. It will contain about a dozen rooms for laboratory work, and two rooms for experimental work. The cost will be \$8,000.

The American Association for the Study of the Feeble Minded held its fifty-third annual meeting in Chippewa Falls, Wis., recently. Among those who presented papers were Dr. C. B. Davenport, of Cold Spring Harbor, N. Y.; Dr. W. E. Fernald, of Boston; Dr. A. R. T. Wylie, of Minneapolis; Dr. H. H. Goddard, of New Jersey; Dr. W. N. Bullard, of Boston; and Dr. A. L. Beir, of Wisconsin.

The Boston Floating Hospital Open to Suburban Patients.—Efforts to raise funds in Lynn, Mass., for the benefit of the Boston Floating Hospital for children were criticised locally on the ground that the charity was a Boston and not a Lynn institution. It seems that this is an error, as announcement is made that within the limits of its capacity the hospital is open to sick children from outside the limits of Boston.

Improvements at Hillcrest Surgical Hospital, Pittsfield, Mass.—Arrangements have been completed for the erection of a new building of eighteen rooms on the lot adjoining the main building of the hospital, and the work of construction has already been started. The new nurses' home of twenty rooms, recently completed and furnished, will adjoin the new building, and all three buildings will be connected by corridors, forming practically one large building.

The Maryland Expert Testimony Bill Criticised.—The Baltimore Bar Association has prepared a measure for presentation at the next meeting of the Maryland Legislature intended to regulate the introduction of expert testimony in the courts. At a recent meeting of the Maryland Psychiatric Society the bill was severely criticised by many of the physicians who took part in the discussion. The society, however, appointed a committee of three to confer with the committee of the bar association, with a view to drafting a bill which will meet the views of both lawyers and physicians.

A Free Dispensary for Epileptics in Philadelphia.—It is reported that plans are being made to establish in Philadelphia a dispensary where epileptics may receive treatment free of charge.

Tuberculosis to be Registered as a Contagious Disease in Rhode Island.—An act requiring physicians to register cases of tuberculosis with the secretary of the State Board of Health went into effect in Rhode Island on July 1st.

The Department of Health of the State of Pennsylvania has recently added about one hundred stations for the free distribution of antidiphtheritic serum to the poor. The total number of stations now in operation throughout the State is 633.

The Junior Sea Breeze, a summer hospital for babies at Sixty-fourth Street and East River, New York, has been opened for the season. A new feature of the work this year will be a daily conference of mothers with nurses in regard to the care of babies. This hospital is supported entirely by Mr. John D. Rockefeller.

Pennsylvania State Board for the Examination and Registration of Nurses.—Governor Stuart, of Pennsylvania, has appointed the following as members of this board: Dr. William S. Higbee, Dr. Albert E. Blackburn, Dr. Alice E. Seabrooke, of Philadelphia; Miss Ida F. Giles, of Pittsburgh, and Miss Roberta West, of Erie.

Contagious Diseases in Chicago.—Reports of 794 cases of contagious diseases were received during the week ending June 26, 1909, distributed as follows: Diphtheria, 74; scarlet fever, 68; measles, 408; whooping cough, 45; tuberculosis, 88; pneumonia, 13; typhoid fever, 15; chickenpox, 36; mumps, 40; smallpox, 1; puerperal fever, 1; erysipelas, 5.

Advisory Board of the Department of Health of the State of Pennsylvania.—Governor Stuart has appointed Dr. Adolph Koenig, of Pittsburgh; Dr. Charles B. Penrose, of Philadelphia; Dr. Leonard Pearson, of Philadelphia; Dr. B. H. Warren, of West Chester; Dr. Lee Masterson, of Johnstown; and Dr. George W. Guthrie, of Wilkesbarre, members of this board.

Appointments in the Johns Hopkins Medical School.—Dr. Charles D. Snyder has been appointed associate professor of physiology; Dr. Leonard G. Rowntree, an instructor in experimental therapeutics; Dr. Arthur H. Koelker, an instructor in physiological chemistry; Dr. Herbert M. Evans, an instructor in anatomy; and Dr. Milton C. Winternitz, an instructor in pathology.

The Use of Common Drinking Cups Prohibited in Kansas Schools.—It is reported that the Kansas State Board of Health has forbidden the use of common drinking cups in public and private schools, in all State educational institutions, in railroad stations, and on railroad trains. The danger of communicating infectious diseases through common drinking cups is well recognized, and the action taken by the Kansas State Board of Health is a wise precaution.

The Charles Choate Memorial Hospital, in Woburn, Mass., was dedicated with suitable exercises on Tuesday, June 29th. Mr. Elmer E. Silver, president of the Woburn Charitable Association, presided. The hospital was formerly the home of the late Mr. Charles Choate. When he died he left it to his daughter and granddaughter, Mrs. Johnson and Mrs. Sprague, who presented it to the town for charitable purposes, and it was decided to turn it into a hospital.

St. John's Guild.—The floating hospital which is operated by this guild took its first trip to New Dorp, Staten Island, on Tuesday, July 6th. This trip will be taken every day except Sunday during the summer. On Mondays and Thursdays the landings are on the east side of Manhattan; on Tuesdays and Fridays landings are made on the west side; and on Wednesdays and Saturdays landings are made at North Second Street, Hudson and Hamilton Avenues, Brooklyn.

A School for Tuberculous Children has been opened on the roof of the Vanderbilt Clinic, Fifty-ninth Street and Amsterdam Avenue, New York, in the day camp for consumptives which was established there last December by the Red Cross Society. The Board of Education has supplied a teacher, and the course of study conforms as nearly as possible to the work done in the public schools. The children are under the supervision of a physician. The school is open all the year.

The American Institute of Homœopathy elected the following officers at the annual meeting of the organization held in Detroit, Mich., recently: President, Dr. James W. Ward, of San Francisco; first vice-president, Dr. Herbert Dana Schenck, of Brooklyn; second vice-president, Dr. Sarah M. Hobson, of Chicago; treasurer, Dr. T. Franklin Smith, of New York; secretary, Dr. J. Rickey Horner, of Cleveland; censor, Dr. J. B. Garrison, of New York. Next year's meeting will be held in Los Angeles, Cal.

The Columbia Hospital is to be the official name of Milwaukee's new hospital, according to articles of incorporation filed a few days ago by the purchasers of the Knowlton Hospital. The articles of incorporation provide that no special privileges shall be given to any religious sect or the members of any religious order, church or society as such. Provision is made for a board of fifteen directors. A meeting of the persons interested will be held on July 12th, when a site for the new hospital will be discussed.

Antitoxine Stations in Minnesota.—The Minnesota State Board of Health has designated a leading drug store in each of the following towns as antitoxine stations through which the State will furnish diphtheria antitoxine at reduced rates for the poorer patients: Red Wing, Rush City, Pipestone, Breckenridge, Ortonville, Waseca, Hallock, Crookston, Wadena, St. Peter, Bemidji, Willmar, Detroit, Marshall, Luverne, Aitkin, Tracy, Warren, Brainerd, St. Cloud, Fergus Falls, Benson, Albert Lea, Argyle, Cloquet, Sauk Centre, Faribault, Arlington, Eveleth, Mankato, Two Harbors, Hibbing, and Appleton.

Fifteen Thousand Dollars for Discarded Hospital Plans.—The Board of Public Service of the City of Cincinnati has, after a prolonged discussion, decided to pay nearly \$15,000 to Mr. Hannaford for plans submitted by him for the Cincinnati City Hospital. The original plans called for a structure costing \$1,750,000, but these plans were so modified as to make practically new plans providing for a hospital costing \$3,000,000. The city solicitor said that the architect had no legal claim against the city, but the Board of Public Service decided that the city was morally responsible for the amount named.

Hospital Benefits and Donations.—The net receipts from the carnival held recently in Jersey City, N. J., in aid of St. Mary's Guild of Christ's Hospital, amounted to \$600.

The \$10,000 fund for the endowment of a free memorial room in the Hospital of the Good Shepherd, Syracuse, N. Y., is complete. The money was collected by the Woman's Auxiliary of the hospital.

A linen shower was held on the grounds of the North Adams, Mass., Hospital recently, which was very successful. A large quantity of linen was received for the hospital, besides about \$30 in cash.

The Alumni of the Medical Department of the University of Vermont held their annual reunion at Burlington on the evening of June 29th. A business meeting preceded the banquet, which was presided over by Dr. U. A. Woodbury, of Burlington. The following officers were elected: President, Dr. U. A. Woodbury, of Burlington; vice-presidents, Dr. W. Bryant, of Ludlow; Dr. F. E. McSweeney, of Burlington; Dr. M. F. McGuire, of Montpelier; Dr. C. Fletcher, of Dover, N. Y.; Dr. D. D. Groat, of Waterbury; secretary and treasurer, Dr. Lyman Allen, of Burlington. The executive committee consists of Dr. E. C. Buttle, of Burlington; Dr. A. S. C. Hill, of Winooski, and Dr. Waldo Upton, of St. Albans.

A Free Psychological Clinic at the University of Pennsylvania. Philadelphia, was opened on July 6th under the direction of Dr. Arthur Holmes, instructor in the Department of Psychology, assisted by Dr. S. D. W. Ludlam, instructor in Neurology and Neuropathology; Dr. William Burdick, physical director of the Central Young Men's Christian Association; Dr. Clara H. Town, resident psychologist at the Friends' Asylum for the Insane, and Dr. D. Stevenson Smith. The clinic will be open daily, save on Saturdays and Sundays, until August 17th. Children, who are defective mentally, or who have a lack of moral development, will be examined without charge and parents will be advised as to method of training best suited to each particular child, and where institutional restraint is deemed desirable, the particular institution suited to the case will be recommended.

Vivisection in Great Britain.—According to the annual report of the Home Office on experiments upon living animals, 88,634 such experiments were performed in England and Scotland during the year 1908, an increase of 15,266 over the preceding year. The total number of persons holding licenses was 453, of whom 126 performed no experiments during the year. Two thousand eight hundred and fifty-one were performed under anesthetics, the remainder without anesthetics. Cancer research was responsible for almost half of the total number of experiments, 40,870 having been performed for this purpose in three institutions, and consisted almost entirely of the inoculation of mice. In Ireland, twenty licenses were in force and 390 experiments were performed during the year.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 3, 1909:

	June 25-30		July 3-8	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	518	171	459	103
Diphtheria	303	38	242	24
Measles	1,100	35	583	31
Scarlet fever	207	19	148	10
Smallpox	1	0	0	0
Variella	124	0	89	0
Typhoid fever	28	11	40	8
Whooping cough	62	10	54	8
Cerebrospinal meningitis	8	6	6	0
Total	2,350	280	1,921	155

International Sanitary Convention of American Republics.—Dr. Walter Wyman, surgeon general of the United States Public Health and Marine Hospital Service, and chairman of the international sanitary bureau, has issued a call for the fourth international sanitary convention of American Republics, to be held in San José, Costa Rica, from December 25, 1909, to January 2, 1910. Mr. John Barrett, director of the bureau of American republics, has forwarded this call to the diplomatic representatives of the countries interested. Among the subjects proposed for discussion at this convention are measures relating to the control of yellow fever and bubonic plague, and new discoveries with respect to the transmission of yellow fever and malaria. A prominent place on the programme has been given to the consideration of practical means for the adoption of measures relating to the sanitation of cities and ports. The delegates will be asked to present statistics relating to the registration of the movement of the population and the rate of mortality in each country.

Personal.—The honorary degree of doctor of medicine was conferred upon Dr. Charles W. Eliot, president emeritus of Harvard University, at the commencement exercises of the university, held recently.

Sir Felix Semon, K. C. V. O., physician extraordinary to King Edward, is about to retire from active practice. A complimentary banquet was tendered him on the evening of July 2d.

Dr. Samuel C. Chew, professor of medicine in the University of Maryland, has resigned.

The University of North Carolina has conferred the degree of LL. D. upon Dr. R. H. Whitehead, the new dean of the medical department of the University of Virginia.

Dr. W. J. Cronyn, professor of medical jurisprudence in the medical department of Marquette University, Milwaukee, had conferred upon him the honorary degree of doctor of laws at the annual commencement held on June 21st.

Dr. James M. Anders of Philadelphia has been made an officer of public instruction by the French Government in honor of his discoveries in relation to the influence of flowering vegetation and of odoriferous foliage in the conversion of oxygen into ozone. The honor is a high one and is rarely conferred on aliens.

At the commencement exercises of the Washington and Jefferson College held at Washington, Pa., recently, the degree of master of science was conferred upon Dr. Henry Beates, Jr., of Philadelphia, president of the Pennsylvania State Board of Medical Examiners.

Dr. E. R. Walters, director of the departments of health and charities of Pittsburgh, Pa., was tendered a banquet at the Hotel Lamont, in that city, by his political friends on the night of July 2d. The guests included the mayor and most of the leading officials of the city. During the course of the dinner it was suggested that Dr. Walters might possibly be the next mayor of Pittsburgh.

The Health of Pittsburgh.—During the week ending June 26, 1909, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 3 cases, 0 deaths; typhoid fever, 17 cases, 1 death; scarlet fever, 8 cases, 0 deaths; diphtheria, 6 cases, 0 deaths; measles, 22 cases, 1 death; whooping cough, 34 cases, 2 deaths; pulmonary tuberculosis, 35 cases, 11 deaths. The total deaths for the week numbered 163, in an estimated population of 572,000, corresponding to an annual death rate of 14.81 in a thousand population.

The University Medical College of Kansas City.—The following officers were elected at a recent meeting of the board of trustees of this institution: President, Dr. Jabez Jackson; dean, Dr. J. M. Frankenberg; secretary, Dr. George W. Davis; treasurer, Dr. C. A. Ritter; curator, Dr. Walter M. Cross, and Dr. S. C. James, a member of the executive committee. Through an inadvertence the statement was made in a recent issue of the JOURNAL that this election took place in the medical department of the University of Kansas. The University Medical College of Kansas City has no connection whatever with the State university.

The Mortality of Chicago.—During the week ending June 26, 1909, there were reported to the Department of Health 492 deaths from all causes, in an estimated population of 2,224,490, corresponding to an annual death rate of 11.49 in a thousand population. The death rate for the preceding week was 12.40, and for the corresponding period in 1908, 12.23. The total infant mortality was 140; 89 under one year of age and 51 between one and five years of age. The principal causes of death were: Diphtheria, 12 deaths; scarlet fever, 3 deaths; measles, 4 deaths; whooping cough, 1 death; typhoid fever, 3 deaths; diarrhoeal diseases, 37 deaths, of which 32 were under two years of age; pneumonia, 73 deaths; pulmonary tuberculosis, 60 deaths; other forms of tuberculosis, 13 deaths; cancer, 16 deaths; nervous diseases, 10 deaths; heart diseases, 46 deaths; apoplexy, 11 deaths; Bright's disease, 44 deaths; violence, 25 deaths, of which 6 were suicides.

Vital Statistics of New York.—The total number of deaths reported to the Department of Health of the City of New York for the week ending June 26, 1909, was 1,442, as compared with 1,331 for the corresponding week in 1908. The annual death rate in a thousand population for the week was 16.48 for the entire city, and for each of the five boroughs it was as follows: Manhattan, 15.62; the Bronx, 19.04; Brooklyn, 16.67; Queens, 17.47; Richmond, 20.07. The total infant mortality was 469; 294 under one year of age, 104 between one and two years of age, and 71 between two and five years of age. There were 114 still births. Of the total deaths 103 were from contagious diseases, 171 from pulmonary tuberculosis, 176 from diarrhoeal diseases, 70 from pneumonia, 80 from bronchopneumonia, 120 from heart diseases, 126 from Bright's disease, 81 from cancer, 17 from suicide, 2 from homicide, and 115 from accidents.

Charitable Bequests.—By the will of Mrs. Julia D. Stroud, the Eliza Cathcart Home for Incurables of the Presbyterian Hospital in Philadelphia, situated at Devon, Pa., receives \$15,000; the Children's Aid Society receives \$2,000; the Pennsylvania Society to Protect Children from Cruelty, and the Children's Country Week Association receive \$1,000 each.

By the will of Mrs. Sarah Dunn Wootten, the Reading, Pa., Hospital receives the residual estate for the purpose and maintaining of the Wootton Wing and memorial rooms. The Home for Widows and Single Women of Reading receives \$7,000.

By the will of Harry Samuel Henry, the Hospital of the University of Pennsylvania, the Episcopal Hospital, the Children's Hospital, the Pennsylvania Hospital, and the Presbyterian Hospital, of Philadelphia, become contingent legatees in an estate valued at between \$1,000,000 and \$1,500,000. As previously stated, the division is to be made upon the death of the widow of the deceased equal shares to all five institutions and the endowments so created are to be used in erecting wards for the care of white children.

By the will of Mrs. Maria C. Tailor, who died in New York on May 15th, the University and Bellevue Medical College Dispensary will receive \$25,000; the Home for Incurables will receive \$7,500; the New York Orthopaedic Hospital Dispensary and Children's Aid Society will each receive \$5,000.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 24, 1909.

1. The Fundamental Conceptions which Should Govern Modern Obstetric Practice. By EDWARD REYNOLDS.
2. When to Interfere in Pregnancy and Labor. By FRANKLIN S. NEWELL.
3. Obstetrical Progress. By STANLEY P. WARREN.
4. Dangers to the Child in Operative Deliveries. By S. A. HOUGHTON.
5. Symptom Complex of a Series of Exanthematous Diseases. Or is there a New Contagious Exanthem? By J. W. WATSON.

2. When to Interfere in Pregnancy and Labor.—Newell gives the two principal conditions as hæmorrhage and the toxæmias of pregnancy. It is well recognized that any flowing occurring after the beginning of the pregnancy is definitely abnormal in the vast majority of cases, and usually means that some more or less serious condition is present. Of course during the earlier months the probability is so largely in favor of a threatened miscarriage and even a gentle examination is so liable to precipitate labor, that it is often wiser to treat the patient expectantly in the total absence of other symptoms, on the theory that the condition is one of threatened miscarriage. It must, however, be borne in mind that an abnormal pregnancy, such as an extrauterine gestation or a hydatidiform mole may be present and an early diagnosis may be important. For this reason examination is often necessary when under other circumstances it would not be advisable. Another condition, the recognition of which is very important, is carcinoma of the cervix, for if this is recognized in the early months of pregnancy not infrequently a radical operation holds out a hope of cure, whereas if the patient is allowed to go through her pregnancy without the condition being discovered, the operation becomes hopeless, and the patient's life is forfeited. During the later months of pregnancy hæmorrhage usually means some form of placenta prævia, and the importance to the patient of the diagnosis of this condition before the loss of blood becomes serious enough to threaten her life is so great that all steps to make a diagnosis, even dilatation of the cervix and intrauterine palpation, although occasionally a normal pregnancy may be sacrificed by these means, are preferable to allowing the patient to go through her pregnancy in fancied security when in reality a fatal outcome of the case is never far distant. If, on examination, a placenta prævia is discovered the pregnancy should be ended at once, except in the rare cases in which a few weeks may mean the delivery of a viable child, and the patient can be put under such conditions as are present in a hospital where delivery can be accomplished at any recurrence of threatening conditions.

5. Exanthematous Diseases.—Watson reports fifty cases of an exanthem which he calls the "fifth disease." He defines it as "an acute contagious disease resembling both Rötheln (German measles) and scarlet fever, being more severe than the first and less than the latter. It is characterized by many sequelæ and a marked pharyngitis." If it is called rubella it must be a very malignant form of it, or

if it is called scarlatina it must be a very light form of that, but it appears to have a marked individuality of its own, which ought to separate it from both rubella and scarlet fever. This leads him to conclude that this is probably a new exanthem, which for the lack of a better name he terms as "the fifth disease." He remarks that years ago smallpox and chickenpox parted company. Measles, German measles, and scarlet fever have long since been separated into distinct entities. Recently German measles, and Duke's (or fourth) disease have gained a certain amount of individuality. This being the evolution of the exanthems, might not the the existence of two diseases (scarlet fever and possibly "the fifth disease"), under the name of scarlatina be an unrecognized condition? It has an incubation period of seventeen to twenty-one days, which was easily determined from its existence in isolated places in the country and the source of contagion being absolutely known. It is not contagious at all until peeling takes place. Compare this with scarlet fever, which has come upon a physician within a half hour while he is making his examination. The desquamate is sometimes very profuse, but its germ is short lived. Patients are much more comfortably sick than they are with scarlet fever. Sickness does not usually last longer than three days when complications are absent. It has complications and sequelæ. Patient should be kept quiet for two weeks to prevent them. No chance of mixed infection in any of the cases. Some of the severest cases sprang from an initial mild case. Opinions of health officials (both state, town and nearby towns) vary as to the disease. It was generally regarded as very mild. Result, lax quarantine and spread of the disease. Several patients had already had scarlet fever, measles, and German measles, but were not immune to this disease. The bacteriology is a study yet incomplete, but it shows that the germs present have little vitality. It has no long continued bad after effects like scarlet fever.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

July 3, 1908.

1. The Field for Prophylaxis among Children,
By T. S. SOUTHWORTH.
2. Old and New,
By WILLIAM OSIER.
3. The Unreliability of the Astigmatic Fan or Clock Dial
Test,
By DAVID W. STEVENSON.
4. Dropsy of the Optic Nerve Sheath,
By JOHN A. TENNEY.
5. Clinical Features of So Called Acute Pellagra,
By N. P. WALKER.
6. The Vaginal Operation for Prolapse of the Uterus.
General Considerations,
By LESTER E. FRANKENTHAL.
7. The Prophylaxis of Interstitial Keratitis,
By H. GIFFORD.
8. Simple Fibroma of the Orbit,
By WILLIAM E. GAMBLE.

5. **Acute Pellagra.**—Walker bases his paper on acute pellagra on fifty-one cases occurring among the colored female insane patients at the Georgia State Sanatorium. He remarks that during the year 1908, 629 insane colored women were treated, of whom forty, or 6.3 per cent. suffered from pellagra. Of 176 patients admitted during the year, nine, or 5.1 per cent., showed symptoms of the dis-

ease when admitted. During the past year, pellagra as the cause of death among the colored women, ranked second to tuberculosis only. Since it is being more fully recognized, one may safely venture the assertion that large numbers of cases will be reported. Food products of maize form a considerable portion of the daily diet. From April 1, 1908, to January 1, 1909, the cornmeal used at the institution was grown at home. At all other times it was purchased, and was made from corn grown in the Western States. Inasmuch as it is extremely difficult to obtain reliable information from insane negroes, no definite statement can be made as to the prodromal symptoms spoken of by older writers, neither can it be stated what symptoms usually appeared first. In the majority of instances, dermatitis, stomatitis, and diarrhoea were noted simultaneously. Vomiting occasionally occurred early, and slight elevation of temperature may be noted and indefinite abdominal pains may be complained of. Nervous symptoms are not as constant as would appear from the descriptions of the chronic forms. Many of the patients with an acute attack do not show any symptoms of spinal cord lesions. In two patients afflicted with pellagra when admitted the symptoms of involvement of the motor tracts were extremely well marked. In one the clinical picture was that of amyotrophic lateral sclerosis, and death was apparently due to bulbar paralysis. In one case only were there symptoms of posterior sclerosis alone. These were confirmed by autopsy. Just preceding death marked delirium may supervene. A considerable general mental reduction is present in many cases. The often quoted tendency to suicide by drowning has not been noted.

6. **Prolapse of Uterus.**—Frankenthal describes Freund's operation, and remarks that the two essential features in this operation are (a) the tamponing of the vaginal outlet and the support of the bladder by the artificially fixed uterus; (b) the repair of the perineal body, vagina, and muscles, and the narrowing of the vagina, which sustains the atmospheric pressure, while the intraabdominal pressure is brought to bear from the direction of the spine and assists in maintaining the fixed uterus in position. Operative cases must be divided into (a) the child bearing, (b) the non child bearing, (c) tumor cases, and they must be dealt with accordingly. It is necessary to distinguish between mere hypertrophic elongation of the uterus and prolapse of the vagina, on the one hand, and simple prolapse of the uterus, on the other. For instance, the fundus might be at its proper height; the external os might be, however, away below the spines of the ischium. Pregnancy is the only serious contraindication to the operation other than those mentioned. It is the most serviceable procedure for prolapse of the uterus. The pelvic connective tissue is the essential factor in the maintenance of the proper elevation of the uterus in conjunction with the other structures referred to. The pelvic floor does not deserve the credit of being the mainstay of the uterus. Complications, such as tumors of the annexa and uterus, can be dealt with through the same peritoneal incision. Even posterior, vaginal drainage could be employed if deemed necessary. The peritoneal cavity (in un-

complicated cases) does not remain open for more than a few seconds; therefore the dangers of shock, infection, intestinal adhesions, intraabdominal hemorrhage, and the loss of sponges, instruments, etc., in the abdominal cavity are out of the question. Sexual life is absolutely satisfactory. Menstrual complications have never been observed following the operation. The urethra loses its S shape and becomes elongated, but neither incontinence nor retention have followed the operation since he has learned how to avoid them. Pregnancy must not be allowed to occur after the operation, so that every possible conservative surgical device must be insisted on to prevent the same. In old women the operation can be done with very little pain without anaesthesia. The incision into the peritonæum and later on the skin incision in the peritonæum are the only painful parts of the operation. The latter could be done under local infiltration anaesthesia. All anatomical parts touched during the operation remain extraperitoneal, except the stump of the distal part of the tube, and it is carefully covered with peritonæum.

7. **Pharyngitis of Interstitial Keratitis.**—Gifford says that the diagnosis of hereditary syphilis should receive much more attention in the textbooks on ophthalmology and syphilis than it usually does; and, instead of the single faulty cut so commonly used, at least half a dozen figures should be presented, to show not only the Hutchinson incisors, but the other more important forms of syphilitic teeth. All children in public institutions and in private families who show any of the well marked signs of inherited syphilis should receive a course of antisiphilitic treatment, even if in other respects they seem to be entirely well; the results and indications of this treatment being controlled, if possible, by the serum diagnosis test. Where a case of syphilis, inherited or otherwise, appears in a family, all the other members of the family should be examined for signs of the disease, and if such are found, the bearer should be subjected to specific treatment. By an extra vigorous use of specific treatment the disease may be kept out of the second eye in a larger proportion of cases than has hitherto been thought possible.

MEDICAL RECORD.

July 3, 1906.

1. The Tuberculoopsonic Index in Its Relation to the Temperature Curve in Active Tuberculosis and Its Value in Diagnosis in Suspected or Arrested Cases.
By HERBERT MAXON KING.
2. Arteriosclerosis of the Thoracic Aorta.
By ALBERT ABRAMS.
3. Atresia of the Vagina. With a Report of a Case Complicated by Hematotrachaelos; Operation.
By OLIVER C. SMITH and PAUL H. WATERMAN.
4. Habitual Constipation.
By DUDLEY ROBERTS.
5. Science and Medicine with Special Reference to the Treatment of Syphilis and Gonorrhoea.
By F. BAUMANN.

1. **The Tuberculoopsonic Index in Its Relation to the Temperature Curve in Active Tuberculosis.**—King reports twelve cases, six observations were made to study the relation of body temperature to the opsonic index, and six to study the diagnostic value of the tuberculoopsonic index in cases of suspected or completely arrested tuberculosis. King remarks that from these and other sim-

ilar observations it is evident that a more or less typical relationship exists between the temperature and the tuberculoopsonic index in acute cases of tuberculosis—a relationship which is demonstrable in proportion as the case is one of comparatively pure infection, and becoming less typical as mixed infection predominates. It would seem, therefore, that a study of the opsonic index in such cases might within its acknowledged limitations be of assistance no less in treatment than in diagnosis. He also demonstrates the wide range of variations to which the opsonic index is subject at short intervals in cases of active tuberculosis. It is obvious, therefore, that single observations in such cases may be quite misleading or fail altogether to give valuable information. It appears also that opsonic index determinations may and do have a field of practical value in the diagnosis of early tuberculosis in some respects superior to that of the ordinary tuberculin tests, and finally, that as a means of determining the patient's fitness for discharge from treatment, when otherwise questions might arise, they may be of decided and valuable significance.

4. **Habitual Constipation.**—Roberts remarks that the clinical study of constipation must involve the determination of the site of failure, that is, which mechanism is at fault, and the reason for the discovered failure. The determination of these facts involves, very often, the most thorough investigation and continued observation. Only in this way may we hope to avoid overlooking the more infrequent morbid lesions the cure of which depends on prompt recognition. The clinical history gives us the leading line of inquiry, and, carefully taken, makes possible a working compromise between ideal completeness and the demands of a busy life. It is not alone to the history of the complaint that we must give painstaking consideration, but also to the study of the life and habits of the individual patient in the hope of discovering any possible ætiological factors responsible for the complaint. Other things being equal in the course of physical examination, the greatest stress is laid on the study of the condition of the colon itself. This involves the palpation of its separate parts and the study of the position, size, condition, and fullness of these parts. The value of direct examination of the lowermost end of the colon cannot be exaggerated, for through this examination we settle the important question as to the site of stasis. The study of the color, form, and consistency of the stools as passed and as removed through the examining tube often gives valuable information. Chemical and microscopical examination of the faeces sometimes demonstrates a disease of the upper bowel which otherwise would be overlooked. The time of passage of the faeces, carmine having been given with a particular meal, is of great moment in determining fecal stasis. The study of the gastric contents may be indicated by the clinical history, but need not be made a part of the routine in the study of habitual constipation. While constipation is frequently a complaint in those suffering from gastric disturbances it does not follow that it is due to the alteration of gastric secretion. Other coincident factors are more probably responsible, or possibly, the gastric disease is really due to consti-

pation. The author describes the different causes of constipation and their treatment.

5. The Treatment of Syphilis and Gonorrhoea.—Baumann states that clinical experience has shown mercury and iodine to be the best drugs with which to influence the course of syphilis, but they are probably not any more specific or tonic for syphilis than they are for gonorrhoea, because their usefulness in the former disease depends mainly on physical rather than on chemical properties. Mercury is in a liquid state at room and body temperature, and can, therefore, easily be divided into small particles and absorbed and converted into salts, which are capable of dissociation. The dissociation of the salts of mercury is very small even in solutions of great dilutions. They, therefore, spend less of their chemical energy and cause less of a reaction locally than the more readily ionized salts of silver and copper. The chemical force of the latter salts is almost entirely spent locally the instant their solution comes in contact with living tissue. The salts of iodine, too, are distinct by the low percentage of dissociation. The albuminates of mercury formed by the contact of its salts with protein substances are relatively easily soluble in an excess of protein substances, and can in this form be carried by the blood current throughout the body. The action of mercury is an injury to the patient affected with syphilis as well as to the healthy person; in fact, the dose of mercury which lies within the recuperative power of an individual is larger in health than in disease. As to gonorrhoea, he says that the drugs in question should be of simple and definite chemical formula. Such drugs are: Nitric acid, sulphuric acid, phosphoric acid, hydrogen peroxide, potassium permanganate, zinc sulphate, copper sulphate, and silver nitrate. In the treatment of acute inflammations, preference must be given to drugs whose chemical activity consists mainly in oxidation, such as acids and salts with indication of small toxicity, such as potassium permanganate and zinc sulphate, because these are more cleansing and their injuries on the mucous membrane repair quicker than the salts with indication of great toxicity, such as copper sulphate and silver nitrate. The latter are indicated in the more chronic inflammations, but they should not be applied any oftener than every four to five days, since their injuries take about that length of time for repair. The physician should limit himself to a small number of drugs, in the use of which he has become expert, and should always keep in mind that the success of his treatment is much less dependent upon the kind of drugs he uses than it is upon the intelligent use of any given drug. A thorough acquaintance with the pathology of the disease he treats and the chemistry of the drugs he uses will insure the results of his treatment. The instrumental treatment endeavors by graduated dilation to soften and break down the pathological tissue, and to allow a freer exit for the pent up pus. The indirect action of the dilatation is essentially the same as that of the antiseptics; it consists in the production of an injury and a specific intoxication of the host, but the damage done by a dilating instrument repairs slowly—four days to four weeks may be given as the time required for complete healing.

BRITISH MEDICAL JOURNAL.

June 19, 1909.

1. Radioactivity and Carcinoma: An Experimental Inquiry, By W. S. LAZARUS-BARLOW.
2. The Red Degeneration of Uterine Fibroids Complicating Pregnancy, By JOHN BLAND-SUTTON.
3. On the Spontaneous Rupture of Cyst Adenomatous Ovarian Tumors, By HENRY BRIGGS.
4. The Incidence of Gonorrhoea in Gynaecological Hospital Practice, By FRANCES IVENS.
5. Caesarean Hysterectomy in Pregnancy Complicated by Myoma Uteri, By JOHN BENJAMIN HELLIER.
6. A Successful Case of Hysterectomy for Puerperal Infection, By A. KNYVETT GORDON.
7. "Clean Midwifery" in General Practice, By ARTHUR H. GREGSON.

1. Radioactivity and Carcinoma.—Lazarus-Barlow presents in two Croonian lectures his views on radioactivity and carcinoma. He shows that certain of the tissues of the human body show skotographic action (liver, kidney), while certain do not (spleen, lung); that a larger amount of this property resides in female tissues that possess it than in male of the same kind; that the amount present in the liver increases from infancy to the age of fifty-five years, with an unexplained drop in both sexes during the age period thirty-five to forty-five, and that after fifty-five while it increases still further in the case of males, in females it undergoes a sharp diminution. He demonstrates that carcinomatous material possesses skotographic power, whether it is primary or secondary, and that female carcinomatous tissue has a higher skotographic value than male; and that the existence of a mass of carcinoma in a tissue modifies its normal skotographic value. He has found that certain substances commonly supposed to be causally related to carcinoma possess the skotographic power to a high degree (cholesterin, gallstone), while others are devoid of it (clay pipe, paraffin). He throws some light upon the nature of the skotographic action manifested by animal tissues and certain other substances, comparing their behavior with that of woods in which the action has been regarded as dependent upon the formation of hydrogen peroxide, and with that of recognized radioactive substances. On this point he adduces evidence showing that the animal tissues and other substances under examination cannot, so far as their action upon a photographic plate in the dark is concerned, be grouped conclusively with the recognized radioactive substances or segregated into a class such as that formed by the woods, and believed by Russell to affect a photographic plate in the dark by means of a purely chemical action. They occupy an intermediate position and have affinities with the woods on the one hand, and with the recognized radioactive substances on the other. Lastly, MacCormac has shown that bacteria may be divided into groups according to their skotographic power, and that the only group which acts in this way with constancy and to a marked degree is a small one, which includes the pyrogenetic staphylococci and the bacilli of tuberculosis and diphtheria. The bearing of these observations upon the question of carcinoma he intends to treat in his third lecture.

2. Red Degeneration of Uterine Fibroids.—Bland-Sutton remarks that the occurrence of red degeneration of fibroids in non gravid uteri is admitted by all gynaecologists, but it is equally true that the

change is more frequent, more extensive, and more intensive when associated with pregnancy. Another important feature accompanying the red degeneration of fibroids when associated with pregnancy is pain and tenderness. The ordinary color of the common hard uterine fibroid on section is dirty white, or very pale yellow; in many degenerating and necrotic fibroids the yellow deepens. During pregnancy a fibroid may assume a deep red or a mahogany tint. In the early stages a tumor undergoing this change exhibits the color in streaks, but as the pregnancy advances the whole tumor becomes affected, and in well marked examples the whole fibroid softens and becomes diffuent. This softening of the tissue composing a uterine fibroid sometimes takes place with great rapidity, and reduces even the hardest (uncalcified) fibroid to the consistency of soft soap. Recently some new investigations on the nature and cause of this red degeneration have been published by Professor Lorrain Smith and Dr. Fletcher Shaw. They investigated with especial care four examples, of which three were associated with pregnancy, and in which the "out-standing clinical features were pain and rapid enlargement of the tumors." In two of the cases there were also symptoms of toxæmia. A study of the clinical history of the three pregnant women shows that it was chiefly on account of pain that they sought surgical assistance, and in each instance hysterectomy was performed with success. In the non-gravid patient hysterectomy became necessary mainly on account of menorrhagia, but in addition she complained of some interference with micturition.

3. Spontaneous Rupture of Cyst Adenomatous Ovarian Tumors.—Briggs says that the diagnosis of cyst rupture by free intraperitoneal fluid can only be (1) positive, when the partially filled cyst can be felt or when the previously firm cyst has completely collapsed; (2) presumptive, when the clinical manifestations of degeneration and rupture have been obtained; and (3) occasionally and exceptionally, when the free fluid is small in quantity and the rupture minute, both may escape detection before and during the operation of ovariectomy. The teaching of Matthews Duncan—that, although the diagnosis of an ovarian tumor approaches practical certainty, it is not one of scientific precision—applies also to the recognition of complications. The ovarian tumors of small size and the largest of only moderate size in his series of ruptured cysts had impaired the health of the patients to an extent unusual for the size of each growth. Not one was malignant. The general peritoneum, so far as it was visible, was only changed in one case, in which it was injected and thickened, but not shreddy. The mechanical inconvenience caused to a patient by an abdominal tumor may be distressing. A multiple pregnancy or a combined ovarian tumor and advanced pregnancy entail physical inconvenience equal to that of an ovarian tumor of corresponding total size, yet the vital effects on the patient have always been widely different. Degenerative changes in cyst adenomata are important; they frequently exist without clinical evidence, because the often slowly formed compensatory vascular adhesions they excite, check, or modify their course. Rupture is rare, and, like the degeneration of which it is the

consequence, may occur early with a small growth. Degeneration, whether the tumor is ruptured or not, varies in its effect on the patient with the degree of vital reaction she possesses, and with the total recumbent rest she takes; it may be revealed by corresponding clinical symptoms showing exacerbations or improvements. These variations are inconsistent, with a locally progressive simple tumor, and they have not been shown to have been due to chronic inflammation.

THE LANCET.

June 19, 1909.

1. A Prominent Motive in Murder. By T. CLAYE SHAW.
2. Some of the Theories as to the Mode of Production of Grocco's Paravertebral Triangle of Dulness, By WILLIAM EWART.
3. Pancreatic Glycosuria Ten Years after Typhoid Fever, By P. J. CAMMIDGE.
4. The Relation of Acidosis to the Carbon Dioxide of the Blood in Diabetic Coma, By A. P. BEDDARD, M. S. PEMBREV, and E. I. SPRIGGS.
5. On the Operation of Cardiolytic: Illustrated by a Case, By F. J. POYNTON and W. TROTTER.
6. Proposed International Standard for the Physiological Assay of the Heart Tonics of the Digitalis Series, By E. M. HOUGHTON.
7. Rupture of the Spleen; Removal; Recovery, By T. S. LUKIS.
8. The Treatment of Chronic Suppurations of the Maxillary Antrum; An Operation and New Instruments, By JAMES DONELAN.
9. Aphasia Succeeded by Jacksonian Epilepsy; Operation; Recovery, By W. ALEXANDER.
10. A Case of Catalepsy Occurring in a Boy Aged Fifteen Years, By DONALD E. CORE.
11. Removal of Superfluous Hairs by Improved Methods, By A. HOWARD PIRIE.
12. A Simple Method of Diagnosis in Paralysis of the Extrinsic Muscles of the Eye, By ANGUS MACNAB.

2. Grocco's Paravertebral Triangle of Dulness.—Ewart finds that Grocco's paravertebral thoracic triangle of dulness, due to fluid free in the pleura, is rectilinear not curved, and in other respects also it agrees with the description of it given by Grocco. It is also produced by fluid collections in the abdomen; its base is then broader than in pleural cases. In the latter neither its width nor its shape vary appreciably, but only its height; this rises exactly to the level reached by the effusion itself. In bilateral cases of pleural effusion a Grocco's triangle can be made out on both sides, in spite of the dulnesses due to the two effusions. As the effusions are seldom quite equal, two unequal Grocco's triangles are the rule. In ascites and analogous abdominal cases the rule is for the two triangles to be equal; they therefore make up together a low but wide equilateral triangle bisected by the spine. The simultaneous occurrence of a right and of a left Grocco's triangle is incompatible with the alleged causation by pleural bulging across the vertebral column. The same reasoning applies to the theory that a pendulum displacement of the intrathoracic viscera across the middle line might explain the dulness. Anatomical probabilities are against any possible shifting of a collapsed pulmonary base away from its own vertebral groove. The assumption that a Grocco's triangle is produced directly by any fluid or other nonresonant substance immediately underlying it is negatived by the circumstances that the general outline of the triangle is always "geometrically" the same and is not contingent upon the in-

numerable variations in size and in shape which belong to fluid collections or to solidifications. This is an argument in favor of the causation suggested under the name of the pleximetric spine theory. The same view is supported by the results of the crucial test and counter test, which also afford proof of the genuineness of this clinical sign and of its helpfulness in the diagnosis of pleural and abdominal conditions.

5. **The Operation of Cardiolyis.**—Poynton and Trotter report such an operation in a boy, sixteen years of age, which was successful. They remark that the operation of cardiolyis was first suggested in 1902 by Brauer and put in practice by Petersen. The name cardiolyis is perhaps a little misleading, as it is at any rate more impressive than the surgically simple procedure to which it is given. It was pointed out by Brauer that in certain cases of adherent pericardium where the heart is embarrassed by fixation to the surrounding parts, a considerable amount of this overloading of the heart's action could be got rid of by rendering the præcordial part of the chest wall more flexible than normal by removing its bony and cartilaginous framework. No extensive separation of adhesions was suggested, and it is obvious that under the circumstances in which the operation has to be done such procedure would be very dangerous. In the first place the circulatory conditions are very unfavorable for prolonged general anæsthesia, while the risk of tearing the left pleura or even the heart wall would seem to be very great. The operation was extremely simple and short and the results were encouraging. Nevertheless, it seems to have been very little done. A review of the subject published in August, 1908, by Ernst Venus, gives a total of seventeen cases, three of them being Brauer's. The article contains a summary of all the cases and seems to be founded on a very complete study of the literature. There is no death recorded as the consequence of the operation, and the results appear on the whole to be very good. In all the published cases general anæsthesia seems to have been used, on the whole without much trouble. The operation need not last more than a few minutes and no very profound degree of anæsthesia is necessary, so that if the patient has been kept at rest for some time previously there seems no great objection to the use of chloroform. If it were necessary, however, to do the operation at a time when the heart was in an unsatisfactory condition there can be little doubt that a local anæsthetic should be preferred. As is well known, the chest wall can be very satisfactorily infiltrated with eucaïne and adrenalin, and one has been able, for example, to open the pericardium very freely under it in a child with purulent pericarditis without causing pain. The technical details of the operation are very simple. A horseshoe shaped flap should be marked out having its base above at the third rib and its apex at the seventh. The inner edge should be over the sternum and the outer in the region of the nipple line. The flap is turned up with the pectoralis and all the structures external to the ribs. The fourth and fifth ribs are those most commonly excised, but the extent of the rib resection will, of course, depend on what is found. A length of at least three or

four inches of combined rib and cartilage must be removed. The third, the sixth, and even the seventh rib must also be dealt with if it appears necessary, and even the left edge of the sternum has been excised when the heart was obviously fixed to it. There has been but one subject of disagreement in the matter of technique, and that is the question of the removal of the costal periosteum. But it was shown by Koenig that the anterior periosteum only should be removed. The possibility of leaving the periosteum without damaging the usefulness of the treatment makes the operation still more simple and removes the only serious risk it could be supposed to have.

LA PRESSE MEDICALE.

April 28, 1909.

Rubeola and Red Color,

By A. GOUGET.

Rubeola and Red Color.—Gouget remarks that the theory that the red color exerts a beneficial influence in eruptive fevers, especially rubeola, is quite old, and is applied by the peasants of many countries. He cites the use of the red ray in erysipelas and concludes that it would be very interesting to make studies with red light treatment in a hospital during an epidemic of measles.

May 1, 1909.

1. On Serum Anaphylaxis,

By MAURICE ARTHUR.

2. The Control of Specific Treatment by the Wassermann Reaction,

By R. ROMME.

May 3, 1909.

A. Study on the Soft Chancres of the Anus and Anal Canal,

By PAUL RAVANT and BENJAMIN BORD.

Soft Chancre of the Anus and Anal Canal.—Ravant and Bord show by their studies of the anatomical, embryological, histological, and pathological condition that the anal canal should be considered as an entirely distinct region from the rectum: there is also a vast difference in the reaction of these two regions to microbic infections. They demonstrate their theory by the invasion of the gonococcus and the bacillus of Ducrey. The gonococcus selects especially the rectal mucosa, the Ducrey bacillus the anal region, causing a chancroid of the anus. They give a detailed description of this specific soft chancre, in the examination of which they have used a fifty per cent. solution of cocaine hydrochlorate. This very strong solution, injected hypodermically in about 2 drop doses, does not diffuse, but remains locally. The treatment of the chancroid is the same as at other parts of the body.

LA SEMAINE MEDICALE.

May 3, 1909.

1. A New Method for Staining Cells and Fibrille in Neuroglia,

By J. LHERMITTE and A. GUCCIONE.

2. Hæmostasis in Abrasion of a Cancerous Cervix,

By R. DE BOWIS.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 17, 1909.

1. The Position of Physiology in University Teaching,

By MAX RÜRSER.

2. Processes of Spontaneous Breaking Down in Tumors of the Brain,

By ANTON.

3. Antistreptococcus Serum,

By ZANGEMEISTER.

4. Hypogastric Laparotomy with the Use of Momburg's Laparotomy Tubes in Carcinoma of the Uterus and the Upper Part of the Rectum,

By NEUBAUS.

5. Tumor in the Region of the Hypophysis with Unusual Disturbance of Vision. By CRENKLER.
6. Lime in the Pathology of Rickets. By J. A. SCHMIDT.
7. The Question of Inability to Nurse. By W. SCHULTZ.
8. The Question of Infantile Sexuality. By MARINOWSKY.

2. **Spontaneous Breaking Down of the Tumors of the Brain.**—Anton reports a fatal case of tumor of the brain in which autopsy revealed a large neuroglioma of the cerebellum involving both hemispheres, filling the fourth ventricle and flattening the corpora quadrigemina. It had produced a high degree of hydrocephalus with all its consequences. But the glioma itself was soft and hæmorrhagic. In the left cerebellum there was a dark bloody fluid with some pulpy substance. In the right there were fresh hæmorrhages which were beginning to become encapsulated, while in the left the bloody cyst was surrounded by a strong wall. The author also reports a case of syringomyelia in a man, forty-two years of age, that had remained stationary for about ten years.

3. **Antistreptococcus Serum.**—Zangemeister doubts the value of the experiments with antistreptococcus serum recently made on monkeys by Aronson.

5. **Tumor in the Region of the Hypophysis with Unusual Disturbances of Vision.**—Crzellitzer reports a case of tumor in the region of the hypophysis in which the following symptoms were present: Paracentral scotoma of the right eye, central scotoma in the left, peripheral contraction of the visual field in both. Headache, anæsthesia of the right cornea, paralysis of the convergence, paralysis of the left pupil, and paresis of the right facial nerve.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

May 18, 1909.

1. A Reaction in the Blood of the Mentally Diseased. By MUEH.
2. What Factors Fix the Size of the Heart. By BRUNS.
3. Contributions to Nerve Surgery. By OPPENHEIM and KRAUSE.
4. Endangerment of Typhobacilli Carriers by the True Typhus Bacilli. By KAMM.
5. Typhus Agglutination in Tuberculosis. By KRENCKER.
6. Treatment of the Abdominal Wall in Childbed and the Early Rising of Lying in Women. By HOLZAPFEL.
7. A New Method of Treatment of Menière's Symptom Complex. By HERZER.
8. Treatment of Gonorrhœa. By KOLLBRUNNER.
9. Children of Paralytics. By HERMANN.
10. Practical Experience with Scabies. By KNAUER.
11. Knee Pains in Hip Disease. By NOHL.

1. **Reaction in the Blood of the Mentally Diseased.**—Much asserts that he has found in the blood of patients suffering from depressive mania and dementia præcox material not found in the blood of normal people, or of those suffering from other mental or nonpsychiatric diseases, which is present in only small quantities and is demonstrable through a biological reaction. By this reaction depressive mania and dementia præcox can be distinguished from other mental diseases, but cannot be distinguished from each other.

3. **Nerve Surgery.**—Oppenheim and Krause report a case in which a probable diagnosis of a tumor pressing on the spinal cord at the level of the eighth cervical and first dorsal vertebra was confirmed at operation, the tumor removed, and the patient restored to a condition of health.

5. **Typhus Agglutination in Tuberculosis.**—Krencker reports a number of cases in which agglutination took place in the course of the tuberculous disease and could be proved not to be ascribable to a previous typhus infection.

7. **Treatment of Menière's Symptom Complex.**—Herzer reports a case in which he obtained a surprisingly good result from the application of vibratory massage to the nasal mucous membrane associated with vibratory and pneumomassage to the portions of the head about the external ear. He ascribes the result to the active hyperæmia of the head induced by the treatment applied to the nasal mucous membrane.

8. **Treatment of Gonorrhœa.**—Kollbrunner speaks highly of syrgol as a remedy in gonorrhœa.

9. **Children of Paralytics.**—Herrmann states that in marriages in which one party is paralyzed the number of miscarriages is only slightly increased, but that the number of childless marriages is much greater among paralytics than among nonparalytics. Of 120 children born of parents one at least of whom was a paralytic, sixty-six were without bodily defects, proportionately formed, and strongly developed; six had bodily defects, such as malformations, scoliosis, and stuttering; and fifty-two were weakly and badly nourished.

THE DUBLIN MEDICAL JOURNAL OF MEDICAL SCIENCE.

May, 1909.

1. Local Anæsthesia in Minor Surgery. By W. I. DE C. WHEELER.
2. The Irish Recommendations of the Royal Commission on the Care and Control of the Feeble Minded (A Digest). By W. R. DAWSON.
3. Remarks on Atrophy of the Testicle. By CHARLES GREENE CUMSTON.
4. Gas in the Stomach: Its Causation and Treatment. By FRANK KENNEDY CAHILL.

1. **Local Anæsthesia in Minor Surgery.**—Wheeler divides the manner of employing local anæsthesia into two great classes—the infiltration and the regional methods. Of these two, the infiltration is by far the more commonly used, being simple and requiring no special anatomical knowledge of the sensory nerves. Against the infiltration method it may be said that the operation is prolonged, and the results as regards pain more uncertain than when a general anæsthesia or the regional method is employed. The advocates of the infiltration method are notably Schleich and Kocher. It consists in the infiltration of the tissues, layer by layer, with a solution of a local anæsthetic, injecting first into the cutis, producing a blanched and œdematised wheal, or, since the introduction of adrenalin, the needle may be passed subcutaneously, and the vitality of the skin consequently not interfered with. As the operation proceeds, layer by layer is infiltrated, bearing in mind that nerves, periosteum, and parietal peritoneum are extremely sensitive; tendons, muscles, and fasciæ, on the other hand, can be divided with impunity. It is not quite correct to say that infiltration of the tissues produces local anæsthesia, analgesia is the proper term, because though no pain is felt, the patient can often say when a knife or when a scissors is being used, and so sensation is not completely lost. This effect is produced by deadening of the superficial nerve

endings. By regional anæsthesia, Corning and Oberst, who advocated it, meant the direct introduction of an anæsthetising fluid into the great nerve trunks. This produces a physiological nerve block arresting afferent and efferent impulses. The method requires an accurate anatomical knowledge of the course and distribution of the sensory nerves, and, in addition, infiltration of the tissues must be employed in order to expose and inject the nerve. For these reasons the method is troublesome; but, if employed, produces the most perfect anæsthesia. The author then speaks of some of the various drugs employed, cocaine, beta eucaine, tropacocaine, stovaine, and novocaine, and states that he uses exclusively novocaine, combined with adrenalin.

3. Atrophy of the Testicle.—Cumston says that atrophy of one or both testicles may result from the most varied causes, but it must be pointed out that in every case the direct ætiological factor is an orchitis. No matter from what cause the orchitis may develop, it can, under certain conditions, give rise to atrophy of the organ. Foremost among all is gonorrhœal orchitis followed by atrophy. Likewise, there is frequent atrophy of the testicle following a tuberculous or syphilitic orchitis. Sometimes this occurs without any definite manifestation of an inflammatory process, while in others gummata or tuberculomata arise, destroying a portion of the parenchyma, while the remainder undergoes a sclerotic process. In syphilis the primary overgrowth degenerates with a shrinking and hardening of the organ in about fifty per cent. of the cases, after which fibrous induration takes place. The parenchyma is destroyed by contraction of the interstitial tissue; the remaining portion of the testicle will then be found hard and insensible to the touch, usually much smaller in size than its healthy neighbor. Regarding tuberculosis, it may be said that occasionally a hypertrophy of the testicle may be encountered in phthisical subjects, although apparently there has been no lesion in the organ to account for this. Orchitis may arise during the course of influenza, typhoid fever, or elephantiasis, atrophy being the result. Another important factor is traumatic orchitis.

EDINBURGH MEDICAL JOURNAL

May, 1909.

1. The Teaching of Medicine and Clinical Medicine in the Edinburgh Medical School; Systematic Lectures, Hospital Work, Examinations; Suggested Alterations; Consolidation and Unification of the University and Extramural Sides of the Medical Part of the Royal Infirmary. By BYRON BRAMWELL.
2. The Orbital Complications of Suppuration in the Frontal and Ethmoidal Air Sinuses. By A. LOGAN TURNER.
3. Renal Decapsulation in Puerperal Eclampsia. By Sir J. HALLIDAY CROOM.
4. Renal Decapsulation in Puerperal Cases. By R. C. BUIST.
5. The Physiological Basis for Decapsulation of the Kidney in Eclamptic Anuria. By H. OLIPHANT NICHOLSON.

2. Complications of Suppuration in Air Sinuses.—Turner, in speaking of the treatment, says that we have to consider whether the onset of orbital complications should be made an indication for opening the affected frontal and ethmoidal sinuses by an external operation. Notwithstanding

the fact that a number of cases have been recorded in which inflammatory œdema of the eyelids complicating an acute inflammation of these sinuses have been completely cured by endonasal treatment, he is of the opinion that the external operation is the wiser procedure. It is often impossible to say whether the orbital swelling is merely due to œdema, or whether pus has already formed within the cavity of the orbit. Early evacuation of an abscess in this situation is essential, not only for the preservation of the function of the eye, but in order to prevent the risk of secondary intracranial complications. In cases of chronic sinus suppuration, in which an abscess forms in the orbit, there is in all probability caries and destruction of a part of the bony wall of the sinus contiguous with the orbit; consequently an external operation is the only possible procedure. The incision should be made immediately below the eyebrow, and great care should be taken to detach the periosteum from the inner and upper wall of the orbit without injuring it, and exposing the orbital fat. As a rule, the pus is found between the periosteum and the bone. The ethmoidal cells can then be freely opened by the removal of the lamina papyracea, and the frontal sinus can be explored by removal of the inner portion of the roof of the orbit which forms the floor of the sinus. The sinuses may then be dealt with according to the condition and size of the cavity. In the ethmoidal cells it will probably suffice to establish a large communication with the nasal cavity, while the orbital wound is lightly packed, the skin incision being left unsutured for a few days. The nasal drainage is assisted by the removal of the middle turbinate bone. In cases of chronic frontal sinus suppuration the cavity of the sinus should be obliterated by removal of its anterior and inferior walls, preferably by the method described by Killian. An operation which is confined to an orbital incision must be condemned as imperfect, as it only leads to the establishment of a fistulous opening.

3, 4, 5. Renal Decapsulation in Puerperal Eclampsia.—Sir J. Halliday Croom concludes that the indication for decapsulation is not, as Pinard avers, only total anuria, but any case in which the kidney is obviously the organ most seriously implicated, and in which the toxæmic changes have not advanced too far. The rationale of the operation appears to be that the stripping or incision of the capsule permits the restoration of the circulation through the kidney, and thus causes a diuresis, and so aids the elimination of the toxine. The passing of a normal quantity of urine of ordinary density is not enough; far more under such circumstances is required, and this is just what decapsulation achieves. This operation should only be undertaken post partum.—Buist, from his experience, says that the operation has a claim upon the consideration of the physician in cases in which kidney disease is not improving, though only by considerable extension of our present experience can a final judgment as to its usefulness be arrived at.—Nicholson remarks that there are only two ways in which it is possible to get blood to flow through the kidney again and thus reestablish the secretion of urine. One way is to dilate the renal arteries, and thus induce blood to flow into the kidney while the general blood pres-

sure remains much the same. There are certain drugs—particularly the nitrites—that have the power of dilating vessels, and which appear to act specially upon those of the kidney, thus securing for it a larger amount of blood. In this way the glomeruli are refilled with blood, and urine begins to be secreted again. The other way to start the flow of blood through the kidney in eclamptic anuria is obviously to lower the pressure of blood in the renal veins. This is really the thing most urgently called for, but it is difficult to do by means of drugs, and in any case it takes time. But if anuria is complete, and the patient is gravely ill, and we have failed to get blood into the kidney by way of the renal artery, then there is no doubt that the quickest and most useful thing to do is to expose the kidney and draw off blood directly from the venous plexuses of the organ.

AMERICAN JOURNAL OF OBSTETRICS.

June, 1909.

1. Cæsarean Section in Placenta Prævia, By C. JEWETT.
2. The Indications for Abdominal Cæsarean Section in placenta Prævia, By H. D. FRY.
3. Sterilization in Cæsarean Section, By J. O. POLAK.
4. The Justifiability of Sterilizing a Woman after Cæsarean Section with a View to preventing Subsequent Pregnancies, By C. M. GREEN.
5. Further Reasons for Examining and if Necessary Removing the Vermiform Appendix in Every Case of Abdominal Section, By A. LAPHORN SMITH.
6. The Nurse as Anæsthetist, By J. M. BALDY.
7. Renal Excretion during the Administration of Chloroform and Ether in Gynecological Surgical Operations, By J. W. BOREE.
8. Conservatism in Surgery of the Pelvic Organs, By H. J. BOLDT.
9. Note on Acute Dilatation of the Stomach Postoperative, By E. G. GRANDIN.
10. Streptococcus Infection of the Breast in Pregnancy, Medullary Carcinoma of the Breast in Pregnancy, By E. P. DAVIS.
11. Acute Anterior Poliomyelitis, By J. D. MORGAN.
12. Anterior Poliomyelitis, By H. W. FRAUENTHAL.

1. Cæsarean Section in Placenta Prævia.—Jewett declares that the essential considerations in weighing the claims of Cæsarean section as against obstetric measures in placenta prævia are blood loss, shock of operation, and life saving possibilities for the child. Lessened risk of infection and uterine laceration are also given as advantages for the Cæsarean operation. Subsidiary questions are anæmia and exhaustion, the extent of prævial implantation, the stage of dilatation, the dilatibility of the cervix, and the viability of the child. In incomplete prævial insertion by hydrostatic pressure or combined version, or both, usually arrest the hæmorrhage, and in many cases in which the prævial implantation is complete. Ligation of the uterine arteries may be the solution of the question of hæmorrhage. The shock of Cæsarean section argues against its performance, especially in a patient already anæmic. As between a skillful section and an equally skillful obstetric delivery the latter would cause less shock. In the interest of the child if viable, the Cæsarean section has manifest advantages, though this does not apply to the vaginal section.

3. Sterilization in Cæsarean Section.—Polak concludes that a woman who is subjected to Cæsarean section should be sterilized, under the following conditions: 1. If she requests it. 2. After a

repeated (second) section in the presence of the absolute indications, if the proper consent can be obtained. 3. If the existing pathological conditions indicate extirpation of the uterus, in the interests of the patient's life and health, sterilization may be done if necessary without consent. In elective and uncomplicated hysterectomies excision of the proximal ends of the Falloppian tubes at their origin in the uterus, and occlusion of the severed end by flattening it out and suturing it to the peritoneum on the posterior fundal wall is the operation of choice. The Porro operation should be elected if there is infection of the uterus, or atony with uncontrollable hæmorrhage. When possible one or both ovaries should be retained to avert the operative menopause.

5. Further Reasons for Examining and if Necessary Removing the Vermiform Appendix in Every Case of Abdominal Section.—Smith thinks the Trendelenburg posture has contributed most to the improvement in abdominal surgery in the last quarter century. The lesson of the appendix is also of great importance, and the writer thinks an abdominal section should be commenced by inspecting this organ, and removing it if necessary. In fact, he is privately of the opinion that it would be immensely advantageous to the patient to begin every abdominal operation with the removal of the appendix. The more we realize the possible dangers from the presence of the appendix, especially during the puerperium the stronger the argument for always removing the organ.

Proceedings of Societies.

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Sixth Annual Meeting, Held in Washington, D. C., Saturday, April 10, 1909.

(Concluded from LXXXIX, p. 928.)

The President, DR. JAMES M. ANDERS, of Philadelphia, in the Chair.

The Relation of House Flies to the Spread of Disease.—Dr. HENRY SKINNER, of Philadelphia, said in this paper that the house fly, *Musca domestica*, laid its eggs in horse manure, decayed vegetable matter, decayed meat, cow dung, human excrement, etc., but the vast majority of house flies were bred in horse manure. They were formerly considered beneficial insects, owing to the habits of the larvæ in the destruction of effete vegetable substances; but this view was no longer tenable. In 1899 Dr. Skinner had published an article calling attention to the danger from the house fly as a carrier of typhoid fever. Many investigations in the same direction had since been made, and the interest and importance of the subject were being generally recognized by medical sanitarians and medical biologists, as well as by health boards and other civic bodies. Wherever flies could gain access to material containing the *Bacillus typhosus*, they were almost certain to carry it to food.

House flies had also long been suspected of being agents in the dissemination of cholera. They were known to carry other intestinal diseases. So

far as had been discovered, however, the house fly was only a mechanical conveyer of bacteria, and was not the host of any known animal pathogenic organism similar to the protozoan organism that caused malarial disease. Flies would also feed on tuberculous sputum, and deposit living tubercle bacilli in their excrement upon food exposed for sale.

As preventive measures, wire screens, sticky papers, wire traps, fumigation with pyrethrum powder, etc., all had a limited use; but it was scarcely fair that owners of stables should be allowed to impose this tax upon their neighbors. Horse manure bore about the same relation to the house fly that stagnant water did to the mosquito. If the insect could be prevented from depositing its eggs in horse manure, the fly as a pest would be largely a thing of the past. Various articles had been mixed with manure for the purpose of destroying the fly larvæ, with more or less success, but it was better not to allow manure to accumulate. If allowed to do so, it should be stored in properly constructed bins or screened compartments. A good method was to ram it firmly into barrels that could be tightly covered. The motor car might become a factor in the destruction of house flies, as in the near future the horse might have only a limited use. If people went to half the trouble to prevent flies that the surgeon took to bring about asepsis and antiseptics, the object would be accomplished.

Dr. P. M. ASHBURN, of the United States Army, said that a year or two ago he had had a number of slides covered with yaws serum, when he discovered a busy fly engaged in eating some of the serum. He caught the fly, and found in its proboscis two larval nematodes that were indistinguishable from strongyloides. He thought that in this way the fly might be a bearer of intestinal parasites—possibly of uncinaria. Dr. Skinner had mentioned the greater prevalence of flies in the tropics, but Dr. Ashburn said that from personal observation of conditions in the Philippines he would state that house flies were much less common there than in the United States in the summer time. He had recently been making inquiries in regard to their prevalence in Liberia, and had learned from a gentleman who had spent a good deal of time in that country that the house fly was very uncommon there as compared with this country.

Dr. O. T. LOGAN, of Changteh, China, said that in China the blue bottle fly was more common than the house fly.

Dr. W. P. CHAMBERLAIN, of Jackson Barracks, La., confirmed Dr. Ashburn's statement that house flies were less common in the Philippines than in the temperate portions of the United States in summer.

Dr. GEORGE DOCK, of New Orleans, said that the only way to get rid of house flies was to observe absolute cleanliness. For the benefit of those living near stables, he mentioned a method of keeping flies down that he thought pretty effective. It was first mentioned in a French medical journal about a year ago, and attention was called to it by Dr. W. S. Carter, of Galveston, who kept his laboratory free from flies by having soup plates containing sugar water and formalin placed about the room. It was

only a one per cent. formalin solution. Dr. Dock repeated this experiment, but was not so successful, and found that this was because the solution used was not strong enough. In reading over the French article, he discovered that a ten per cent. solution had been used. The odor could not be perceived, but the flies were absolutely destroyed. The plates became filled with them, but none were seen around the room.

Dr. H. L. VIERECK, of Washington, said that at a laboratory in Harrisburg, Va., while specimens were being immersed in four per cent. formalin, it was found that flies were attracted by the formalin solution, which they lapped up, and from which they died in great numbers.

Dr. SKINNER said that there were numerous records of places in the tropics in which house flies were very abundant. He considered that it would be very valuable to get further information in regard to the distribution of the house fly. It was distributed pretty well all over the world, and, from accounts in various journals, seemed to be especially prevalent in southern Europe. He thought that it would be of great interest if some of the gentlemen who had absolute knowledge of its distribution in the tropics would publish this information. He himself would be glad to obtain such articles and have them published. The distribution of all objects in nature was of great interest, and everybody would be glad to learn why flies were scarce or did not exist in some places, as this might be the means of bringing out important scientific facts.

The Ætiology of Pellagra.—Dr. C. H. LAVENDER, of the United States Public Health and Marine Hospital Service, read a paper on this subject (see page 54).

The Relation of the Production and Utilization of Maize to Pellagra.—Dr. CARL L. ALSBERG, of the Bureau of Plant Pathology, Department of Agriculture, Washington, read this paper (see page 50).

Dr. GEORGE DOCK said that from Dr. Alsberg's remarks one might get the idea that pellagra had developed in the United States on account of the change of conditions for the raising and selling of corn. Some believed this, but others thought that the disease had existed before but been overlooked. Dr. Dock had heard of cases in the South that had occurred before the existence of those changed conditions, and he strongly suspected that he himself had seen a case in Texas. At the time he had taken it to be dermatitis. He considered it a matter of minor importance, however, whether it existed years ago or not. The main point was that it existed now, and in a form difficult to recognize and undoubtedly very often mistaken. When one realized how absolutely uncinariasis had been overlooked for a long time, one would readily admit that the same might occur with pellagra. Therefore a great extension of clinical knowledge regarding the latter disease was needed.

Dr. Dock then referred to a typical case of pellagra and one less typical that he had seen in a hospital in Atlanta, and to three suspected cases that he had since examined in New Orleans. In one of the latter there was a quite characteristic dermatitis, with rough skin, discoloration, etc. In another of these

cases the symptoms were also very suspicious, but in none were there any alterations in the mucous membrane or marked gastrointestinal disturbances. The clinical recognition of the disease was difficult in the less marked cases, so that anything that the members of the society or the general government could do in sending out circulars and clear descriptions of the clinical conditions and modes of advance in pellagra ought to do a good deal of good.

Dr. J. M. ANDERS, of Philadelphia, said that he had received a note from Dr. Theodore C. Merrill, of Colorado, Texas, inclosing a report on pellagra for the State of Texas, which he wished to read. The note was as follows:—

"The result of recent investigation concerning Texan pellagra may very well be stated in the phrase 'There isn't any.' Inquiry sent to the various State institutions and army posts within the State reveals not a single recorded case for the years 1898-1908 inclusive. Dr. M. L. Graves, professor of medicine in the State University Medical Department, writes me that he has been on the lookout for the disease for several years, but has not yet seen a case. Questions addressed to various medical men throughout the State fail to bring to light either epidemics, endemic outbreaks, or isolated cases. Some time ago I reported a case diagnosed as pellagra in the *Journal of the American Medical Association*. I cannot give the date of its publication, but it is easily to be found. I trust I was duly cautious, but as I took great care in describing the symptomatology present, and also had examination thoroughly made of suspected corn meal, it may be that my case was really one of pellagra. From economic reasons it is very gratifying to have only general absence of this disease to report for this State. If at any time I may be able to discover any obscure pellagralike epidemics, I shall try to investigate them carefully."

Dr. ANDERS called attention to the fact that, of 106 cases of pellagra collected by Wood, seventy had occurred in North Carolina. This suggested the probable influence of locality as a predisposing factor. Dr. Anders referred to an acute form of pellagra prevalent in the southern States, which proved fatal in from four or five weeks to three months, this form being unknown in Italy. The average duration of cases in the United States, even in the chronic form, was only three years, whereas it was at least five years in Europe. Therefore, racial influences apart, the marked influence of locality, including possible climatic conditions, must be taken into account in any attempt to solve the problem of the etiology of this disease. He did not mean to imply that the conditions in the two countries were different, but that there was a more acute manifestation or development in these United States.

Dr. EDWARD R. STITT, of Washington, related a conversation that he had had five years before with Dr. Sandwith concerning the existence of pellagra in the United States. Dr. Stitt said: "It seems strange that we have no pellagra in the United States when one considers that this is a great maize eating country." Dr. Sandwith replied: "You have not the poverty in the United States that they have in Italy and Egypt." "There is a great deal of pov-

erty in the South," responded Dr. Stitt. "Well," said Dr. Sandwith, "your maize is good." "I beg to differ with you again," said Dr. Stitt. "There is a good deal of spoiled corn meal eaten there." Dr. Sandwith absolutely maintained that the aspergillus was the cause of the disease. Dr. Stitt said that he did not know what the cause was, but that the corn was just covered with mould. "Ah!" said Dr. Sandwith, "but have you no pellagra in the United States? I am sure that I have seen two cases there." Dr. Sandwith also suggested that it would be a good plan to have American physicians see cases of pellagra in Egypt, where the disease occurred in its most typical form. Dr. Stitt visited the Kasr el Ainy Hospital in Cairo in the month of August and saw seven cases in the wards. Dr. Phillips was showing these cases to him. At each case they came to Dr. Stitt would say: "I should not be able to see anything in that case"; and Dr. Phillips would reply: "There is not much to see in it now, but there would have been, if you had seen it in April or May. In these months the cases of pellagra show certain symptoms that have disappeared by August." In not a single one of the seven cases shown Dr. Stitt as pellagra could he see any typical symptoms. Dr. Phillips said that there were tremors and other things of that sort present, but no other symptoms.

Dr. WILLIAM S. THAYER, of Baltimore, referred to a case that he had seen in 1905, which presented a typical picture in many respects. The patient was the sister of a physician living not far from Baltimore. She had had two previous similar attacks, associated with diarrhoea, an eruption on the back of the wrists, and marked stomatitis. The condition lasted a month or so, and then cleared up. Dr. Thayer happened to have been reading an article on pellagra the day before he was called to see this patient, or he would not have recognized it. The skin on the back of the hands was discolored with crusts, exactly like the pictures he had seen of pellagrous changes. The patient was in a dull, drowsy, stupid mental condition, and would not answer questions. She had evidently had some delusions, and the whole picture was like that of pellagra. There was no change in the reflexes, but she had a peculiar puffiness under the eyes. Something about her appearance suggested myxedema to Dr. Thayer, though there was no particular swelling in any other part of the body. He could not feel any thyroid swelling. The patient was put upon thyroid extract, with immediate recovery, and no relapse. Dr. Thayer had often wondered whether this could have been a case of pellagra, after all. In that case, he thought it would be worth while to investigate whether thyroids would not do good in that disease.

Dr. Thayer said that the action of arsenic in pellagra was remarkable. Intensive arsenical treatment had produced some very good results in trypanosomiasis. Therefore it was worth while to try its effect in pellagra. In a reported case, on two successive days seven grains of atoxyl were administered hypodermically, and seventy-five grains of an ointment containing arsenous acid, 1 to 5, were rubbed in. Several pills of arsenous acid were also administered. If necessary, this treatment should be repeated on two successive days a week later.

Forty cases were reported, several of them being obstinate. In many of these there was a prompt recovery, and it was unnecessary to give the treatment a week later. Dr. Thayer considered this result so remarkable that he could not help feeling skeptical regarding it.

Dr. THOMAS B. FUTCHER, of Baltimore, asked whether it was known how long a person must be subjected to the infection in order to acquire the disease. He wished to know whether eating one meal of infected maize would produce it, or whether it was necessary for an individual to be subjected for a long time to the toxine or germ.

Dr. ALSBERG said that he did not think that there were any exact data regarding this point. In Italy the disease broke out in the spring, and seemed to be connected with the open air life and the hard work done by the person. In Egypt it occurred in the spring and in the fall. There was a small occurrence in the fall in Italy also. In regard to the difference between pellagra here and in Europe, Dr. Alsberg was not sure that there was any real difference. He had seen cases of pellagra some years ago in Italy in the spring; but, unfortunately, he was not then interested in that disease, and did not imagine that he would ever have anything to do with such cases. His impression, however, was that the early cases were very slight indeed, and that one mild spring attack was followed by a severe one the next spring. He believed that it would probably require three years before a case would require serious attention. He thought that a good many of the early cases were overlooked in this country, especially in colored persons. He had not had much experience in treating colored people, but he thought it would be difficult to discover an erythema on their skins; and one would expect most cases of pellagra in the country to be in colored people.

Dr. LAVINDER said that he had done some work with Dr. Wood. It seemed to him, however, that not enough reports had been received from men who had seen the disease clinically to enable one to draw conclusions. The mortality from measles among us was not very high, but, if introduced into a virgin population, it would be an exceedingly fatal disease. Even if pellagra was a food poisoning, one might expect the same thing to be true of it. While the Italians did have an acute pellagra, what they meant by this term was an acute exacerbation of a chronic case. He suggested that it would be well to adopt one pronunciation for the word pellagra, as four different ways of pronouncing it had been heard during the afternoon.

The Method of Teaching Tropical Medicine.—This was the title of a paper by Dr. EDWARD R. STITT, of Washington (to be published).

A Method for the Preparation of Flat Worms for Study.—Dr. A. J. MINK, of Washington, said that gross specimens of tapeworms were best obtained in a clean condition by mixing the fecal material with warm salt solution. For histological examination he found Zenker's fluid the best fixative. He embedded his material either in celloidin or in paraffin. Sections were made of satisfactory appearance from fifteen to twenty-five micra thick. The best stain was found to be a rapidly acting, purely nuclear hæmatoxylin. For mounting whole

segments, the specimens were washed in normal salt solution and fixed in two per cent. formalin for from fourteen to sixteen hours. The specimens were then transferred to a glucose medium composed of syrup (glucose, 48 parts; water, 52 parts) 1,000 c.c.; methyl alcohol, 200 c.c.; glycerin, 100 c.c.; camphor, q. s. to keep. The specimens cleared in this medium in about five hours, and they were then mounted in Keisser's glycerin jelly.

Dermatobia Noxialis Infection; Report of a Case Contracted in Southern Mexico.—Dr. J. D. MANGET, of Atlanta, Ga., said that the patient who furnished the subject of the report, while on a business trip in southern Mexico, had gone in swimming on a number of occasions, and had been bitten by the flies and gnats so common there. Ten days later malaise and slight fever developed, for which he took quinine and purgatives. Three weeks after the first exposure, not having improved, he put himself under the care of a physician, who diagnosed the case as malarial, and told him that the lesions on his back and shoulder were due to the "malaria working out." In these lesions the patient felt lancinating pains, which were very sharp, but would last for only a few seconds at a time.

Not having improved, he consulted Mr. Manget six weeks after the first exposure. Five lesions, looking like furuncles, were present on the back and shoulder, all but one of which were discharging. This one was hard and felt like a bullet under the skin. Dr. Manget excised and examined it. It had given no pain for quite a while, and seemed to be drying up. On examination, it was found to contain a small larva undergoing chrysalis formation. The other lesions were then incised, and a motile larva expressed from each. The diagnosis of cutaneous myiasis due to the larvæ of the biting fly, *Dermatobia noxialis* was made.

Blood Pressure in Yellow Fever.—Dr. J. BIRNEY GUTHRIE, of New Orleans, said that as a result of a study of the blood pressure in thirty-four cases of yellow fever in the Emergency Hospital of New Orleans, he concluded that a low average pressure was a favorable prognostic sign of no little importance, and that, plotted to the same spaces, a crossing or touching of the curves of blood pressure and pulse, respectively, was of great significance in a case in a male adult when there was no doubt of the diagnosis. A single observation of blood pressure was of no value, but a record from day to day was vastly instructive in yellow fever. Dr. Guthrie's charts showed that, taken in conjunction with the pulse curve, a characteristic paralleling occurs, not seen even in typhoid fever, in which considerable slowing of the pulse occurred. The higher average blood pressure in severe and fatal cases as compared with the mild ones, coupled with a consideration of the pathological findings, hemorrhagic in nature, accentuated the necessity of considering the blood pressure in the therapeutic management. Dr. Guthrie did not advise that drugs that tended to lower the blood pressure should be given. Drugs played but a small part in the treatment of yellow fever. By bearing in mind the important physical means at one's command to keep down the blood pressure one might contribute somewhat toward the safety of the patient.

Dr. C. C. BASS, of New Orleans, said that in 1905 the hospital with which he was connected sent him the chart devised by Dr. Guthrie. Unfortunately, however, though a number of observations were made, Dr. Bass had never classified them. He felt certain that the general observation of a decline of blood pressure with a decline of pulse rate was the rule. It was noticed, however, by the physician who was observing the cases with Dr. Bass that in negroes the blood pressure did not decline as in white patients, and the negroes did not have the same amount of nephritis or die at the rate that the whites did. The association of nephritis with an increase of blood pressure was also confirmed in two cases, one patient dying with absolute suppression of urine and the other with nephritis and black vomit. Both had high blood pressure, and all the physicians connected with the hospital remarked that it seemed strange that these patients should have got weaker and died, while those with a low blood pressure did better. It did not occur to them that the nephritis was the cause of the increased blood pressure, and probably also of the death of the patient.

A Note on the Ipecac Treatment of Amœbic Dysentery.—This was the title of a paper by Dr. GEORGE DOCK, of New Orleans (see page 49).

Dr. STITT said that in the Philippines most excellent results were obtained by the use of ipecac, so that the surgeons on the ships began giving it as soon as the men showed symptoms of dysentery. When a man came to the hospital no motile amœbæ could ever be found. In order to discover these, the hospital physicians had to ask those outside not to give ipecac until the men entered the hospital. Dr. Stitt said that he had had an amœbic affection for two or three years, and that the only thing that would do him any good was ipecac. After using this for three or four days, however, it would cause him to lose his appetite, and he would then have to stop taking the drug.

Dr. ANDERS asked whether Dr. Dock had met with any patients who were cured. Some years ago he had come to regard ipecac as a specific, but more recently he had had under observation a patient in whom ipecac produced only an apparent cure. The patient returned a few months later, and this time the ipecac treatment failed. Irrigation with quinine seemed to do more good, but soon became ineffective. Finally he tried irrigation with quinine and copper sulphate alternately. That seemed to do the most good, though a few amœbæ remained. Enterostomy was then done, and the bowel irrigated from above. The patient, who was an intelligent man, regarded himself as perfectly well after this, though he still showed some *Amœba dysenteriae* in his stools.

Dr. ASHBURN said that he had begun to use ipecac for dysentery in 1897, and had continued to use it ever since in acute cases. He had seen only two cases that did not promptly end in recovery under the ipecac treatment, if the patient retained the drug. If the patient could not retain it, the occasionally went into the chronic form. If he could not cure amœbic dysentery within a month, he felt doubtful of ever curing it. Although he had seen benefit from the use of ipecac in chronic cases, he thought that the benefit was usually temporary, but he be-

lieved this temporary benefit from ipecac to be more than he could obtain from other remedies.

Dr. Dock, said in answer to Dr. Anders's question, that a good many of his patients had left the hospital immediately, and he had been unable to follow them up. He considered ipecac more effective at once than any other drug, and he had had rather better results in cases of long standing than with any other drug. Two of his patients had been taking what was thought to be the most efficacious treatment except with ipecac, namely the quinine irrigations.

Officers for the Ensuing Year.—The following officers were elected for 1909-1910: President, Dr. William C. Gorgas, of Ancon; vice presidents, Dr. William S. Thayer, of Baltimore, and Dr. Rudolph Matas, of New Orleans; treasurer, Dr. Charles Lincoln Furbush, of Philadelphia; secretary, Dr. John M. Swan, of Philadelphia; assistant secretary, Dr. Edward R. Stitt, of Washington; councillors (to serve for two years), Dr. Ramon Guiteras and Dr. James Ewing, of New York.

Dr. William S. Thayer, of Baltimore, and Dr. James M. Anders, of Philadelphia, were elected managers of the International Society of Tropical Medicine.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Ueber die Wirkung moderner Projektil. Festrede zur Feier des 59. Stiftungsfestes der physikalisch-medizinischen Gesellschaft zu Würzburg. Von Dr. F. RIEDINGER, Professor an der Universität Würzburg, k. bayer. Hofrat und Generalarzt a. I. S. Mit neun Röntgen- und drei Geschosstaafeln. Würzburg: Curt Kabitsch, 1909. Pp. 30. (Price, 4 Mk.)

This address is a comprehensive discussion of the action, upon the tissues of the body, of the modern jacketed bullet of high initial velocity, with special reference to the pointed (sharp nosed) or conical rifle bullet recently adopted by the German military authorities. This bullet is known as the "S" bullet and differs from the older (ogival), or blunt nosed, form, not only in its conical shape, but also in its length and weight, changes which affect its ballistic properties. The speaker touches upon the evolution of the rifle and its ammunition, and discusses the various theories which have been advanced to explain the diverse effects produced upon different tissues at different ranges.

The action of the new bullet is compared with that of the older forms, and the conclusions arrived at are that, in general, injuries to the bones will be accompanied with more splintering, and to the soft parts with greater destructive action. These, he explains, are due to the greater initial velocity of the missile, achieved by its pointed shape encountering less atmospheric resistance, and to the fact that, as the centre of gravity of the projectile lies nearer its base, it has a tendency to rotate upon its transverse axis upon meeting with slight resistance. For this latter reason it has, at long ranges, a diminished energy and a lesser efficiency than the older forms, but is more effective at the shorter ranges on ac-

count of its higher initial velocity and greater precision. It is more prone consequently at the long ranges to remain in the body. The opinion is expressed that the sharp point of the bullet is more apt to perforate the vessel walls and nerve trunks; the same views were expressed in the case of the ogival bullet, but were not fulfilled. The author also expresses the opinion that the intestines are exposed to greater danger in perforations of the abdomen, but does not show why this should be the case. Regarding chest wounds, unless transverse rotation of the missile takes place, no change in character is expected. The prognosis of wounds of the skull is said by Dr. Riedinger to become graver on account of the severe splintering of the bones, but experience with the older forms of projectiles in such injuries shows almost invariably fatal results. These conclusions, it should be noted, are not based upon experience in war, but upon experiments upon the cadaver, and will probably be modified by difference in conditions.

With reference to the principles of surgical procedure upon the field, Dr. Riedinger is of the opinion that it will undergo no change, but that primary amputations, ligations of large vessels, and laparotomies may possibly become more common; an opinion which will probably be accepted by few military surgeons, as the conditions under which modern battles are fought preclude the probability of cases demanding operations of this character ever reaching the dressing stations in time to permit of their performance.

The publication is well illustrated with nine Röntgen plates of gunshot wounds of bones and photographs of wounds of entrance and exit, two plates representing the historical evolution of the muzzle loading and breech loading musket bullet, and one photographic plate of the effects upon the pointed and blunt small calibre bullet when fired upon water.

Lehrbuch der Augenheilkunde, bearbeitet von mehreren Fachgelehrten. Herausgegeben von THEODOR AXENFELD. Mit 10 Farbentafeln und 455 zum grossen Teil mehrfarbigen Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. 679.

The purpose of this book is stated to be to aid in clinical teaching, not to be a work of reference, and for that reason it has been made brief. The principal features that distinguish it among German textbooks are the facts that it is not the product of the work of one man only, but of several men, a feature usually of encyclopedic works of reference, and that particular attention is given to the description and illustration of methods of technique. The introduction, which may be termed the therapeutics of eye diseases in general, and the method of examination of the eye are written by Axenfeld himself. This is followed by a chapter on ophthalmoscopic diagnosis by Elschnig, in which the appearances in various conditions of the fundus are dealt with, occupying twenty pages. Functional testing, including physiological optics, refraction, the color and light sense, binocular vision, simulation, and aggravation, by Heine, occupies about eighty pages; muscular disturbances, by Bielschowsky, about forty. Von Hippel then furnishes a chapter on embryology and congenital anomalies, fol-

lowed by another on diseases of the lids. Diseases of the lacrymal organs are considered by Schirmer in fewer than twenty pages. Diseases of the conjunctiva, by Axenfeld, are followed by diseases of the cornea, by Elschnig, diseases of the uvea, by Krueckmann, and diseases of the lens, by Bach. About twenty-five pages are then given to a consideration of the lymph circulation and glaucoma, by Peters, after which Greef furnishes a chapter on diseases of the retina and another on diseases of the optic nerve and optic tract. Injuries and sympathetic inflammation, by Schirmer, diseases of the orbit, by Peters, and the eye symptoms in general diseases, by Heine, complete the book. Each writer deals with his subject in a concise manner, which seems to the reviewer to make the book one of the clearest German works he has ever read, and the illustrations are excellent. The different writers seem to be up to the times, and yet the debatable subjects of the day appear to have been avoided to a great degree, and the work may be highly recommended for the purpose intended, to be used as a textbook for students.

Medicoliterary Notes.

In the *July World's Work* a plea is made for the establishment of a National Bureau of Health. The idea seems to be, first to make a sort of spotless town of Washington as an object lesson to the rest of the country. It is averred that Irving Fisher has "shown" that if preventable diseases were prevented, human life would be prolonged by a decade and a half; a most gratuitous assumption we think. There will be wear and tear when the last microbe has been squelched. Mr. Fisher begins a series of articles on Simple Rules for Right Living by a list of those already familiar to every schoolchild.

In the *July Lippincott's* Dr. George Lincoln Walton begins a series of three articles on Those Nerves by one entitled The Human Sensitive Plant. Advice, which we but faintly hope will be useful, is offered to those egotists who suffer acutely whenever they are not the centre of attention. Psychotherapy is shown to be an ancient branch of treatment; Dr. Walton quotes Petronius: *Medicus nihil aliud est quam animi consolatio*. The sentence inspires us, with apologies to the writer, to parallel his translation.

Who is your doctor? Best you'll find
Him who is solace to your mind.

It is interesting to learn that Trollope's *Dr. Thorne*, published fifty years ago, has a steady sale quite as large as in its early days. The character seems to have taken hold of the reading public at once, and that fact is remarkable when we think of the customs of the time. Dr. Thorne neither smokes nor drinks, is opposed to the corporal punishment of children, is a bachelor, dispenses his own medicines, talks plainly to his fanciful women patients, and has the confidence of every man, woman, and child in his neighborhood, with the exception of his antagonist, Dr. Fillgrave. A lovely character, born half a century before his time, and still a model for the young practitioner, his early life will charm any professional reader. Alas! In later novels of the

Barsetshire series Trollope brings Dr. Thorne again into view. He is in the background and somewhat disappointing. He marries the heiress to a patent ointment, middle aged and unprepossessing, although of charming mental characteristics, thereby coming into possession of several millions of money. We do not know what possessed Trollope to crown the history of a beautiful and self denying career with such a performance. Perhaps he thought the marriage eminently appropriate, and considered he had done very well to dispose so advantageously of a mere country doctor. We do not recall so complete a "reversal of form" in any other character in fiction.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service during the week ending July 2, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
California—Hobart Mills.....	April 1-30.....	1	Imported
California—Sacramento.....	June 5-12.....	1	
California—San Francisco.....	June 5-12.....	1	
California—Turkey.....	March 24.....	3	Imported
Georgia—Macon.....	June 1-30.....	1	
Illinois—Chicago.....	June 1-30.....	1	
Illinois—Danville.....	June 1-30.....	2	
Illinois—Peoria.....	May 1-31.....	44	
Indiana—Fort Wayne.....	June 1-30.....	21	
Indiana—South Bend.....	June 1-30.....	1	
Kansas—Kansas City.....	June 1-30.....	3	
Kentucky—Covington.....	June 1-30.....	1	
Kentucky—Nassau.....	June 1-30.....	1	
Kentucky—Paducah.....	June 1-30.....	1	
Louisiana—New Orleans.....	June 1-30.....	3	
Minnesota—Minneapolis.....	May 1-31.....	20	
Missouri—Kansas City.....	June 1-30.....	1	
Montana—Butte.....	June 1-30.....	4	
Nebraska—Lincoln.....	May 1-31.....	14	
North Carolina—In 17 Counties.....	April 1-30.....	87	
Ohio—Cincinnati.....	June 1-30.....	3	
Oregon—Portland.....	April 1-30.....	6	
Texas—San Antonio.....	June 1-30.....	5	
Texas—Saba County.....	April 9-26.....	11	
Utah, State.....	May 1-31.....	135	
Washington—Sukania.....	May 1-31.....	3	
Washington—Tacoma.....	May 1-31.....	2	
Washington—Tacoma.....	June 1-31.....	2	
Wisconsin—La Crosse.....	June 1-31.....	1	
<i>Smallpox—Foreign.</i>			
Africa—Tripoli.....	April 24-May 22.....	39	
Brazil—Rio de Janeiro.....	May 7-14.....	2	
Brazil—Rio de Janeiro.....	May 19-23.....	17	
Ceylon—Colombo.....	May 15-22.....	1	
China—Canton.....	May 1-8.....	5	
China—Hongkong.....	May 1-15.....	5	
Egypt—Cairo.....	May 13-20.....	5	
France—Paris.....	April 3-10.....	4	
Germany—Königsberg.....	May 15-22.....	2	
Germany—Königsberg.....	May 15-22.....	7	
India—Bombay.....	May 18-23.....	12	
India—Calcutta.....	May 8-15.....	58	
India—Madras.....	May 15-21.....	2	
India—Rangoon.....	May 8-15.....	2	
Italy—Genoa.....	May 20-June 9.....	24	
Italy—Naples.....	May 30-June 6.....	7	
Java—Batavia.....	May 1-8.....	3	
Manchuria—Daly.....	May 15-22.....	1	
Mexico—Mexico City.....	June 1-18.....	29	
Mexico—Monterrey.....	June 6-13.....	2	
Mexico—Veracruz.....	May 30-June 13.....	2	
Portugal—Lisbon.....	May 22-June 5.....	1	
Russia—Moscow.....	May 29-June 5.....	51	
Russia—Riga.....	May 29-June 5.....	6	
Russia—St. Petersburg.....	May 15-22.....	8	
Serbia—Belgrade.....	May 22-29.....	2	
Spain—Barcelona.....	May 31-June 7.....	7	
Spain—Valencia.....	May 28-29.....	10	
Switzerland—Geneva.....	May 15-29.....	9	
Turkey in Europe—Constantinople.....	May 23-30.....	9	
Turkey in Asia—Smyrna.....	May 6-13.....	2	
<i>Yellow Fever—Foreign.</i>			
Brazil—Bahia.....	May 7-21.....	41	
Brazil—Para.....	May 28-29.....	3	
Mexico—Mexico.....	June 4-11.....	4	

Places.	Date.	Cases.	Deaths.
<i>Cholera—Foreign.</i>			
India—Bombay.....	May 1-15.....	8	
India—Calcutta.....	May 1-15.....	61	
India—Rangoon.....	May 8-15.....	1	
Russia—St. Petersburg.....	June 2-10.....	58	
Russia—St. Petersburg.....	June 2-10.....	75	
Strait Settlements—Singapore.....	May 1-15.....	6	
<i>Plague—Foreign.</i>			
Brazil—Rio de Janeiro.....	May 16-23.....	1	
Chile—Antofagasta.....	May 15-22.....	1	
Chile—Iquique.....	May 16-23.....	16	(In lazaretto)
China—Canton.....	May 1-15.....	49	(In 14 days)
China—Hongkong.....	May 1-15.....	8	
India—Bombay.....	May 8-15.....	239	4,572
India—Calcutta.....	May 8-15.....	140	
India—Rangoon.....	May 8-15.....	10	
Japan—Yokohama.....	May 28-29.....	1	
Japan—Yokohama.....	June 2-10.....	1	
Peru.....	May 2-15.....	17	
Turkey in Asia—Bagdad.....	May 2-21.....	9	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending June 30, 1909:

ANDERSON, J. F., Passed Assistant Surgeon. Directed to proceed to Detroit, Mich., and Chicago, Ill., upon special temporary duty.

BAILHACHE, P. N., Surgeon. Directed to report at the bureau upon special temporary duty.

BELL, J. M., Pharmacist. Reassigned for duty at Fort Stanton, N. M., to date from February 4, 1909.

BROWN, F. L., Pharmacist. Relieved from duty at Boston, Mass., and directed to proceed to South Atlantic Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

COLLINS, G. L., Passed Assistant Surgeon. Relieved from duty at Cape Charles Quarantine Station; directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

DOOLE, T. P., Acting Assistant Surgeon. Granted three days' leave of absence from June 29, 1909, paragraph 210, Service Regulations.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Directed to proceed to New York, N. Y., upon special temporary duty.

GLOVER, M. W., Passed Assistant Surgeon. Directed to make examination of keepers and surfmen of the Life Saving Service at the Seattle Exposition.

HOLSENDORF, B. E., Pharmacist. Reassigned for duty at San Juan, P. R., to date from February 12, 1908.

HUNT, REID, Chief, Division of Chemistry, Hygienic Laboratory. Detailed to attend the meeting of the American Chemistry Society to be held in Detroit, Mich., June 29 to July 2, 1909.

MACCAFFERY, W. B., Acting Assistant Surgeon. Granted ten days' leave of absence from July 11, 1909.

MASON, M. R., Pharmacist. Reassigned to duty at San Francisco Quarantine Station to date from February 12, 1908.

MCKAY, MALCOLM, Pharmacist. Relieved from duty at the Gulf Quarantine Station, and directed to proceed to Key West, Fla., and report to the medical officer in command for duty and assignment to quarters.

McKEON, F. H., Passed Assistant Surgeon. Directed to proceed to Hongkong, China, for temporary duty.

MORRIS, G. A., Pharmacist. Reassigned for duty at St. Louis, Mo., to date from February 4, 1909.

REIMER, H. B. C., Acting Assistant Surgeon. Granted five days' leave of absence from June 12, 1909, paragraph 210, Service Regulations.

RYDER, L. W., Pharmacist. Granted two days' leave of absence from June 25, 1909, paragraph 210, Service Regulations.

STEARNS, W. L., Pharmacist. Reassigned for duty at Pensacola, Fla., to date from May 25, 1909.

STEVENSON, J. W., Acting Assistant Surgeon. Granted five days' leave of absence from June 26, 1909.

STIER, C., Pharmacist. Relieved from duty at Key West, Fla., and directed to proceed to Gulf Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

TROXLER, R. F. Pharmacist. Leave granted May 28, 1909, for twelve days from June 7, 1909, amended to read ten days from June 7, 1909.

WARNER, H. J., Assistant Surgeon. Directed to assume command of Cape Charles Quarantine Station.

YOUNG, G. B., Surgeon. Granted three days' leave of absence from June 15, 1909, paragraph 189, Service Regulations.

Promotion.

Pharmacist Edgar B. Scott promoted to pharmacist of the first class to date from June 19, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 3, 1909:

EWING, CHARLES B., Major, Medical Corps. Granted leave of absence for two months, about July 25th.

FAUNTEROY, POWELL C., Major, Medical Corps. Ordered to duty at camp at Sparta, Wis.

GIFFIN, ADOLPHE M., First Lieutenant, Medical Reserve Corps. Ordered to active duty July 15th; will proceed to Seattle, Wash., and sail August 5th for service in the Philippines.

HARTSOCK, FREDERICK M., Major, Medical Corps. Ordered to duty at camp at Toledo, O.

KIERSTED, HENRY S., Captain, Medical Corps. Honorably discharged from the service of the United States, with one year's pay.

KIERULFF, H. Newton, First Lieutenant, Medical Reserve Corps. Ordered from Fort Missoula, Mont., to Fort Snelling, Minn., for temporary duty in the field.

LITTLE, WILLIAM L., Captain, Medical Corps. Ordered to Fort Jay, N. Y., for temporary duty.

MCCORNACK, CONDON C., First Lieutenant, Medical Reserve Corps. Ordered from Plattsburg Barracks, N. Y., to duty with troops en route and at Augusta, Me.

MILLER, EDGAR W., Captain, Medical Corps. Ordered to Fort Wayne, Mich., for temporary duty.

OWEN, LEARTUS J., Captain, Medical Corps. Ordered to duty at camp at Toledo, O.

Navy Intelligence:

Official list of changes in the station and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 3, 1909:

GUEST, M. S., Surgeon. Detached from the Naval Academy, Annapolis, Md., and ordered to the Naval Hospital, Las Animas, Colo., for treatment.

HUNTINGTON, E. O., Surgeon. Granted sick leave for three months when discharged from treatment at the Naval Medical School Hospital.

RODMAN, S. S., Passed Assistant Surgeon. Ordered to temporary duty at the Naval Recruiting Station, Indianapolis, Ind.

SHOOK, F. M., Passed Assistant Surgeon. Detached from duty in the department of government and sanitation, Canal Zone, Isthmus of Panama, and ordered to duty at the Naval Medical School, Washington, D. C.

Births, Marriages, and Deaths.

Married.

BINNIE—MOSHER.—In Charleston, West Virginia, on Tuesday, June 15th, Dr. J. F. Binnie, of Kansas City, Missouri, and Miss Ellen S. Mosher.

CASPERSON—NAUDINE.—In New York, on Wednesday, June 30th, Dr. Robert Casperson, of Camden, New Jersey, and Miss Susan Naudine.

DANIELS—SHELL.—In Cripple Creek, Colorado, on Tuesday, June 29th, Dr. Ralph Roy Daniels, of Denver, and Miss Olive Isabel Shell.

ELCAN—MOORE.—In St. Louis, Missouri, on Monday, June 28th, Dr. Joseph J. Elcan, of Mason, Tennessee, and Miss Mary Moore.

FRARY—BASCOMB.—In Springfield, Massachusetts, on Wednesday, June 23d, Mr. Frederick Strong Frary and Dr. Helen Bascomb.

GARRENTON—DUNN.—In Wyncote, Pennsylvania, on Wednesday, June 30th, Dr. Cecil Garrenton and Miss Isabella N. Dunn.

GILDAY—RANDOLPH.—In Baltimore, on Thursday, July 1st, Dr. Walter C. Gilday, of New York, and Miss Lillian Randolph.

GREGG—HIGLEY.—In Canandaigua, New York, on Wednesday, June 23d, Dr. George W. Gregg and Miss Mabel Laura Higley.

HART—RUBIN.—In Burnside, Connecticut, on Saturday, June 19th, Dr. Benjamin I. Hart, of Bridgeport, and Miss Alfreda Lillian Rubin.

HOLDENBY—COE.—In Nutley, New Jersey, on Saturday, June 26th, Dr. Howard Holdenby, of Englewood, and Miss Beatrice Archer Coe.

MARONEY—DANAHY.—In Providence, Rhode Island, on Wednesday, June 9th, Dr. Joseph Maroney, of Westfield, Massachusetts, and Miss Mary E. Danahy.

MORRANT—DIMITRY.—In New Iberia, Louisiana, on Wednesday, June 2nd, Dr. M. T. Morrant, of Jeanerette, and Miss Lizzie Dimitry.

POLLARD—COLE.—In Des Moines, Iowa, on Saturday, June 26th, Dr. C. W. Pollard, of Omaha, Nebraska, and Miss Helen R. Cole.

RUSSELL—MILLER.—In Lewiston, Maine, on Saturday, June 19th, Dr. Maurice Wheeler Russell, of Providence, Rhode Island, and Miss Frances A. Miller.

SAVAGE—HALL.—In Martin, Tennessee, on Tuesday, June 15th, Dr. George Savage, of Memphis, and Miss Neva Hall.

SCHENBERG—KIRK.—In Philadelphia, on Saturday, July 3d, Dr. Joseph Schenberg and Miss Jean A. Kirk.

SIDLEY—HORTICK.—In Racine, Wisconsin, on Wednesday, June 30th, Dr. John Streeter Sidley and Miss Mabel Hortick.

WEISENBURG—FIELD.—In Philadelphia, on Saturday, July 3d, Dr. Theodore H. Weisenburg and Miss Constance V. V. Field.

WHITE—FISHER.—In Philadelphia, on Wednesday, June 30th, Dr. Frank W. White and Miss Elizabeth Fisher.

Died.

CARTER.—In Peoria, Illinois, on Wednesday, June 23d, Dr. Levi W. Carter, aged seventy-four years.

CASE.—In Oneonta, New York, on Monday, June 14th, Dr. Meigs Case, aged seventy-three years.

FITZGERALD.—In Omaha, Nebraska, on Monday, June 21st, Dr. F. E. Fitzgerald, aged thirty-seven years.

GAGE.—In Newark, New Jersey, on Sunday, June 27th, Dr. Ruel S. Gage, aged sixty-five years.

GOOD.—In Osceola Mills, Pennsylvania, on Saturday, June 26th, Dr. Daniel R. Good, aged eighty years.

HALLANAN.—In Logansport, Indiana, on Wednesday, June 16th, Dr. Joseph Hallanan.

HAMMOND.—In Burleigh, Maryland, on Sunday, June 13th, Dr. Richard C. Hammond, aged fifty-six years.

HARRIMAN.—In Providence, Rhode Island, on Sunday, June 20th, Dr. Samuel Knight Harriman, aged sixty-four years.

HERON.—In Washington, D. C., on Sunday, June 27th, Dr. George H. Heron, aged seventy-two years.

HESS.—In Philadelphia, on Sunday, June 20th, Dr. Robert J. Hess, aged sixty-three years.

KOHNKE.—In Covington, Louisiana, on Saturday, June 26th, Dr. Quitman Kohnke, of New Orleans.

MCGUIRE.—In Santa Cruz, California, on Monday, June 21st, Dr. John McGuire, aged sixty-nine years.

MEYER.—In Newark, New Jersey, on Saturday, June 26th, Dr. Franklin L. Meyer, aged fifty-five years.

PADDOCK.—In Norwich, Connecticut, on Thursday, June 24th, Dr. Lewis S. Paddock, aged eighty years.

PINSON.—In Terre Haute, Indiana, on Monday, June 21st, Dr. James A. Pinson, aged seventy-two years.

TOMLINSON.—In Cincinnati, Ohio, on Friday, June 25th, Dr. Samuel B. Tomlinson.

TOMLINSON.—In Milmotte, Illinois, on Monday, June 28th, Dr. William M. Tomlinson, aged eighty-one years.

VOSE.—In Calais, Maine, on Sunday, June 27th, Dr. E. H. Vose, aged seventy-one years.

WALLACE.—In Boston, on Sunday, June 27th, Dr. Frank H. Wallace, aged fifty years.

WHIDDEN.—In Highland Lake, Maine, on Tuesday, June 29th, Dr. J. W. Whidden, of Portland, aged fifty-three years.

WHITE.—In Farmville, Virginia, on Saturday, June 26th, Dr. James L. White.

WOODS.—In Pittsburgh, Pennsylvania, on Wednesday, June 23d, Dr. Ralph D. Woods, aged thirty years.

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Original Communications.

MICROSCOPICAL DIAGNOSIS OF INTRALARYNGEAL GROWTHS FROM A PRACTICAL STANDPOINT.*

By JONATHAN WRIGHT, M.D.,
New York.

In making the remarks I have in mind upon the microscopical diagnosis of laryngeal growths, I do not intend to enter upon it from the standpoint of general histology, but from the practical standpoint of the microscopist who attempts in the laboratory to supplement the endeavors of the diagnostician in the clinic; not from the vantage ground of the pathologist who is supplied with the whole tumor after it is cut out by the surgeon, but from that precarious and slippery foothold to which the microscopist is confined when he is presented with a tiny bit of tissue chipped off the surface of a laryngeal growth with a forceps,—nay, not even surely off the growth, but perhaps from some other part of the endolaryngeal surface in the neighborhood of the growth, with the assertion from the operator that it *did* come from the growth. I take it this is the practical standpoint to which the most interest is to be attached in this discussion, so far as the histological diagnosis is concerned. It should also be realized that the microscopist is not,—if he really fulfills his duty *can* not prudently hide his opinion on the plea of insufficient evidence. He is not there to protect his reputation for a knowledge of pathology, he is there to assist as best he may, the clinician. He is to advance his opinion too, not in a case where by expressing it he may share the responsibility of depriving a woman of a long since useless gland; it is not a question of spoiling the cosmetic appearances of some elderly man long since beyond the vanities of a smooth and unwrinkled cheek. He is here concerned with a plan to inflict upon a human being the most frightful mutilation to which one can be subjected. And this is the price he must pay for a comparatively brief increase, at the best, to his span of life. The necessity for such a frightful sacrifice as laryngectomy should be unmistakable. I describe thus luridly the position of the microscopist in these cases in order that an emotion of pity may sink into the heart of that individual, who of course is not here present, but who at times brings into the laboratory a bit of tissue, or a section from one, without a clinical history, without an expression of opinion as to the clinical diagnosis, without a description of the

laryngoscopic appearances, and finally without mentioning the fact that he already has a diagnosis from another microscopist. I understand that the state of this individual's mind is one which leads him to conclude that by suppressing these biological data he will receive an unbiased opinion. I refrain from comment, which seems obvious; perhaps it is simply sufficient to say that the surgeon and the microscopist can only hope to be mutually helpful, and above all helpful to their patient, by the fullest and frankest interchange of information and opinion. The opinion of the microscopist as to the meaning of a cell or two in his shred of tissue may hinge upon the question of whether the patient has been thoroughly treated for syphilis. It not infrequently happens that in the process of exclusion in the microscopic study of a section the conclusion is reached that structurally it can only be one of two things. Here the clinical history may definitely decide between these two things, though powerless to exclude things the microscope is able to accomplish. The contingencies are innumerable where the clinical history is a deciding factor in the microscopic diagnosis.

While I desire to confine myself to the special points involved in the subject allotted to me, it is unwise entirely to pass over a phase in the general discussion of cancer which of late years is being brought more and more into prominence, and with which I have dealt elsewhere more at length than I am permitted to do here. I refer to the subject best described by an hibernianism "the benign course of malignant growths." There can be no doubt of the fact that certain cases afflicted with cancer which have up to a certain point run a typical clinical course, in which the growths have been declared to exhibit the typical structure of cancer in its various forms by the most competent of microscopists, which nevertheless without operation or without any radical extirpation have permanently recovered their health and the growth has disappeared. I need only refer to an expression of Hanse-mann, one of the most acute of living observers, of pathological histology: "As a matter of fact the most practised observer frequently encounters in it surprises which fly in the face of all experience,"—a teutonic saying which again in itself contains an hibernianism, but which points as decidedly as do the cases of D'Arcy Power and of many others, to the conclusion that structure is not a final

*D'Arcy Power, *The Cancer*, Boston, 1886. There have been since then a large number of more or less convincing reports of spontaneous recovery from cancer. Czerny most recently cites a case (*Zentralblatt für Bakteriologie*, N. F., 2, 1909). The observation of the spontaneous recovery of dogs and mice from tumors of malignant structure has become a common observation in experimental work.

*Read at the New York Academy of Medicine, May 20, 1909.

or satisfactory expression of malignancy. Everyone who has had much surgical experience knows of the spontaneous recovery from tumors pronounced malignant by the microscopist as well as by the clinician. Now the clinician is always modest enough to acknowledge his own fallibility, and says, in such cases, he was mistaken; but in his inmost heart he thinks the microscopist should have known better. Now as a matter of fact, though the microscopist is in the same box as the clinician, they are both fallible, yet it is becoming clear from the observation of animal experimentation with cancer that they are fallible because some thirty or forty years ago a slip in logical reasoning occurred. It was observed that *most* men afflicted with tumors of a certain tissue synthesis died from their continued growth. We jumped to the conclusion that *all* men die who have tumors with that particular synthesis. It was dogmatically asserted that structure, the apposition of certain kinds of matter in a certain arrangement, is an expression of malignancy. Forgetful of the fact that in the cancer question, as in every other question under the sun, there are two sides to it, one the invasion of the malignant cells and the other the resistance to it,—we have ascribed to the clinician and the microscopist the errors inherent in the fallacy presented by a faulty syllogism. This plainly arose from the study of structure in advanced cases of cancer. It is evident that when a cancer has gone so far as to make the diagnosis unanimous from the clinical side and the histological side, and especially when it has gone so far as to exclude the possibility of its radical extirpation, so that it is left to its spontaneous course, the patient has usually entered upon a stage which is more or less surely fatal in any disease. Yet even so an imposing array of cases is on record where the patients have recovered from this stage of a disease which has been called cancer in the clinic and in the laboratory alike. I need not dwell with any further emphasis upon the conclusion that structure is not an infallible guide, and that really all the microscopist has any right to say in any given case is that the tissue presents the appearances usual in cases which end fatally. Now, while this may seem amply sufficient, on account of the rarity of cases recovering at the stage where reasonable doubt of diagnosis is admittedly very slight, it is a different matter entirely when we come to deal with a small excrescence on the vocal cord. At the very outset such a cancer causes symptoms that can not be concealed, and no set of men see cancer at so early a stage histologically as the laryngologists. It naturally follows that when the microscopist is given a paring from such a growth, he more frequently falls into error if he says from the same structure exactly as in the advanced cases, that it is going to run a fatal course if left to itself. The minute structure is the same, but the result, the clinical prognosis if the tumor is left to itself, manifestly must be more uncertain. I may not have succeeded in impressing upon you anything you have not known before, but if I have succeeded in convincing you how extremely fallible the microscopist dealing with intralaryngeal growths is, and why from general consideration as well as from special limitations he is so fallible, and above

all, how charitably you should look upon his mistakes, I have accomplished all that I expected.

Had the histology of cancer first been studied on nascent growths, it is probable there would never have arisen that conviction so long firmly fixed in the medical mind that a certain tissue structure, left to itself, means the death of the patient. The eagerness to extirpate growths at this stage has resulted probably in a considerable average prolongation of life, and it seems quite probable that very many of the triumphant statistics of operation on cancer we are really warranted in accepting on their face value; but I am sure the thought must have impressed itself on many that the happy results attained in many cases, especially when we include such cases as Butlin does, are to be ascribed to the fact that structure, and especially the nascent structure of tumors is not a safe criterion for prognosis if left to themselves. The precancerous stage of cancer of the tongue is probably a valuable asset in surgical nomenclature, but it is apt to be very misleading in pathology and biology. The surmise that some of these "pre-cancers" would never have become cancer if left to themselves is irresistible. That we ought to operate on such growths in cancer of the larynx as well as in cancer of the tongue can hardly be denied, but that has little bearing on the diagnosis or the ætiology or the nature of cancer. I have transgressed the limits I have myself set to this paper, yet perhaps the transgression may be considered pertinent to the subject. For the advance of medical science I think it is necessary to make way for the view that malignancy is a question of molecular dynamics, of which tissue structure is one imperfect revelation. Moreover, I have been compelled to sacrifice time to these general considerations because I consider them all important to the specific problems as they present themselves to the microscopist in the opinion he is to express.

I can best utilize such time as still remains to me by discussing certain common objective appearances in the most numerous class of laryngeal growths brought to his attention, those springing from or infiltrated in the epithelial layers of the vocal cords. The flat-celled epithelioma of the cords presenting itself only as a small papillary excrescence or as a shallow ulcer is the condition as seen in the laryngeal mirror. I will spend no time on the exuberant, widely spread growths, or those with deep infiltrations limiting the movements of the larynx and accompanied by metastases. The clinical diagnosis here is all but made before the microscopist has the tissue; and the tissue when he has it is often of an extent to allow him to get some idea of topography, which is the most valuable asset which he can have in his material from which to draw an opinion. The advanced conditions are frequently cases in which the microscope is a very necessary adjunct to clinical diagnosis, but they have very little interest for us here. The typical appearances of cancer structure are described in every text book. Of more interest would be a discussion of the points of differential diagnosis by the microscope of cancer from syphilis and tubercle, but it is impossible to treat of this in a sane way except as instanced in some one case. The ridiculous parallel columns of the text books are sources of ir-

ritation rather than of information to the practical observer. In view of the fact which I have emphasized, of the extreme smallness of the tissue brought up by the endolaryngeal forceps, and of the nascent state of the growth in many of these cases, the least objectionable way of treating the subject is a consideration separately of the objective phenomena having the greatest weight, except that of topography, in the diagnosis of this kind of cancer.

First as to epithelial whorls: Now, when one sees them in a section of a minute fragment taken from a sessile growth, with even the slightest loss of surface tissue as seen in the laryngoscope, there can be no question that the appearance is of grave import. Yet both in the larynx, especially in benign papillomata and in the epithelium of the tonsil, there are often seen circular cell nests or concentric rings made up of epithelial cells whose cytoplasm bears a more or less normal ratio to the nucleus as to volume. In benign conditions presenting these concentric whorls, the cytoplasm as well as the karyoplasm is usually well defined, and the presence of chromatin free from the nucleus is not a prominent feature in the cytoplasm. The latter does not present the hyaloid appearance with acid stains as a rule. If there is a bit of hyaloid matter in the whorl, it is usually oval or ovoid and confined to the centre of the whorl. The centre of the whorl may be seen to be the smallest sort of a capillary, or a mere protoplasmic thread of connective tissue. In other words, the source of its nourishment and its origin is more or less apparent, and its structure exhibits some symmetry. I will not stop to describe the malignant whorl, as that in its general features must be well known to you. This differentiation seems all very clear, it may seem to the neophyte, but unfortunately these are only types from which the divergence is frequent in both directions,—that is, regular symmetrical whorls may often be found in the epithelial cancer or canceroid, and still more unfortunately this regularity may be distorted by freezing or other hardening methods, and even with the best of them all the characteristics ascribed to the malignant cancer nest may be seen in growths which have no confirmatory evidence of malignancy and which run a perfectly benign course. Now these concentric rings are the features that stand out in the frozen section, and I can not but believe that errors of microscopical diagnosis are more apt to occur with this method. All things considered, however, I am always disposed to place more reliance upon this one feature than upon any other one feature to be noted in the epithelial shavings I am so often called upon to declare came from a malignant or a benign structure beneath. You may say no one should venture to express an opinion on such evidence, but I dissent from this view very decidedly. I can only ascribe it to the temptation to take one's self and one's precious reputation too seriously. A surgeon brings in a bit of tissue which seems ample to him, though in reality it may be almost entirely made up of epithelial scruff, which many kinds of epithelial hyperplasias, benign and malignant, furnish, and in the small bit of living remnant it may contain, one sees one or two of these little whorls. Now those one or two little

things woven into a full clinical and descriptive history may have an import which would be entirely wanting to them without such free and frank and full interchange of opinion; and for the microscopist to englobe himself in the dignified reticence or non-committal vesture sometimes assumed, is in reality a shrinking from his duty for fear his record for omniscience may pass under a cloud. What the surgeon wants to know is what his opinion or only his surmises are from what he has been able to offer him, and to these the surgeon and the patient have a clear claim; but if, on the other hand, the surgeon comes into the laboratory and goes out of it with a lingering belief in the power of structure to spell a prognosis for his patient with or without operation, he eventually will come unduly to condemn and neglect the help the microscope can give him when properly treated. It is vitally important, then, that the surgeon should understand the grounds for the microscopist's opinion and its limitations.

Islands of epithelium, isolated groups of epithelium in the stroma, upon which so much stress used to be laid, have become somewhat invalidated as evidence, from the uncertainty which often attaches to the nature of cells closely resembling the basement layer of the mucosa, and at the same time apparently identical with the epithelioid or lymphocyte cells of the stroma. This is especially the case in the so called basal celled epitheliomata of Krompecher, but these are doubts attached to the examination of larger pieces of tissue than one usually gets from the laryngeal forceps, and the topography of the growth usually helps one out, and with that kind of specimen I am not here dealing.

To pass on to the atypical cell. We grow accustomed to a certain sized cell in a certain position; but, more pertinently, we grow accustomed to a certain normal range of proportion between the size and shape and situation of the nucleus as compared to the cell body, and when these things are disturbed they produce an impression on the microscopist more easily referred to in general terms as being atypical than accurately described, but which yet have a very considerable influence in shaping the opinion of the observer. One may say, speaking in a teleological way, they do not seem to subserve any physiological purpose, for the benign tumor, while it may subserve no physiological purpose, does not in its separate component cells give that impression. Were time not pressing it might be profitable to analyze these appearances more closely, but it is necessary to say something of the appearance of the nucleus in the atypical cells. I have referred to the abundance of chromatin material in the cytoplasm and with less particularity to the relative situation of the nucleus in the cytoplasm. In certain places we expect to see it in one part of the cell, and in other places in other positions, but in a number of cells lying together, we expect to see it more or less in the same relative position. When we see this is not the case, and that the neighboring nuclei are not obeying some common law in a more or less similar way, we are suspicious that we have to do with a kind of lawlessness of growth incompatible with the continued existence of the organism as a whole.

A great deal of significance has been attached by von Hanseemann to the irregularities of the mitotic figure. The chromatin threads, instead of presenting a more or less regular spindle with distal poles and a common equator or a figure with a constricted centre and flaring radii from it having approximately the same number of chromosomes and amount of chromatin and the same arrangement one side of the equator as the other, show an irregularity and a lack of equilibrium which denote a disturbance at the molecular basis of life itself. Now, in many growths, and especially in malignant growths, the cells are proliferating and often show an abundance of mitotic figures. Were it possible slowly and carefully to harden such bits of tissue as are given us and lay them in very thin sections under the microscope, appropriately stained, were we sure our sections in any given case passed through the proper plane of the figures in question, I have no doubt that this token of molecular disturbance, being as I believe the visible manifestation of the lack of altruism which lies at the basis of cancer, would be the most important of all the indications which structure presents of malignancy. But in practice such is not the case. We must have rapid processes of preparation. I have deprecated the custom of using the frozen section, but even with several days of preparation, we have a jumbling of the mitotic figure which usually leaves us in doubt if there is any real asymmetry or not. Yet it has been shown that asymmetry of the spindle may be artificially caused, and there are many conditions of rapid proliferation of tissue, not cancerous, in which one occasionally sees an apparently very marked asymmetry. There is one condition of the nuclei that has some bearing on the microscopical diagnosis of cancer. In addition to the fragments of nuclei of endogenous or extraneous origin within the cytoplasm of the cancer cells themselves, there is usually in the stroma around a focus of malignant epithelium a great deal of fragmentation of the fixed and wandering cells of the connective tissue. This is a condition most marked in syphilis, yet when we have an epithelial hyperplasia such a phenomenon in the stroma around it has some significance in the decision between cancer and pachydermia. I have in mind a specimen received from one of the gentlemen present some years ago, a little stretch of stroma which presented this marked nuclear fragmentation. As the clinical diagnosis hovered between syphilis and carcinoma, I was rash enough to say the tissue indicated the former. In a few days I received another bottle holding two such little crescent shaped pieces from the same case. Mounted together, the sections of one piece was the exact counterpart of the first fragment, but the other little crescent showed practically all the diagnostic marks of an epithelioma. Now in this instance the forceps had removed one bit from the tumor and the other bit from beyond its periphery.

Under the circumstances, then, in which the microscopist labors when he deals with this part of his work, there can be nothing more ridiculous than regarding the microscope as a "court of last resort," and nothing more unwise than to rule it out of court altogether.

As I have intimated, I shall not dwell on the combination of all the points to which I have alluded here, and many others in the study of sections from cancer, for usually when one has enough tissue to study the topography of the growth the microscopist's difficulties cease. I may, however, allude to the rare cases in which separate pieces, repeatedly submitted for examination, presented no conclusive evidence for cancer when considered separately, but when all the appearances were combined in the scale, it inclined heavily to the side of cancer,—but this is often ruinous to the patient's chances. It is much better to cut down at once in such a doubtful case and extirpate the growth on the surgical diagnosis alone.

44 WEST FORTY-NINTH STREET.

DIAGNOSIS OF INTESTINAL TUBERCULOSIS.*

By JOSEPH WALSH, M. D.,
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This paper was called forth by the number of cases of tuberculous ulceration of the intestines which came to the autopsy table without previous symptoms, and the number which showed the common symptoms of intestinal tuberculosis without intestinal tuberculosis being present. As is generally recognized tuberculous ulceration of the intestines presages a fatal termination and since the prognosis is so absolutely bad it is of great importance that the condition be diagnosed, and if it is impossible to diagnose it it is of equal importance that this impossibility be acknowledged.

This study is on the last hundred cases which came to autopsy in the Phipps Institute, and the cases, therefore, were in no way selected.

Of these one hundred patients the youngest was nine, the oldest fifty-seven, and the average age was thirty-one; seventy-four were males and twenty-six females. Seventy-six showed ulceration of either the small or large intestine or both, and twenty-four no ulceration.

The symptoms ordinarily recognized as being at least probably diagnostic of intestinal tuberculosis are diarrhoea and abdominal pain, tenderness, and rigidity, especially in the region of the ileocecal valve.

Of the seventy-six patients with ulceration thirty-one (40.8 per cent.) had diarrhoea; of the twenty-four patients without ulceration seven (29.2 per cent.) had diarrhoea; of the seventy-five patients with ulceration in which pain was recorded twenty-one (28 per cent.) had abdominal pain; of the twenty-three patients without ulceration in which pain was recorded seven (30.4 per cent.) had abdominal pain. Of the seventy-six patients with ulceration twenty-three (30.3 per cent.) had abdominal tenderness; of the twenty-four patients without ulceration seven (29.2 per cent.) had abdominal tenderness. Of the seventy-six patients with ulceration nineteen (25 per cent.) had abdominal rigidity; of the twenty-four patients without ulceration six (25 per cent.) had abdominal rigidity. In other words,

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these symptoms taken singly add little or nothing to the diagnosis of intestinal tuberculosis.

Taking now the combination of the four symptoms, namely, diarrhoea, abdominal pain, tenderness, and rigidity, in the seventy-six cases with ulceration they were all four present five times (6.58 per cent.); in the twenty-four cases without ulceration they were all four present once (4.2 per cent.). In the seventy-six cases with ulceration they were all four absent twenty-six times (34.2 per cent.); in the twenty-four cases without ulceration they were all four absent nine times (37.5 per cent.).

Taking now the symptoms in all their various combinations we find that of the seventy-six patients with ulceration five had all these symptoms; four had diarrhoea, pain, and tenderness without rigidity; two had diarrhoea, pain, and rigidity without tenderness; two had diarrhoea, tenderness, and rigidity without pain; three had diarrhoea and tenderness without pain and rigidity; two had diarrhoea and rigidity without pain and tenderness; four had diarrhoea and pain without tenderness or rigidity; two had pain and tenderness without diarrhoea and rigidity; three had tenderness and rigidity without diarrhoea and pain; nine had diarrhoea alone; four pain alone; four tenderness alone; and five rigidity alone; in one case pain was not recorded; and in twenty-six cases all these symptoms were absent.

Sometimes we fail to find ulceration, but do find from a few to many small macroscopic tubercles in the intestines. These tubercles represent probably the first infection of the intestine and later develop into ulcers. Moreover, these tubercles might be capable of causing diarrhoea.

Tubercles without ulceration occurred in this series three times. Of these three one had and two did not have diarrhoea; one had and two did not have abdominal pain; one had and two did not have tenderness; rigidity was absent in all three instances.

Symptoms in connection with ulceration of the different parts of the intestine and with nonulceration:

	Ulceration of					
	Jejunum alone.	Ileum alone.	Small intestine alone not including jejunum alone or ileum alone.	Cecum alone.	Large intestine alone not including caecum alone.	Both intestines not including previously mentioned single parts.
Diarrhoea, pain, tenderness, and rigidity.....	0	0	1	0	0	4
Diarrhoea, pain, and tenderness.....	0	0	0	0	1	2
Diarrhoea, pain and rigidity.....	0	0	1	0	0	1
Diarrhoea, tenderness, and rigidity.....	0	0	0	0	0	2
Diarrhoea and pain.....	0	0	0	0	1	3
Diarrhoea and tenderness.....	0	0	1	0	0	2
Diarrhoea and rigidity.....	0	0	0	0	0	2
Pain and tenderness.....	0	1	0	0	0	1
Pain and rigidity.....	0	0	0	0	0	0
Tenderness and rigidity.....	1	0	0	1	0	2
Diarrhoea alone.....	0	1	1	0	0	2
Pain alone.....	0	0	0	0	1	1
Tenderness alone.....	0	0	0	1	2	3
Rigidity alone.....	0	0	0	0	2	1
Pain not recorded.....	0	0	0	0	0	1
No symptoms.....	1	1	1	2	1	6
Totals.....	2	2	6	6	8	24

Moreover, I would like to say that these patients

had been in a hospital in which it is imperative that complete examinations be made and complete records preserved. In the study of these cases all the records were carefully gone over, even the nurses' records. It would not be possible, therefore, to miss the symptoms if they were present, for the reasons that, first, the number of bowel movements are recorded on a temperature chart every day and this temperature chart was consulted; second, the night nurse makes a record every morning of the condition of her patients during the night, therefore, when a patient vomits, has diarrhoea, or complains of pain she records it and her record is bound with the history of the case; third, all the patients who die in the institute are autopsied and the comparison of the clinical and pathological findings are brought before the staff every Monday evening, which makes the clinician careful with his records; and, fourth, examinations at stated times are compulsory. True, it sometimes happens that a patient dies within twenty-four or forty-eight hours after admission and before the clinician has made a complete examination. I have included no such case in my statistics.

GASTRIC DISTURBANCE IN RELATION TO INTESTINAL ULCERATION.

	Gastric disturbance present.	Gastric disturbance absent.
Ulceration of small intestine.....	2	11
Ulceration of large intestine.....	5	9
Ulceration of both intestines.....	15	34
No ulceration.....	5	19

Besides the symptoms ordinarily attributed to ulceration of the intestines I have endeavored to see if other symptoms and conditions would aid in the diagnosis. A symptom that might be considered to have some bearing is gastric disturbance. A study of the accompanying table, however, shows that it adds nothing to the diagnosis.

ULCERATION OF INTESTINES IN RELATION TO ISCHIORECTAL ABSCESS.

	Ischiorectal abscess present.	Ischiorectal abscess absent.	Ischiorectal abscess not recorded.
Ulceration of			
Small intestine.....	0	13	0
Large intestine.....	0	12	2
Both intestines.....	8	41	0
Rectum.....	0	1	0
No ulceration of intestines.....	1	22	0
Totals.....	8	80	2

This table shows that in ninety-eight cases in which the presence or absence of ischiorectal abscess or fistula in ano was definitely recorded at autopsy, ischiorectal abscess or fistula in ano was found nine times. Of these nine cases of ischiorectal abscess or fistula in ano eight showed ulceration of both intestines. In other words, it would seem that a predisposition to ischiorectal abscess is possibly accompanied by a predisposition to intestinal ulceration.

Of course it is evident that the absence of ischiorectal abscess means nothing, since in seventy-five cases of ulceration of the intestines ischiorectal abscess was absent sixty-seven times.

*This table shows only twenty-three cases of no ulceration of the intestines instead of twenty-four as stated in previous tables. The reason is that one case of ulceration of the rectum without ulceration elsewhere was previously reckoned with the cases of no ulceration of the intestines. This case gave only the clinical symptoms of abdominal tenderness and rigidity.

¹In one of these cases pain was not recorded.

ENLARGEMENT OF MESENTERIC GLANDS IN RELATION TO
DIARRHŒA.

	Mesenteric glands enlarged.	Mesenteric glands not enlarged.
Diarrhœa present	34	4
Diarrhœa absent	54	8

In addition I looked for conditions that might give rise to a diarrhœa apart from the ulceration of the intestines. For instance, I looked first at enlargement of the mesenteric glands in connection with diarrhœa. Out of eighty-eight cases in which the mesenteric glands were enlarged diarrhœa was present thirty-four times and absent fifty-four times.

Again I tabulated diarrhœa and albumin with and without ulceration, but it added nothing.

Relation of albumin, casts, indican, and diazo reaction in the urine to ulceration of the intestines.

	Ulceration of								
	jejunum alone.	jejunum alone, including jejunum alone or ileum alone.	cecum alone.	large intestine alone not including cecum alone.	both intestines not including previously mentioned single parts.	No ulceration.			
Albumin alone	0	1	1	1	14	4			
Casts alone	0	0	0	1	1	3			
Albumin and casts	2	1	0	1	3	15			11
No albumin or casts	0	1	1	1	2	10			3
Albumin or casts not recorded	0	3	1	3	1	7			1
Indican:									
Present	0	0	2	3	2	19			11
Absent	1	1	2	1	0	9			7
Not recorded	1	4	3	2	6	21			6
Diazo reaction:									
Present	3	0	2	0	3	11			4
Absent	0	3	3	0	4	27			19
Not recorded	2	3	0	0	1	11			7

The table shows the association of intestinal ulceration with albumin and casts in the urine, but there seems to be no relationship between the two, as can be seen from the following two items: Out of forty-nine cases of ulceration of both large and small intestines albumin or casts or both were present in thirty-two and out of twenty-four cases without ulceration albumin or casts or both were present in twenty.

There is apparently also no relation between indican or the diazo reaction in the urine and intestinal ulceration. Indican was present in the urine in sixty-five per cent. of the recorded cases with ulceration and in sixty-one per cent. of the recorded cases without ulceration. The diazo reaction was present in the urine in twenty-seven per cent. of the recorded cases with ulceration and in twenty per cent. of the recorded cases without ulceration.

Finally, I would like to say that almost all the intestines, both with and without ulceration, were examined microscopically. The very great majority of intestines showed enteritis, and this enteritis was present both with and without symptoms.

As a consequence of these findings I never make a positive diagnosis of intestinal tuberculosis, and when called in consultation on a patient in whom the diagnosis has been made, if the case is not absolutely hopeless apart from the abdominal condition I suggest that we work on the possibility of ulceration not existing in order to improve the prognosis and make what is done, done heartily and not indif-

ferently, as is liable to be done when the prognosis is absolutely unfavorable.

CONCLUSIONS.

1. The symptoms diarrhœa, abdominal pain, tenderness, and rigidity mean very little or nothing in the diagnosis of intestinal tuberculosis.

2. The presence of an ischiorectal abscess in an advanced case adds to the probability of intestinal ulceration.

3. The diagnosis of intestinal tuberculosis cannot be made with the slightest degree of certainty from our present known symptoms, and since the condition carries with it such an unfavorable prognosis, in order to reassure the patient, the nurse, and the physician himself the diagnosis should not be made so that the patient will have a better chance for hopeful treatment.

732 PINE STREET.

REMISSIONS IN GENERAL PARALYSIS: A REPORT OF THREE CASES INCLUDING POST MORTEM EXAMINATION.

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Alas! however, general paralysis never forgives. Sometimes it releases its prey, as the cruel cat releases the mouse, for a brief moment, only to lay hold of it again later, more fiercely than ever. Fanny had that period of abatement in her symptoms, and one morning the physician was able to say to the young man: "You are anxious to remove her? Very well! But you will soon have to bring her back, for the cure is only apparent, and her present state will only endure for a month, at most, and then, only if the patient is kept free from every excitement and excess!"—GUY DE MAUPASSANT.

General paralysis by reason of the definite, progressive, and striking alterations in the central nervous system has invariably a grave prognosis. True recoveries *do not* exist and the cases of so called recoveries which are found in the literature lack authenticity and exactness. However, all authorities on neurology and psychiatry admit that remissions may occur in the course of this disease.

It is well to have the terms remissions and intermissions clearly defined. By the former it is understood a temporary cessation of the paretic process and the patient for *the time being* resumes his former mental health, but the somatic features still persist. By the latter is meant when both mental and physical symptoms have passed into the background. Intermissions are exceedingly rare.

The development of a remission is usually insidious, and in the words of Kraepelin, "the height of the remission is reached gradually, perhaps in the course of months. The patient appears clear, composed, and well behaved. The delusions disappear and are regarded by him as dreams or imaginations; quite often he is surprised how such a 'stupid thing' entered his head." . . . "The recollection for the acute period of the disease is somewhat confused, but many details become more and more distinct." Soon the patient gains good insight into his own condition, feels perfectly well, and is positive that he will remain so for the rest of his days.

During this period of remission patient attends to his former work assiduously and intelligently. One of Kraepelin's paretics during the remission of the disease held a position as telegraph operator for five years, frequently stood examinations, and subsequently consummated marriage. Another one was employed as janitor in a school for six years, and attended to his work properly. Magnan and Serieux speak of two characteristic cases of paresis with recoveries, which should be regarded as remissions. One in particular for more than eleven years was well mentally and occupied a position of a professor of music in a conservatory, and in this capacity he discharged his duties satisfactorily.

Bianchi writes: "Some observations go to prove that remission in paralytics may even exceed our expectations; the psychic personality becomes restored. A professor of music confined in the Sales Asylum with the most classic form of progressive paralysis was discharged after some months so much improved that he was able to lead the orchestra of the Teatro Mercadante. There remained only a certain slowness of thought and speech, and a slight depression of the psychic personality, bordering on childishness. Another man, who amongst other disorders showed such a profound alteration of the kinaesthesia that he confidently threw himself from the window of his house because, he said, he felt so light that he seemed able to fly, was discharged from the hospital as cured, owing to the complete disappearance of the psychic and somatic phenomena—tremors, inequality of the pupils, defective articulation, etc. I might have published this case as a rare example of recovery, but this error was prevented by the patient returning to the asylum about a year later, with the same clinical picture as before. This time, however, the malady proceeded to a fatal issue."

The duration of a remission varies considerably. According to Bianchi, Gaupp, Kraepelin, Oppenheim, Magnan and Serieux, Ziehen, Wollenberg, and others, the usual duration is from a few months to several years. It is stated that it is exceptionally rare over three or four years.

Cases of general paralysis of an exceptionally long remission are on record, and some of them will be found in the following table:

Observers.	Number of cases.	Duration of remission.	Form of paresis.
Attili	1	Five years	Grandiose.
Baillet	1	Five years	Manic.
Bouschansky	1	Fourteen years	Grandiose.
Doutrebente	1	Twenty-five years	Grandiose.
Dianchi	some	Thirteen years	Not stated.
Falk	1	Three and half years	Grandiose.
Fleming	1	Seven years	Grandiose.
Fourcade	1	Eight years	Grandiose.
Kraepelin	1	Five years	Depressed.
Kraepelin	1	Six years	Grandiose.
Kusnetzow	1	Six years	Manic.
Kraft-Ebing	1	Eleven years	Grandiose.
Lawson	1	Twenty-five years	Grandiose.
Lustig	1	Four years	Depressed.
Molnar	4	Five, six, five and half, and nine years, respectively	Grandiose.
Lebesdorf	1	Two years	Grandiose.
Magnan and Serieux	1	Eleven years and more	Grandiose.
Oebeke	1	Three years	Manic.
Schülle	1	Three years	Manic.
Strinsky	1	Six years	Grandiose.
Snell	1	Two years	Grandiose.
Schaffer	1	Seven and half years	Grandiose.
Tuozek	1	Two years	Grandiose.
Voisin	4	Six to twelve years	Grandiose.
Wendt	1	Seven years	Grandiose.

The expansive and agitated forms of general paralysis are subject more often to remissions than the depressed or demented types. As a rule remissions are manifest in the early part of the malady when dementia is not fully developed.

The relation of suppuration and infection to remission in general paralysis is rather interesting, and indeed this subject engaged the attention of many observers. Dubuisson (1816), Boulland (1820), Esquirol (1824), Fabre (1832), and Treilart (1845) had also considered the vital question. Baillarger attributes the amelioration of general paralysis to suppurative process which goes on in wounds. Decorose maintains that there exists in paresis a true purulent and phlegmonous diathesis which "seems to produce a revulsion, with a beneficial effect." He cites many cases to prove his thesis. Likewise Doutrebente has reported a number of cases. In one of his patients a remission of this disease occurred during pregnancy. Vallon declares that "it is necessary to create in general paralysis artificial wounds, by applying moxa, setons, etc. These means have given and give all the time excellent results in the clinic of mental diseases at the first stage of the malady and it should be insisted on the utility of its employment." Christian, however, had no success with his cases.

Marie and Viollet assert: "It is justifiable to ask if an abortive treatment of suppuration at its onset would follow by the same remission; the suppuration could possibly have some direct action on the infectious elements fixing them and raising a defensive favorable reaction of leucocytosis; but surgical intervention was certainly urgent for the elimination of the noxious and fixed elements."

Many observers have published cases of general paralysis in which the progression of the disease was interrupted by a well defined remission which was synchronous with some infectious or suppurative process. In the table below we may briefly refer to some of them:

Observer.	Number of cases.	Remission in relation to infection or suppuration.
Christian	2	Perforating ulcer.
Doutrebente	3	Febrile disease and suppurative process.
Kraft-Ebing	1	Infectious diseases.
Fiedler	2	Typhus.
Fleming	1	Phlegmon of right foot with pyrexia.
Von Halban	1	Furunculosis and phlegmonous inflammation.
Lustig	1	Suppuration of scalp.
Marie and Viollet	1	Empyema with subdiaphragmatic abscess.
Molnar	1	Furunculosis.
MacLeod	1	Erysipelas.
Mabille	1	Seton applied to nape of neck and artificial wound produced.
Mendell	1	Phlegmon of left forearm.
Oebeke	1	Erysipelas.
Seifert	1	Scarlatina hemorrhagica.
Schülle	1	Pulmonary gangrene.
Schaffer	1	Fracture of bone complicated by purulent infection and phlegmonous inflammation with subsequent pneumonia.
Tuozek	1	Decubitus and cyst.

According to some observers variola produces a beneficial influence on the course and progress of general paralysis, and Koestl reported many cases which considerably improved and even recovered (?) when vaccinated in the early stages of the disease. Kiernan obtained similar results and some of his general paralytics had a favorable outcome during eruptive fevers.

An interesting question now arises: What becomes of the paretic process during a remission? Van Halban answers it in the following manner: "We must not suppose that the disease manifestations which are founded on destructive alterations recede; in classical paralysis a series of symptoms are founded on reparable changes, and especially in the beginning trifling or no destructive alteration may be present. The intercurrent process which is usually associated with sepsis raises the activity of the noxa, and cessation of the progress must occur. The intensity of the remission will then depend upon the presence of a lesion and under the circumstances equals to an intermission especially when we accept that the healthy elements of the brain to a certain extent can take vicariously function of the diseased cells. By such a hypothesis we could only explain not the rare, doubtful cases of recoveries or deep remissions considered by many authors, but also in general those remissions which after all are not infrequent."

Our knowledge of the exact statistical data of the frequency of occurrence of remissions in general paralysis is inadequate. Hoppe found well marked remissions in 14.8 per cent. of men, and 14.9 per cent. of women. Gaupp holds that not even ten per cent. of all paretics have remissions.

In my own series of seventy carefully studied and observed cases of general paralysis (female) and a score of others which came indirectly under my care I have seen only three patients in whom an unquestionable remission of the malady was evidenced. The following are the records of these interesting cases:

CASE I:—M. F., forty-five years of age; nativity Scotland; married; history of syphilis not ascertained; laundress by occupation.

In the latter part of December of 1903 she became ill and was taken to a hospital where she remained a few days. When returned home she acted strangely, asked whether or not she was dead, and once she declared "I don't know what is coming over me—my head is gone." She passed sleepless nights, was depressed and lachrymose, and once apparently feared death.

On January 22, 1904, she was admitted to Manhattan State Hospital. Her physical status revealed a fairly well developed woman with some minor stigmata, Argyll Robertson pupils, knee and Achilles jerks absent, cutaneous sensibility somewhat impaired, tremor of tongue and fingers, slight ataxia in station, gustatory and olfactory senses were doubtful and laparotomy scars.

Mentally patient was quiet, reticent, gave brief replies, and at times cried and then again laughed without a known reason to the examiner. When asked to explain her gaiety she said: "Oh, when I think of all the funny things I see to-day. That bath to-day was terrible. I thought I would choke and then it stopped and then I commenced to go again and then I opened my eyes and I was near blind." She was unable to offer an account of herself or explain her situation. To quote some of her answers:

What kind of work do you do? "Well—well—the way I used to make it—I don't know—I used to—I don't know about making a living now—before I had my husband and I used to, let me see (long pause)."

When were you born? "Oh, I don't know—I used to hear father say I was born after the war."

She did not know why she was brought to the hospital, but called it Ward's Island and recognized the physician as such. Careful tests as to her memory could not be made because she answered most of the questions by saying "I

don't know," or "I don't remember," or "My memory is poor lately." Her time orientation was poor.

On January 23, 1904, she counted from 1 to 20 in fourteen seconds, and backward "20—19—19—18—17—16—15—14—13—13—12—12—10—10—10—9—8—7—6—5—4—2—2—2—2—2—1" (2½ minutes). She could not accomplish simple arithmetical tasks (like subtracting 5 from 22, etc.). Reading was decidedly poor, and writing was tremulous and indistinct. She exhibited only partial insight into her condition. Her stream of thought indicated a peculiar nihilistic trend as some of her answers show:

Do you think you are afraid? "I can't think at all—I can't tell if anything became of me—I don't know—I thought I was in the world—I don't know whether God made me or not. He must have made me—Oh, I don't know anything—I don't know anything at all."

Where is your father? "I don't think I have any father."

Where is your mother? "I don't think I have any mother."

Who are you? "I don't know what I am."

What do you mean? "Oh, I can't tell—Oh, I can't tell—I can't tell—oh—oh—oh."

For six months patient continued to be quiet, indifferent, unproductive, and seemed depressed.

In August, 1904, some improvement was noticed and this was gradual and continuous. On September 15, 1904, complete remission of mental symptoms was noted.

On November 21, 1904, a final status was taken. She was then oriented as to time, place, and person, and admitted being insane. Her memory was without defect except for some amnesia for the early part of her illness. Her mood was stable and she presented no evidences of mental impairment. Her physical health was fairly good. Knee, Achilles, and patellar reflexes were not elicited. Her left pupil responded only sluggishly to light and the reaction in the right was absent; accommodation was present in both. The left one reacted consensually but not the right. Speech was slightly hesitating and stumbled on test words.

December 22, 1904, she was discharged and was considered free from mental symptoms.

She got along very well till the middle part of the summer of 1905, when she began to experience stiffness across her hips and at times suffered with headaches. On February 6, 1906, she was admitted to one of the New York hospitals of the Department of Public Charities, and her main ailment was pains all over body. While there she grew depressed, and careless about her personal appearance. She was nervous, and remained silent throughout the day.

On May 21, 1906, she was readmitted to Manhattan State Hospital.

Physical examination revealed absent knee and Achilles jerks, Argyll Robertson pupils, slight Romberg, tremor of facial muscles, tongue, and hands, defective speech, and tremulous and unintelligible writing.

Mental status on admission: Patient was quiet, complied with simple requests, and absolutely took no interest in what transpired about her. She answered slowly and deliberately but after considerable urging. She made no effort to cooperate with examiner. Her orientation was only approximately correct. The integrity of her memory could not be very well ascertained on account of inaccessibility. She had no insight into her own condition. She declared that she was happy and content.

July 15, 1906, she appeared depressed; she explained her mood by saying that she was weak, and admitted being mentally deranged.

In the month of August weakness of her left hand was noticed, and during that month transient episodes of anger were observed.

September 22, 1906, patient was somewhat more accessible to questioning and at that time it was found that her memory was very poor.

In the latter part of November she grew ataxic in gait, and it was necessary to put her to bed.

In December she would often cry bitterly which was followed by loud laughter. She spoke of hearing voices; people called her vile names and called her an elephant. Dementia was progressive and rapid.

On January 2, 1907, marked muscular twitches of left hand and forearm were noted and wrist clonus and weakness of the entire left upper extremity were demonstrable.

February 19, 1907, she succumbed to exhaustion. Autopsy was held by Dr. G. Y. Rusk seven hours after death. The visceral organs presented nothing of interest. The brain was of medium size (1205 grammes). The

¹This patient was observed and studied by Dr. Charles Macfie Campbell and Dr. George H. Kirby during both her residences in this hospital. She was under my care from September, 1907, till the time of her death. I wish the expression of my hearty gratitude to Dr. Campbell and Dr. Kirby for their permission to consult their careful notes and refer to this case in my communication.

pin was of a starchy appearance over the whole convexity and on mesial surface most marked over central convolutions. However, the opacity was not very intense. Cerebral atrophy was diffuse and moderate. Granulations in the fourth ventricle were very marked. The basal vessels showed a moderate grade of blotchy atheroma. Microscopically the alterations were peculiar to paresis and the posterior columns showed only slight changes.

CASE II.—Family history: Negative for two generations.

Personal history: The patient, L. T., was a native of Bohemia, thirty-seven years old, married (at twenty-three), and had never had any children or miscarriages. Lues in the husband and patient was denied. Since marriage she suffered with headaches which were aggravated at night (occipital and frontal regions were usually affected). For the last two or three years she was nervous, suffered with insomnia, and was easily frightened. In February, 1907, her brother died. She then became melancholy, cried quite often, and made frequent visits to her brother's grave. For the past year she was only slightly forgetful, but not to an appreciable extent. In the summer of 1908 she had an attack of herpes zoster on the right side of her chest.

Last April (1908) she became slovenly in her habits, and acted in a peculiar manner (took off window shades, disarranged her household articles, etc.). Her sleep was very poor, and one night she saw imaginary negroes and heard them talk about her (about being killed). Hypnotics improved her insomnia. She would lie in bed, constantly contemplate over supposed serious questions, and would not do her work. She believed that she was nervous, and exhibited poor memory. Her gait was somewhat affected, she used to drag her feet. Soon she grew disobedient and could not be managed. She was sent to a private hospital on June 8, 1908.

While there she seemed happy, uttered grandiose expressions (saying that her husband was a millionaire, that she owned six automobiles, etc.), and her comprehension was dull. Her orientation was poor. Soon she showed some improvement, and on the 28th of June she was allowed to go home, but four days later was returned to the sanatorium. During the latter part of her residence there patient's condition ameliorated. She was able to write letters, exhibited insight into her condition, and gained in body weight.

On July 24, 1908, she was admitted to Manhattan State Hospital. Upon her reception her physical status revealed equal pupils whose reaction to light was sluggish, but accommodation reflexes were not affected. Knee jerks were absent. Romberg present. No tremors.

Mentally, patient was quiet, attentive, observant, and compliant. She stated that she felt "very good—fine." She spoke of having headaches for the past two years which disappeared lately. She declared that she had an attack of nervousness for which she was treated in a hospital. The cause thereof was worry over the death of her brother. She had no grandiose delusions and realized that her former ideas were false. No hallucinations were demonstrated. Her orientation was approximately correct. In recounting the events of her life, patient made few gross errors, but the recent past was correctly recalled. She admitted being nervous, but not mentally deranged.

During her further residence in the hospital she was quiet, pleasant, and agreeable. She expressed well being but had no grandiose ideas. Her speech was coherent, and she framed her answers relevantly. She was oriented as to time, place, and person. In giving the history of her life she made many discrepancies. The immediate past was correctly interpreted. Retentive faculty was not gravely affected. She remembered having spoken of automobiles and being wealthy. This she explained by saying that she was always longing for automobiles, and not infrequently the subject was a topic for discussion with her husband and brother. She gradually improved, and on October 17, 1908 she was allowed to go home on six months' parole. At home patient was doing very well. She was tractable, composed, and well behaved. She attended to her household duties properly (cooking, washing, etc.). In her appearance she was clean and tidy. Her stream of thought was connected and she had no delusions or hallucinations. Her orientation was correct and memory in general was fairly good. At no time forgetfulness was observed by husband. The mood showed no fluctuations. She realized that she was mentally unbalanced and was rather optimistic regard-

ing her present condition. (The mental status was taken by the author on March 1, 1909.)

Physically she presented the following: Small, irregular, slightly unequal pupils which did not respond to light, and their accommodation reflex was very doubtful. Knee jerks could not be elicited either by Jendrassik's or Laufendauer's method. Romberg was marked. Crepitations of both hands. Marked lymphocytosis and serum albumin of cerebrospinal fluid. Speech was not affected. Writing was good.

CASE III.—D. B., thirty-six years of age, born in the United States. Father indulged in alcoholic beverages after the birth of the patient. Mother queer and eccentric. Patient attended school till the third grade of the grammar department. Commenced to work at sixteen as a nurse girl, and later at housework. It was not known to the informant whether she led an irregular life, or had any children or miscarriages. The gynecological chart, however, showed evidences of former pregnancies.

In January of 1904 she fell off one flight of stairs and sustained injury to her head, but was not unconscious and received no medical advice.

In June of the same year it was noticed that she commenced to neglect her personal appearance, would quarrel with children, and once four razors and two penknives were found in her handbag, for which she was unable to account. She was forgetful and absentminded. She would take her clothes off and expose herself shamelessly. She felt happy. No definite hallucinosis or delusions could be demonstrated.

July 16, 1904, she was admitted to a State hospital where she remained until December 12, 1904. While there she expressed a general feeling of well being, and appeared happy and comfortable. She was oriented. She stated that people stared at her on the street and talked about her. Her memory was poor for recent events, and she was confused in relating her story. In October she showed considerable improvement, but was indifferent, childish in demeanor, and judgment was enfeebled. She presented no physical signs save exaggerated knee jerks. On December 12, 1904, she was discharged as recovered.

Upon her return home she was mentally well, but her speech was slow and it gradually developed into a drawl. She worked about the house and evinced natural interest in the affairs of life. Her memory was good, and she exhibited good insight into her former mental condition. She gained in weight considerably.

About five or six months before her present commitment (August 6, 1907) patient began to vomit, suffered with terrific headaches day and night, and her left hand "was just like paralyzed and as cold as ice." She became peculiar in her behavior. When she bought a pair of shoes she would show them to everybody, and talk of her brother's generosity. She frequently spoke of expecting handsome gifts from different people. She was not grandiose and at no time hallucinated.

About six weeks before removal to Bellevue she became wilful, obstinate, and when asked to explain her irrational behavior she denied that she ever acted wrongly and then would begin to cry bitterly. She paid no attention to her appearance. Memory began to fail. For instance, she forgot the names of her old friends, often would buy duplicate articles, etc. Her sleep was disturbed, but appetite was good. She seemed to be happy. She was sent to Bellevue Hospital.

At the psychopathic ward she showed pronounced mental confusion, muttered to herself in a low tone of voice, made contradictory statements, and offered the following:

"I just came in—this is my mother's house—I been out walking around all the afternoon—my mother she just came in and I lit the light—I know a few things—this is April—I don't remember the year—you are asking me too many questions."

When admitted to Manhattan State Hospital, August 6, 1907, physical examination revealed deep reflexes active; small pupils, but responsive; vital organs apparently intact.

Mentally she was quiet, not spontaneously productive, appeared content, answered questions slowly and in a drawing manner. Asked whether she was worth any money she said: "Plenty of dollars—20 or 30—I guess, and the insurance—you know." She said that her "memory was fine" and failed to see any defect in her mental condition. She gave the year as 99 and the month May, and the place is a nice one for "all these people here—this is their home

—they are not sick." "Lots of people come here to stay." No hallucinations or delusions could be elicited. Her memory was poor and data regarding her personal history were incorrect and absurd. Stream of thought was incoherent. Later she had frequent outbursts of resistance and anger accompanied by crying.

On September 22, 1907, she stated that she had lots of money, couple of hundred dollars, many houses in Germany and in Tremont.

December 11, 1907, patient became sick with croupous pneumonia, confined to right upper lobe, from which she made an uneventful recovery.

December 29, 1907, she had a convulsion which was limited to face and left side of body. Later examination showed weakness of the left side of the body, especially of the upper extremity.

At present she is quiet, content, and maintains an exalted attitude. Stream of thought is incoherent. Her memory for remote and recent events is extremely defective. She denies hallucinations and delusions. She states that she is very happy and strong. Orientation impaired. Speech drawing. In her demeanor she is puerile and simple. Dementia is quite perceptible. Physical condition is good. Unequal, irregular pupils which react to light and accommodation. Slight weakening of right side of face. Knee jerks exaggerated. No tremors. Defective speech. Moderate lymphocytosis of cerebrospinal fluid and increase of albumin.

REMARKS.

In my cases, two were tabetic and one was cerebral form. Two were decidedly elated and grandiose and one showed a definite depression with general slowness in action and thought. Remission in Case I lasted one year, in Case II about two years, and more than five months in Case III. It is interesting to note that in none of them heredity or psychotic traits were demonstrable, and moreover the remission did not occur at the time of infection or suppuration. Syphilis could not be satisfactorily ascertained but doubtless it could not be excluded. In the second patient there were suspicious signs of luetic infection, such as sterility and history of nocturnal headaches.

The disease picture, save for the remission, presented no anomalous traits, in each instance the diagnosis of general paralysis could be made without reservation. The question of a psychosis in tabes in Cases I and II would come up for consideration, but it would be remembered that the entire development, course, and termination of the malady were essentially of a paretic evolution, and in one we have the support of the post mortem examination.

The problem before us—what are the probable factors which determine a remission in general paralysis—is difficult to solve. A review of this extremely interesting subject only intensifies our curiosity and more questions are raised. Is it explainable on the peculiarity of metasyphilitic process? Or is it attributable to a special kind of bacterium paralyticum? Of course these are purely theoretical speculations. After all the potential neuro-psychic resistance of the individual is of great significance in the mechanism and process of a mental disorder be it functional or organic.

I am under great obligations to Dr. William Mahon, superintendent of Manhattan State Hospital, for the permission he has given me to publish these cases.

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PNEUMOCOCCIC ARTHRITIS.*

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The arthritis which we find at times associated with pneumonia and having the same etiology as it was recognized as such before the causative agent, namely the pneumococcus, was announced to the world.

Grisolle in his treatise on pneumonia published in 1864 stated that he had observed arthritis associated with pneumonia; evidently of the same etiology as it and having a pathology differing from the other types of arthritis i. e. swelling of the synovial membrane, purulent effusion, and no cartilage or bony changes. It was as late as 1884, some twenty years after Grisolle's remark that A. Frankel announced the discovery of the pneumococcus, and some time elapsed before Netter proved the pneumococcus had pyogenic properties. It remained, however, for Weichselbaum to announce to the world "that the diplococcus of pneumonia can cause not only pneumonia but also various

*Read at the meeting of the Association of Resident and Ex-resident Physicians of the Jewish Hospital at Philadelphia.

other processes either at the same time as the pneumonia or independent of it." This statement was announced in the year 1888.

Bezançon and Griffon working on immunity came to the conclusion as a result of experimental studies that attenuated cultures of the pneumococcus are most apt to cause arthritis, which studies confirm the clinical fact *i. e.* namely that joint involvement in pneumonia is most apt to occur just when the patient is getting over his attack of illness.

We now devote ourselves to a study of the ætiological factors in this type of arthritis:

1. *Frequency.* Netter, in 4,156 cases of pneumonia from various German clinics, found six cases of arthritis. A study of 1,215 cases from Parisian clinics shows three cases of arthritis. Out of 650 cases observed at Munich one case of arthritis is reported. Among 3,293 cases of pneumonia occurring at the Charité in Berlin there were two cases of arthritis. Among 2,292 cases of pneumonia from various European cities two cases were observed. In the Jewish Hospital, Philadelphia, out of 240 cases of pneumonia one case of arthritis was observed. A study of the collected statistics shows that pneumococcic arthritis occurs once in about 800 cases of pneumonia.

2. *Sex.* A study of sex as an ætiological factor shows that males predominate. In a study of sixty-three cases there were forty-six males, nine females, and in the remainder the sex was not stated.

3. *Age.* An analysis of the cases shows that the youngest patient was three weeks old and that the oldest patient was seventy-one years. Going into detail there were two patients between 70 and 80 years; two between 60 and 70 years; fourteen between 50 and 60 years; eighteen between 40 and 50 years; eight between 30 and 40 years; five between 20 and 30 years; and five between 1 and 10 years.

4. *Relation of arthritis to a previous pneumonia.* There are only four cases on record in which we had a pneumococcic arthritis without a previous pneumonia. The analysis of the remaining cases shows a previous pneumonia anywhere from several days to a few weeks or longer. Just what determines the lodgment of the pneumococcus in a certain joint to the exclusion of another we do not know; or what factor determines the production of an arthritis is not very definite. We know that previous diseases such as gout or rheumatism, trauma, alcoholism, or plumbism seem at times to favor the occurrence of an arthritis.

Symptomatology. The symptoms observed are those common to all forms of arthritis. Pain is a common symptom. Tenderness, swelling, and effusion are usually marked. In many cases there is redness, cedema, and superficial tenderness resembling closely a gonococcic arthritis.

The diseased processes instead of being in the joint may be near or about it. A case reported by Dr. Preble from Cook County Hospital showed at autopsy a pneumococcic subdeltoid abscess; Netter, also Gabbi and Pusitz refer to similar cases.

It is extremely important to bear in mind that not every case of arthritis during the course of pneumonia is due to the pneumococcus. Swirnow

in studying ten cases of polyarthritis during pneumonia showed the presence of typhoid bacilli, streptococci, and staphylococci in them.

The constitutional symptoms in these cases are those of general sepsis with the joint symptoms as part of the picture. In some cases the general symptoms were marked and in others not.

Pathology. The theory of this disease is that the bacteria enter the joint through the blood, occasionally, however, the joint is primarily involved. In acute cases we have symptoms with effusion at times serous, at times serofibrinous, at others purulent, and still at others bloody.

In chronic cases the cartilage is eroded, and there is inflammation of the muscle and tendon sheaths.

Prognosis. A study of sixty-three cases shows that thirty-eight patients died and thirty-five recovered,—a mortality of about fifty per cent.

Treatment. In some cases tapping of the joint together with rest and therapeutic measures which have a tendency to absorb exudate suffices. In my case Bier's treatment was used with gratifying results. In purulent cases opening and draining the joint is the only logical treatment. In some cases amputations of the limb had to be resorted to.

The first classical treatise on this disease was published in 1899 and was the work of the French observer Lecroux. In 1902 Herrick published an article on pneumococcic arthritis in the *American Journal of the Medical Sciences*, in this he reviewed the work of Lecroux, also the case reported by Raw and Cave, the English observers, and added the cases studied in America by Preble, Wells, and himself. A few months later Cole, of Baltimore, published in the *American Medicine* several cases of pneumococcic arthritis, which he had personally observed and a few he had collected from the literature. Some time afterwards Pfisterer, of Basle, published several cases—this being the last contribution to the subject of pneumococcic arthritis I could find in the literature. I ought also to mention that in 1907 Dr. Hand, Jr., and Dr. Jopson, of this city, reported a case of pneumonia complicated by a pneumococcic arthritis, occurring in a drunkard which resulted in an arthrectomy and recovery. The paper was read before the medical branch of the Philadelphia County Medical Society.

The elaborateness of the articles published by Herrick, Cole, and Pfisterer precludes me from entering into a review of the cases reported by them. I will therefore report the case observed by me.

J. K., twenty-five years of age, Russian, housewife, was admitted to the Jewish Hospital on March 18, 1908, complaining of pain and swelling in the right knee and inability to walk.

Family history: Negative, except that father died of carcinoma. No history of rheumatism, trauma, nor lead poisoning.

Personal history: Negative, except for one miscarriage.

Present illness: Four months previous to admission, she noticed pain in her right knee. Pain was dull in character unattended with redness or swelling, but there was tenderness. Pain was worse on motion. A physician prescribed some powder for her and she became well. Two months previous to admission, she gave birth to a child. The labor was normal. Three weeks after labor she again noticed pain in her right knee with no redness nor swelling. She was given some liniment to rub on her knee, and by the next morning the knee was swollen and red, and she was unable to walk. This was her condition on admission to the hospital. On the day of her admission, the knee

joint was tapped and six drachms of a reddish fluid was obtained.

Physical examination showed a well nourished female. Pupils were equal and reacted normally to light and accommodation. No arcus senilis. Tongue was clean, protruded in median line, not tremulous. No pulsation of vessels of neck. No thyroid enlargement. The examination of heart and lungs was negative. Abdomen was flat. Liver and spleen were normal. The right knee was swollen, reddened, tender, and painful on motion. No œdema was present but there was local heat. Further observation showed fluid in the joint. Temperature and pulse were normal throughout her illness except for an attack of amygdalitis, when febrile phenomena were present for three days but rapidly subsided. Urine report: Acid, specific gravity, 1.020, no albumin nor sugar. Microscopically, no casts, nor epithelium present, leucocytes present, amorphous urates. Blood examination: Hæmoglobin, eighty per

cent; erythrocytes, 3,800,000; leucocytes, 9,000. Examination of fluid from joint showed pneumococci in abundance.

Treatment: Early in the case Bier's treatment was resorted to for two hours daily, also evaporating lotions, and marked improvement resulted. Later passive motion, Scotch douches, and massage did the patient a great deal of good.

Result: Patient recovered from her arthritis, but some ankylosis resulted.

I desire to thank my chief, Dr. Feldstein, for the privilege of reporting the case and I want to express my obligation to Dr. E. A. Jarecki for the encouragement and help I received from him during the preparation of this paper.

Appended is a summary of the cases of pneumococcic arthritis reported to date:

No.	Observer.	Date, sex, age.	Relation to pneumonia.	Seat of arthritis.	Nature, Suppurative?	Complications and remarks.	Result.
1	Weichselbaum	1888; F; 54	Pneumonia 3 days before	Right shoulder	Suppurative		D.
2	Beifanti	1889; ?	Pneumonia 11 days before	Right wrist	Suppurative		D.
3	Monti	1889; ?	Pneumonia	Metacarpophalangeal	?		D.
4	Ortman and Samter.	1890; M; 34	Pneumonia few days before	Shoulder	Suppurative	Arthrotomy	R.
5	Macaigne and Chipault	1891; F; 60	Pneumonia 4 days before	Right knee	Suppurative	Arthrotomy	R.
6	Chantemesse	1891; Adult	Pneumonia, crisis 2 days before	Elbow and knee	Serous	Meningitis	D.
7	Boulleche	1891; M; 5	Pneumonia 3 days after	Knee and both elbows	Suppurative		D.
8	Picque and Vellow.	1891; M; 36	Pneumonia 4 days before	Right knee	Suppurative	Arthrotomy	D.
9	Brunner	1892; M; 52	Pneumonia 2 days before	Left wrist	Suppurative	Arthrotomy	D.
10	Juvigny	1894; M; 52	Pneumonia	Both knees and ankle	Suppurative	Pericarditis and endocarditis, meningitis, arthromy.	D.
11	Dominici	1896; M; 44	Pneumonia 12 days before	Right shoulder	Suppurative		D.
12	Griffon	1896; F; 71	None	Right ankle	Suppurative	Endocarditis, meningitis, arthromy.	D.
13	Mercantonio	1896; M; 71	Pneumonia some days before	Right shoulder	Suppurative	Arthrotomy	D.
14	Oliva	1896; M; 8	Pneumonia 7 days after	Arms and feet (multiple)	Serous	Pneumococci found in sputum only	R.
15	Vogelins	1896; M; 38	Pneumonia 3 days before	Right sternoclavicular	Suppurative	Arthrotomy	R.
16	Vogelins	1896; M; 60	Pneumonia some days before	Hip	Suppurative	Endocarditis, empyema, arthrotomy	D.
17	Schabab	1896; M; 45	Pneumonia	Left hip and knee	Suppurative	Rheumatism 2 years before	D.
18	Husset	1896; M; 41	Pneumonia 7 days before	Both knees	Suppurative	Endocarditis and meningitis (arthritis of shoulder subsided before death)	D.
19	Fernet and Lorraine.	1896; M; 56	Pneumonia	Left sterno clavicular and right shoulder	Suppurative	Purulent pericarditis	D.
20	Widal and McJalay.	1896; M; Adult	None	Left first metatarsophalangeal	Suppurative	Old rheumatic arthritis	D.
21	Dufloque and Ledamany	1896; M; 32	Pneumonia 9 days before	Both elbows, right shoulder, left knee	Suppurative	Empyema, secondary syphilis	D.
22	Tournier and Commont	1896; M; 50	Pneumonia 6 days before	Left knee and shoulder	Serous	Endocarditis, typhoid arthritis 25 years before	D.
23	Widal and Mercier.	1897; M; 46	Pneumonia 6 days before	Right wrist	Suppurative	Stiffness and grating of joint, arthrotomy	R.
24	Gallaire and Mordly.	1898; M; 44	Pneumonia 9 days before	Left wrist	Suppurative	Old chronic rheumatism of hands and feet	R.
25	Widal and Lesue.	1898; M; 68	None	Left sterno clavicular, left wrist	Suppurative	Meningitis, arthrotomy	D.
26	Petit	1898; M; 42	Pneumonia 6 days before	Left knee	Suppurative	Empyema	D.
27	Sorel	1898; M; 48	Pneumonia 8 days before	Left shoulder	Suppurative	Endocarditis, pleurisy, peritonitis, meningitis	D.
28	LercuX	1899; M; 45	Pneumonia 9 days before	Left wrist	Suppurative	Stiff joint	R.
29	Farnet and Lacapère.	1900; M; 47	3 or 4 days before pneumonia	Right wrist	Serous	Arthrotomy	R.
30	Render	1900; M; 51	Pneumonia 15 days before	Left sterno clavicular, left knee	Suppurative	None	D.
31	Cape	1900; M; 51	Pneumonia 9 days before	Left shoulder	Suppurative	None	D.
32	Nicolaysen	1897; M; 1	10 days from onset of symptoms	Right elbow	Suppurative	None	R.
33	Mulsam	1897; M; 57	Entered surgical ward 24 days after pneumonia	Right shoulder	Suppurative	None	R.
34	Heubner	1897; 5 weeks	About 3 weeks after pneumonia, some days after crisis	Left shoulder	Suppurative	None	R.
35	Flament	1898; M; 55	Pneumonia 3 days before	Knee	Suppurative	Resection	R.
36	Raw	1898; M; 28	Pneumonia 3 days before	Right sternoclavicular	Suppurative	For incision and drainage, right otitis media, abscess of thigh	R.
37	Raw	1899; M; 52	Pneumonia 2 days after	Right ankle and sterno-clavicular	Suppurative	Incision, arthrotomy, stiff joint, right empyema	R.
38	Raw	1900; F; 40	Pneumonia 2 days before	Right shoulder	Suppurative	Incision, drainage, arthrotomy, arthrotomy	D.
39	Raw	1897; M; 21	Pneumonia 3 days before	Right knee	Serous	Arthrotomy	R.
40	Raw	1898; M; 28	Pneumonia 3 days before	Right knee	Suppurative	General treatment, alcoholism; severe infection; toxicemia	D.
41	Raw	1900; M; 28	Pneumonia 3 days before	Right knee	Suppurative	Incision and drainage; fairly useful joint	R.
42	Raw	1901; M; 42	Pneumonia about same time	Right shoulder	Suppurative	General treatment, severe general infection with extensive cellulitis of shoulder	D.
43	Raw and Reddie.	1900; F; 43	Pneumococci septicæmia, no bone involvement; pneumococci found in blood, joints, and lumbar puncture	Elbow, wrist, ankle, knee	Suppurative	Pneumococci septicæmia with localization in pericardium, meningitis and joints. Autopsy.	D.

No.	Observer.	Age.	Date, sex	Relation to pneumonia	Seat of arthritis	Nature.	Complications and results.	Re- sult.
44	Preble	1899; M.; 33	Exact date of arthritis uncertain, but joints swollen at time of first observation 14 days from initial chill	Right foot, left knee, elbow, wrist, second metacarpophalangeal joints	Suppurative	Pneumococci from blood during life		D.
45	Billings	1900; M.; 23	16 days after chill of pneumonia	Right shoulder, left knee and metacarpal phalangeal joints of great toe.	Suppurative	Meningitis, distinct trauma to joints		D.
46	Hekton	1901; M.; 47		Left knee	Suppurative	Pneumococci in heart's blood at autopsy		D.
47	Allen and Lull	1901; F.; 40	Primary in joint; no pneumonia	Right sternoclavicular	Suppurative	No pneumococci in blood; arthrotomy		D.
48	Quine	1902; F.; 30	7 days from onset of angina; 5 days from that of pneumonia	Left sternoclavicular	Suppurative	Endocarditis, nephritis, probable pericarditis. Incision		D.
49	Wells	1902; M.; 32	2 days after crisis of pneumonia	Left sternoclavicular	Suppurative	Incision and drainage		R.
50	Herrick	1902; M.; 32	7 days after pneumonia, immediately following crisis	Left elbow	Suppurative	Aspiration. Useful; movable joint		R.
51	Herrick	1902; M.; 41	15 days from beginning of pneumonia	Left hip and knee	Knee serous, hip unknown	Plumber; alcoholic. Previous injury of hip and knee. Aspiration of knee; useful joint, but not treated; ankylosis		R.
52	Herrick	1902; M.; 26	12 days after crisis of pneumonia	Left knee	Suppurative	Incision and drainage; severe toxæmia; pericarditis		D.
53	Cole	1902; M.; 55	Primary broncho-pneumonia	Both knees	Suppurative	Pericarditis; meningitis; suppurative nephritis; pneumococci in blood during life		D.
54	Cole	1902; M.; 50	Probably pneumonia	Left ankle	Suppurative	Arthrotomy		R.
55	Miller	1902; M.; 40 adult	Pneumonia	Right wrist	Serous			R.
56	Allen	1901; F.; 40	No pneumonia	Left ankle	Suppurative	Arthrotomy, amputation		D.
57	Lannock and Davis	1901; M.; 46	No pneumonia	Right wrist	Suppurative	Sections of endocardium and from valve leaflets showed pneumococci		D.
58	Pittman	1894; M.; 40	Pneumonia		Suppurative	Pericarditis and endocarditis; pneumococci in blood		D.
59	Funment	1898; M.; 53	Pneumonia	Right knee	Suppurative	Following chronic rheumatism		R.
60	Ucknay	1898	Pneumonia	Shoulder	Suppurative	Spontaneous rupture; arthrotomy		R.
61	Hagenbach and Buschardt	1898; F.; 2½	No pneumonia	Shoulder and knee	Suppurative			R.
62	Stricker	1908; F.; 25	No previous pneumonia	Right knee	Bloody	Bier's treatment, etc.		R.
63	Hand, Jr., and Jopson	1908; M.	Previous pneumonia	Knee	Purulent	Arthrotomy		R.

4054 GIRARD AVENUE.

DROPPER AMPOULES.

The Latest Device for Chloroform Narcosis.

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The value of any mechanical device for facilitating the administration of anæsthetic drugs depends upon its simplicity of construction, its economy in the consumption of the particular anæsthetic agent for which it is adapted, and finally upon its convenience and safety in the induction of narcosis.

The recent trend of expert anæsthetists has been toward the simplest of methods. Following this lead experiments with the newly devised dropper ampoules have been conducted at St. Mary's Hospital during the past year. The device was used in all narcoses in which chloroform was either the anæsthetic of choice or was necessitated by the character of the surgical procedure or the condition of the patient.

Previously many complicated and elaborated devices had been tried and found wanting, usually because they got out of order so quickly, or did not accomplish anything more than could be done by any novice with an amber bottle and a grooved cork. The dropper ampoule, however, has been proved by extensive experiment to be the most perfect dropper so far devised for the administration of chloroform by the open drop method. This may seem a strong commendation, but its perfection is based upon its ultimate simplicity, economy, convenience, and safety.

The sealed package, containing a sufficient amount

of chloroform for one operation has been in vogue among operators both here and abroad for some time. The new device was the result of inventive genius set to the task of perfecting the sealed ampoule into a dropper.

The dropper ampoule is a glass container, the end of which is elongated into a cone like projection, turned at the tip and ending in a bead sealed capillary tube. On the shoulder of this container is a second capillary projection similarly sealed. The ampoule holds about thirty grammes of chloroform, an amount seldom exceeded in the ordinary run of narcoses for single operations. The container is marketed in strong, cardboard boxes fully protected from breakage, thus making it a handy package for the emergency or obstetrical bag.

To use the dropper ampoule it is only necessary to break off the beedlike tips of the capillary endings. This is most readily accomplished by previously nicking the neck of the tube with an aluminum file supplied in the container, or by clipping off the bead tips with a scissors. The elongated end of the container thus becomes the dropping point and the capillary ending of the shoulder bubble the air inlet. The pressure of the index finger on the capillary ending of this shoulder bubble regulates the influx of air, and the frequency of the drip may be retarded or increased at will. Also the angle at which the container is held plays an important part in regulating the rate at which the chloroform may be made to drop.

The greatest fault with most mechanical chloroform droppers is that the calibre of their dropping point is entirely too large; thus allowing the use of

too much of the anæsthetic. With a standard pipette chloroform should drop 180 drops to the fluid drachm. Personal experiment with various drop-

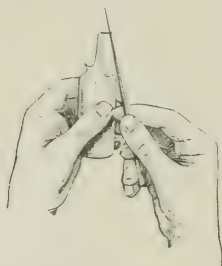


FIG. 1.—Nicking the long capillary tube with file previous to breaking off the tip.

pers has shown that the ratios of mechanical devices average as low as eighty and few any higher than 100 drops to the fluid drachm. It is in this respect that the dropper ampoule excels, as it drips between 180 and 200 drops to the fluid drachm. Also the capillary ending insures a drop of unvarying size and quantity, certainly a very desirable safeguard in the preliminary stages of narcosis and during the course of such surgical procedures as require a profound anæsthesia and a rather long time for their completion.

With the dropper ampoule it is almost impossible to saturate the patient with chloroform either at the beginning or during the course of narcosis, because the drop which is used is one half the size which occurs with other droppers and the frequency of the drip is much more readily controlled and regulated than with those devices, the air inlets of which are of larger calibre. It must not be imagined for a moment that a small drop means a retardation in the onset of anæsthesia. Quite the contrary. A small, frequent drop, enables the anæsthetist to narcotize the patient much more rapidly and with a greater degree of safety. The stage of excitement is obviated in the great majority of instances, and this means an appreciable saving in time and anxiety. Even alcoholics accept chloroform much more readily when the narcosis is thus induced. Cyanosis does not supervene, and the anæsthesia can be so definitely controlled that a number of operations,

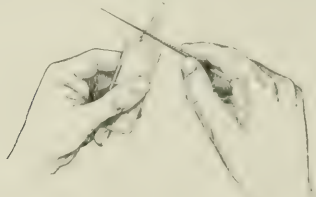


FIG. 2.—Nicking the neck of the bubble on the shoulder previous to breaking.

not requiring the abolition of the reflexes have been satisfactorily performed under a very light narcosis and without any of the usual attendant symptoms of excited nausea and spasm of the musculature.

Children and the aged are always fearsome subjects for narcosis, but both of these extremes of life accept chloroform safely when narcosis is induced by means of a minute drop. In several operations on a little colored boy anæsthesia supervened in about one and one half minutes without struggling and about three fluid drachms sufficed for the narcosis necessary for the removal of a series of tuberculous glands. This one patient was anesthetized three separate times by the dropper ampoule method and was not nauseated once. This is remarkable since patients who have once been narcotized by any anæsthetic are prone to revolt against it on any successive occasion when it is used.

One instance will exemplify the extreme economy of the dropper ampoule for hospital work. Three successive operations, lasting jointly over two hours, were conducted under a narcosis which did not require all the contents of one ampoule. In private



FIG. 3.—Retarding the outflow by checking, with the index finger, the influx of air through the opening in the shoulder.

practice, when a fresh ampoule is used for each narcosis, of course such a percentage of economy could not be secured. But even counting whatever chloroform is left in the container as sheer loss, still the amount of chloroform used by the dropper ampoule is much less than by any other method.

Moreover a safe narcosis is always the paramount issue. By requiring the use of a fresh container for each operation (except in hospital work where several operations rapidly succeed each other) the dropper ampoule introduces an element of increased



FIG. 4.—Increasing the rate of flow by allowing free admission of air.

safety by obviating the chance formation of poisonous chlorine byproducts in the chloroform. The custom of using a pound bottle of chloroform, indifferently corked, and left standing around the operating room until wanted for refilling the drop bottle, is mentioned only to be condemned.

Regarding the convenience of the dropper ampoule over other devices, a personal trial will convince the most skeptical. Aside from its economic value in hospital work its compactness and its double function make it the package of choice for all emergency or obstetrical cases in which the use of chloroform narcosis is indicated.

To recapitulate. The dropper ampoule is a distinct advance in the marketing of chloroform for anæsthetic use, as the following facts testify:

1. The dropper ampoule is simpler than any other dropper in its construction, its preparation, and use.

2. It is the most economical dropper, because its capillary ending insures the smallest possible drop, which results in a minimal consumption of chloroform.

3. It is the most convenient and compact package of chloroform since it obviates the necessity of carrying an extra dropper, and is so packed that it can be carried with perfect security in the emergency or obstetrical satchel.

4. It is the safest dropper because it uses the least amount of anæsthetic consistent with adequate narcosis and the anesthetist has perfect control of the drip, being able to regulate the frequency of the drop at his discretion.

5. Personal experience has proved conclusively that patients accept narcosis much more readily with the use of the dropper ampoule, than with any other dropper, because the minimal amount of chloroform used allows for a correspondingly greater admixture of air. The stage of excitement is lessened or entirely obviated, narcosis supervenes more rapidly, and cyanosis is of very infrequent occurrence. Also during long anesthetics there is no tendency on the part of the patient to collapse from shock due to saturation with the anæsthetic.

6. Postoperative nausea and vomiting are conspicuous by their absence. Also no cases of delayed poisoning have so far been recorded in any of the personal experiments.

This dropper ampoule is worthy of a thorough trial by expert anesthetists; surgeons who prefer chloroform as the anæsthetic of choice for their operations, and in all emergency and obstetrical cases in which chloroform narcosis is indicated.

639 WEST SEVENTH STREET.

THE REFLEX MECHANISM AND THE CLINICAL SIGNIFICANCE OF THE IMPORTANT REFLEXES.

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To those who would keep abreast of the advance in clinical research, a knowledge of the mechanism of the reflexes and the interpretation of their clinical behavior is indispensable. In the light of later anatomical, physiological, and pathological understanding, the reflexes, some of them long recognized, and some of them recently elucidated, have assumed a more definite rôle in the interpretation of clinical nervous phenomena. Much that is contradictory and conflicting has been alleged for the reflexes and it is therefore the more important that the chaff be separated from the wheat. They aid us materially, in differentiating one organic disease of the nervous system from another, in determining the localization and extent of lesion, in the recognition of the purely functional disorders, and in estimating the importance of altered reflex activity in diseases, other than those involving the nervous system.

From the simplest type of true reflex activity, as exemplified in the highest species of plant life and lowest forms of animal creation, the development of

the reflex mechanism passes through the scale of anatomical and physiological gradation characteristic of nerve structure and function in general. As with the development of the nervous system throughout, so this form of nerve energy exemplifies the familiar law that, with increasing complexity of structure and function, we find corresponding greater sensitivity and instability. As a consequence, laws that obtain in experimental research do not always find unmodified clinical application. In the higher vertebrates reaching the plane of man, we observe the greatest complexity of reflex mechanism and the development of superior centers of control. In man, the simplest spinal centres are subsidiary to higher basal, and these are again under the control of superior centres of reflex in the cortex. The identification of primitive reflex activity becomes more obscure as we ascend. Observations in experimental physiology, as applied to clinical studies and pathological findings, must be purely comparative. For example, the results of complete transverse and partial spinal cord and of cerebellar lesions, experimentally induced in animals, compared with similar affections in man, illustrate the different manifestations in reflex actions which are doubtless the result of a higher order of reflex mechanism in the higher vertebrates. For the understanding of clinical manifestations of nerve lesions in man, we must accept at least three centres of reflex activity, spinal, basilar, and cortical; these three, interrelated in structure and correlated in function, are the principal centres for muscle tonicity and primitive reflex. While it is doubtless true, as stated by Crocq, that as we ascend in the developmental scale we observe the higher replacing the lower centres of reflex control, it is probable that in man during health, all three centres are active, the higher more complex, controlling and regulating the lower; under certain pathological conditions, the lower resume function without higher control. This is in accord with clinical experience. The pathological modification of the plantar reflex, that is, the Babinski or extensor toe reflex, in its presence normally, in the immature nervous system of early infant life, as also the behavior of the tendon reflexes under pathological conditions exemplify this view. Analogy is shown in the vasomotor reflex control. For instance if the lumbar region is separated from the bulbar vasomotor centres, the blood vessels of the lower extremities dilate and local superficial temperature is raised. In time the vessels resume their tone and the normal temperature is restored. Physiologists explain this phenomenon when experimentally produced, as due to resumed activity of latent or rudimentary centres in the cord. The same phenomenon occurring under pathological conditions in man may be similarly explained. (G. L. Walton.)

The exact nature of the reflex phenomenon has been a subject of discussion ever since the clinical importance of the reflexes was demonstrated. It has been maintained that the tendon reflex is a simple phenomenon of the tendon alone and again that muscle tonus is the important element, the tonus being itself a quality of the muscle largely dependent upon impulses conveyed from a reflex centre. We now know that both of these elements are necessary

for normal reflex activity; likewise a degree of co-ordination is required. The maintenance of tonicity and coordination is in part the function of the higher centres. We may have a simple increase of tendon jerk without associated hypertonus—as for example when a lesion exists in the spinal cord as distinguished from a lesion of the cerebrum or cerebellum involving hypertonus and increased tendon jerk. This is a point of importance in differential diagnosis, since in cerebral lesions hypertonus and increase of tendon reflex are associated. Again as illustrative of higher centres of reflex activity is the instructive clinical picture in man of total transverse lesion of the upper cord. In this case not only are the deep reflexes including the tendon jerks below the lesion at once permanently abolished but likewise the muscle loses its tone, becomes flabby and does not react to faradism. The only evidence of cord activity remaining is the presence of the superficial reflexes in reduced degree. In these cases the reflexes give us the key to the prognosis, most ominous of course, if the cord is completely severed; we might indeed welcome any evidence of higher reflex control such as ankle clonus to give us hope that at least some impulse was still conveyed from the cerebral sphere. The superficial reflexes being simpler and requiring no tonus, are evidently more readily retained by the cord segments.

This brings us to the influence of the cerebellum upon reflex activity, a subject of great clinical importance. The behavior of the reflexes generally in intracranial neoplasm is still a subject of discussion. We often rely very largely upon the modification of the reflexes to in part guide us in both diagnosis and localization in affections within the skull. The muscle rigidity and hypertonus and exaggerated deep reflexes so often seen in intracranial growths are probably due to the uncontrolled influence of the cerebellum as we observe in irritative lesions of this organ. The study of a large number of cases of cerebellar tumors recorded in literature indicates to one how various is the behavior of the reflexes in tumors of this region. I have endeavored, however, to draw conclusions which may serve as guides in our interpretation of the reflex phenomena. In the great majority of cases of neoplasm presenting hemiplegia the deep reflexes are exaggerated on the affected side. In bilateral paralysis, of all four extremities, the upper more involved than the lower, attended by exaggerated deep reflexes and by the Babinski extensor toe reflex, we are dealing with tumor of the pons or medulla or a subtentorial cerebellar neoplasm. The value of the reflexes in these cases is well illustrated in differentiating between cerebellar neoplasm and multiple sclerosis. Although usually these two affections present no difficulty in differential diagnosis, we not so rarely meet with instances where the clinical picture leaves us in doubt. The distinction is all the more important since the one furnishes a most favorable field for surgical interference. In many of these cases of cerebellar growth a fine rhythmic tremor is present very closely allied in character to the intention tremor of disseminated sclerosis. In fact the diagnosis may depend almost entirely upon the behavior of the reflexes. Although

alterations of the tendon reflexes, as observed in multiple sclerosis, may obtain in tumor of the cerebellum the superficial skin reflexes will aid us. Early in the course of multiple sclerosis the Babinski phenomenon is present, while in tumor of the cerebellum this pathological reflex appears only late, if at all, and then rather as the result of direct implication of the motor tract. Further in multiple sclerosis absence of the abdominal reflexes has almost pathognomonic significance while in cerebellar tumor these reflexes are unaffected. In unilateral cerebellar growth the diminution of the deep reflexes on the side of the lesion is commonly observed, when the cerebellar tissue is invaded and partially destroyed, although when the lesion is only irritative an increase on one or both sides is observed, although ankle clonus has never been an associate symptom. In tumors of the vermis we usually see exaggerated deep reflexes on both sides and this invariably, after secondary hydrocephalus. In extracerebellar tumors of the posterior fossa and indeed elsewhere in the brain we, as a rule, find increased reflexes particularly on the side opposite the lesion as well as ankle clonus and spasticity. In postoperative cases of cerebellar growths the tendon reflexes are usually lost for a few days following the operation and then as a rule reappear. The loss of the reflexes in these cases is associated with extreme muscular asthenia or hypotonus. In some cases a peculiar ankle clonus develops but is not that seen in spastic states; it is irregular, intermittent, of short duration and not attended by the Babinski reflex or other symptoms of motor tract involvement.

The superficial reflexes in cerebellar growths remain normal unless there is pressure upon the corticospinal system, direct or indirect, causing variable pressure upon the cord through the cerebrospinal fluid. In intracerebellar tumors I have found no case reported in which the extensor type of plantar reflex was present.

We not infrequently see cases where the reflexes aid us materially, in distinguishing tumors of the pons from those of the cerebellum and the vast importance of differential diagnosis lies in the possibility of operative intervention in the one case and its futility in the other. In lesions of the pons the reflexes are as a rule early affected while in uncomplicated cerebellar lesions they remain much longer undisturbed. Ankle clonus, diminution or abolition of the abdominal reflexes, or the presence of the Babinski phenomenon speaks strongly for a pons rather than cerebellar tumor and these reflexes are at times our chief means of differentiation.

In cerebral lesions also, the reflexes not infrequently aid us materially. For instance, in those oft perplexing growths in the frontal lobe in which we seek every possible aid for localization diagnosis, a unilateral increase in the knee jerk or a slight clonus or Babinski reflex or its modifications may be our beacon light. Granger Stewart has recently demonstrated in tumors of this region a diminution or abolition of the superficial abdominal reflexes as an early symptom.

A word as to the reflexes in cerebral apoplectic states. During coma and the condition of shock, the reflexes on the hemiplegic side are as a rule tempor-

arily lost, reappearing with exaggeration in about forty-eight hours, a cross thigh adductor jerk being also elicited at this time with ankle clonus. The skin reflexes on the other hand as a rule immediately disappear while the Babinski extensor toe reflex is found. The last two mentioned symptoms are of value in distinguishing organic hemiplegia from the hysterical forms. In very slight seizures unilateral abolition of the superficial reflexes and the presence of the pathological toe reflex may be the only objective sign of an organic lesion. As a rule, extinction of the principal skin reflexes, particularly the plantar, abdominal, and cremasteric, is due to some diffuse process within the spinal cord, such as multiple sclerosis or diffuse myelitis.

It is important to remember that in certain diseases other than those of the nervous system the reflexes may at times become modified. In the initial stages of syphilis it is asserted that the knee jerks are usually diminished as is the case in alcoholism even when no evidence of peripheral neuritis is present. That we may not regard the nervous system as seriously involved, it must be remembered that transitory absence of the knee jerks is sometimes found in diplococcus pneumonia while they remain unaffected and sometimes exaggerated, in septic pneumonia and tuberculosis. The frequent absence of the knee jerks in diabetes and diphtheria is familiar to us all.

Likewise the superficial reflexes of the abdominal wall are peculiarly affected by certain intraabdominal conditions. In appendicitis and typhoid for example the skin reflexes of this region are frequently absent or markedly diminished. This modification, however, is found only in individuals of not advanced age, not past middle life. The return of these lost reflexes is usually synchronous with other evidences of recovery.

In many cases of asymmetrical rheumatoid arthritis, a comparison of the affected with the spared extremities, shows the increase of the deep reflexes on the affected side; the superficial reflexes are not subject to these comparative changes. This would indicate that the disease is not limited to the joints.

Although as a rule the reflexes of the upper extremity are of far less significance than those of the lower, Jacobson has very recently described a reflex which may be interpreted as analogous to the Babinski phenomenon of the toes. In spastic paralysis of cerebral origin, affecting the upper extremities this reflex is said to be nearly constant. It is elicited by directing the patient to place the forearm with the fingers extended, palm upwards on the observer's hand. A rapid, light tap on the lower end of the radius with the percussion hammer in positive cases results in flexion of the fingers especially the terminal phalanges. In normal individuals the fingers remain unaffected.

Gordon, of Exeter, in 1901, called attention to an interesting modification of the knee jerk in chorea. I found it present in a number of cases but by no means constant. The differential diagnosis in this disease is rarely difficult, although some forms of tic and athetotic movements bear a close resemblance to chorea, and in these cases the Gordon symptom may aid. With the patient recumbent and

knee raised, the heel resting on a couch and the muscles of extremity relaxed, if the patellar tendon is tapped, the foot instead of dropping back at once remains suspended for a variable time, then slowly descends. The knee jerks generally in chorea are variable, and their relation to the degree of muscular weakness and incoordinate movement is not constant.

While arising from the reflex centres in the spinal cord, the clinical skin reflexes become active only through descending fibres which originate from the cortical centres. This explains the abolition of cutaneous reflexes in hysteria for instance. The behavior of the cutaneous reflexes is quite different from that of the deep ones. The former are absent in paralysis of peripheral origin. In organic affections of the spinal cord, their behavior is variable and dependent upon the integrity of the several segments of the reflex arc. A lesion in the course of the arc causes abolition of the corresponding cutaneous reflex, whereas the reflex is otherwise preserved and may be increased if the lesion is above the reflex centre. In general, it may be said that in intracerebral lesions the cutaneous reflexes are usually abolished in cases where the deep reflexes are exaggerated.

The alteration of reflex activity is of great diagnostic importance in cord lesions. *Absence* or marked diminution of the deep reflexes is found in early locomotor ataxia, syringomyelia, in the advanced stages of general myelitis, anterior poliomyelitis, simple transverse myelitis occurring at the level of the reflex centre, in multiple sclerosis, when a mass of sclerotic tissue invades the reflex arc, in hæmorrhage and neoplasm of the cord at the site of reflex centre, and in embolic processes. *Increase* of the deep reflexes indicative of deranged function of the pyramidal tracts, is found in disseminated sclerosis, in descending degeneration of the pyramidal columns below the level of the lesion, in specific paraplegia, in early caries of the spine, when some pressure is exerted directly upon the cord, or when nutritional disturbance of the cord occurs at the site of the osseous lesion, and in early acute myelitis, also in the earlier stages of amyotrophic lateral sclerosis before descending degeneration has invaded the arm centres, in which case the reflexes of the upper extremities are lost, while those below remain exaggerated. The reflex mechanism of bladder and rectum is complex and has a spinal centre in the fourth and fifth lumbar segments. A derangement of this mechanism is common in all forms of spinal disease and is not especially pathognomonic of character or localization of lesion. Its involvement indicates organic, not functional, lesion.

The motor tract system comprehending the neurone paths from cortex to periphery is of such vast importance and so often involved at some part of its course, that for diagnosis in general and localization in particular, every symptom indicative of its involvement is studied with great care. Within the past decade, much important data has been developed, especially in reflex variation. Among these are the so called Babinski or extensor reflex of the toes, its modifications known as the Gordon or paradoxical reflex, and the Oppenheim; Mendel's dorsal foot reflex, and the Bechterew reflex. The two lat-

ter are often grouped together as the Mendel-Bechterew phenomenon.

Increased tendon reflexes and muscular rigidity, even spurious ankle clonus, the symptoms most constant in motor tract lesion, are not infrequently found in purely functional disorders; again ankle clonus and muscular rigidity may fail in motor tract lesion of organic origin. It is in such cases particularly, the presence of one or more of the newly discovered reflexes mentioned, is of value.

Absence of the normal foot sole reflex is rare in health. The normal plantar response, it will be recalled, consists of plantar flexion of the toes upon stimulation, preferably upon the inner half of the foot sole.

In lesions of the principal motor tract of the brain and cord, the response upon stimulation of the foot sole is dorsal flexion, or more exactly, extension of the toes, particularly the big toe. The characteristic response in pyramidal tract lesions is a definite, slow extension of the big toe, with or without extension and separation of the other toes. It is best elicited by a slow, steady, upward stroke of the outer side of the foot sole. The foot should be dry and warm when the test is made, and an object used such for example as a not too pointed orange stick. My own repeated observations confirm those reported, showing considerable variation in the character of the reflex. It is occasionally found, for example, that while stimulating the inner side of the sole causes normal flexion, the typical extension reflex is obtained when the outer side is stimulated and this is of pathological significance. The Babinski reflex is one of the earliest evidences of involvement of the motor tract system, not of the peripheral nerves, however. It is likewise one of the latest to disappear as the normal condition is approached, and hence is an aid in later diagnosis. In slight or partial lesions of the motor tract system, we find frequently, if not the true pathological extensor reflex, at least some modification of the normal. For example, with minimal stimulus of the foot sole, we may get a contraction of the fasciæ femoris and of the extensor proprius pollicis. The Babinski reflex is often the first objective sign of hemiplegic seizure. It is likewise the only reflex present during an epileptic convulsive seizure. The reflexes, particularly the extensor toe type—the Babinski—is often of great importance in differential diagnosis between an hysterical convulsion and a true epileptic seizure. Abolished patellar reflexes, soon followed by exaggerated ones, and perhaps ankle clonus associated with the Babinski, speak unerringly against hysteria and simulation. A very much exaggerated knee jerk with or without a spurious ankle clonus is found in purely functional conditions. In these cases the exaggeration of tendon reflex phenomena may be so great as to warrant the name "spinal epilepsy" or "trepidation," terms applied to this condition by some observers. A slight tap on the periosteum near the tendon may be sufficient to cause a violent extension of the lower leg. The Babinski sign and other symptoms of organic disease are absent. One must bear in mind, however, that in some toxic states, in uræmia, for instance, this marked increase of reflex action may be an early symptom. In the latter cases, I believe this is due to increase in intracranial pres-

sure. In so called hysterical paralysis, the normal plantar reflex is frequently absent, but its place is taken by the flexion at the hip upon plantar stimulation.

The Babinski is of aid also in the comatose stage of hemiplegia and in distinguishing organic from functional lesion. Graeffner, in 1906, among 116 patients suffering from lesion inducing hemiplegia, was able to demonstrate the typical Babinski reflex in sixty-three per cent. of the cases. The average of other observers is even higher.

Whereas this extensor reflex of Babinski is of inestimable value in cases of a positive pyramidal tract lesion, Gordon's so called "paradoxical reflex" is often found when only a transitory irritative lesion is present. This Gordon reflex consists, as in the Babinski phenomenon, of extension of the toes, particularly the big toe, but is elicited upon deep pressure of the superficial calf muscles, the stimulus extending to the deeper muscles. Gordon records two operative cases in which both Babinski and Oppenheim reflexes were absent, the diagnosis of a cortical lesion having been established largely by the presence of the paradoxical reflex. In cases of a slight transitory lesion of the pyramidal tract, the Gordon reflex is occasionally the only pathological objective sign demonstrable. In cases of general paresis, it is one of the earliest objective symptoms. I have found in the literature a few exceptional cases reported, in which no direct involvement of the motor tract was evident, although the Babinski was found. Thus the reflex was reported in uræmia, alcoholic stupor, sometimes in meningitis, and after very large doses of strychnine hypodermically injected. Thus a few minutes after the administration of a sixth of a grain of strychnine, the reflex was present for a half hour.

Oppenheim has demonstrated the occurrence of the typical extensor movement of the great toe in lesions of the pyramidal tract system by a *stroking of the inner surface of the leg along the inner side of the tibia, below the knee, from above downward*. The extensor reflex thus produced is sometimes to be elicited when neither the Babinski nor the Gordon is found. In twenty-four cases of multiple sclerosis this Oppenheim reflex was of diagnostic aid in eighty-three per cent., and was unilateral in one third of the cases.

Mendel's pathological foot reflex recently described consists of plantar flexion of the toes elicited by tapping the dorsal surface of the foot. It is said to be frequently present in a large percentage of pyramidal tract lesions.

The Bechterew phenomenon of pathological significance in affections of the cerebral motor neuron acquires special importance in those cases where the Babinski, Gordon and Oppenheim phenomena cannot be elicited because of contractures and local muscular rigidity. If the reflex is positive, when the foot of the patient is grasped and it as well as the toes placed in strong plantar flexion, this plantar flexion is at once followed by dorsal flexion of the foot and toes. In severe cases, and after stronger plantar flexion, there occurs also flexor movement in the knee and hip joint. These two last described reflexes are frequently associated and then known as the Mendel-Bechterew phenomenon.

Their true diagnostic value in a large percentage of cases, although strongly maintained by the authors, has not yet received universal recognition.

Scarcely sufficient attention has until recently, been bestowed upon the Achilles tendon reflex. This phenomenon is rarely absent in health, although, perhaps, not quite as constant as the patellar reflex. Its absence is especially significant in suspected tabes and sciatica. Unlike the tendon reflex at the knee, the Achilles is not permanently affected by previous toxic states, as for instance, diphtheria. The possibility of congenital absence of the knee jerk is claimed by some authorities. In sciatica the Achilles reflex is almost invariably modified and the degree of its activity is said to be of prognostic value. It is certainly an aid in differential diagnosis between sciatica and simulated pain. On the other hand, I have observed a number of cases in which, even with manifest atrophy of muscle tissue of the calf, the Achilles tendon response was prompt. Of interest, however, is the observation that in some cases the degree of pain was comparatively slight, the atrophic changes predominating. It is not unlikely that the loss or diminution of reflex in sciatica is due rather to painful spasm.

According to Mendel, tapping upon the lateral portion of the dorsum of the foot in its proximal half causes a dorsal flexion of the second to fifth toe, in healthy individuals. This reflex is increased when the general reflex irritability is augmented. It was found to be absent in the majority of cases of polyneuritis and anterior poliomyelitis, and also in certain cases of syringomyelia, tabes dorsalis, and cerebellar tumor. In certain cases of organic nervous diseases with spastic paralysis, in which the Babinski reflex is present, tapping of the dorsum of the foot gives rise, not to dorsal, but plantar flexion of the fourth toe (on the affected side, in hemiparesis); but in many cases, a dorsal flexion occurs in spite of a positive Babinski reflex being present. If tapping of the dorsum of the foot is followed by a plantar flexion of the toes, this sign distinctly contradicts a functional affection, and indicates the existence of an organic lesion.

Among the recently studied reflexes, a few involving the cranial nerves are worthy of mention. In trigeminal nerve lesions, the so called orbicularis palpebrarum reflex is diminished or absent. In peripheral facial palsy, it is likewise absent on the affected side. Under normal conditions, the reflex contraction of this muscle is obtained by firm strokes upon the forehead and usually also by tapping the superior maxilla.

An interesting reflex, the so called "eating reflex," described by Oppenheim, may acquire a practical importance in the differential diagnosis between epilepsy and the paroxysm of hysteria. This reflex consists in rhythmic, tasting, sucking, chewing and swallowing movements, occurring at short intervals, and normal only in the first few months of infant life. Under pathological conditions it occurs in later life and has been demonstrated in pseudo bulbar palsy, and hydrocephalus, i. e., whenever the cerebral cortical centres are inhibited so that the regulating influence upon subcortical and basal centres is lost or diminished. The return of this reflex under pathological conditions is analogous to the reestab-

lishment of the infantile type of the plantar reflex, namely, the Babinski extensor reflex.

Whereas Oppenheim's eating reflex is ascribed to an interruption of the corticomuscular reflex arc, a new reflex described by Henneberg, is determined by an abnormal irritability of the centres contained in this arc. Hence, this reflex may appear in focal disease of the cerebrum, in which an irritative lesion is present. Henneberg's reflex consists of an active contraction of the orbicularis oris, when the hard palate is gently stroked. This reflex is rarely observed in children, often in hemiplegics, in some cases of multiple sclerosis and sometimes in dementia paralytica.

A summary of the results of Kempner's investigations upon an extensive clinical material into the corneal reflex, shows that a disturbance of this reflex due to organic causes is as a rule unilateral and generally combined with sensory disturbances limited to the area of trigeminal distribution. Functional derangement of this reflex on the other hand, is usually bilateral and the sensory involvement is not restricted to the anatomical distribution of the fifth cranial nerve.

Wernicke's hemianopic reflex although not new is recognized as of vast import in distinguishing lesions of the optic tract from those of the intracerebral optic path and centres. This hemianopic pupillary reaction occurs when in hemianopia the lesion is posterior to the corpora quadrigemina—the centre of reflex control. This pupillary phenomenon is obtained by carefully allowing a shaft of strong light to fall upon the blind half of the retina with a resulting contraction of the pupil.

The condition of the reflexes in various forms of insanity is not of great importance except in cases of organic brain disease. In dementia paralytica, the behavior of the reflexes in general corresponds as a rule to the tabetic phenomena. Abolition of the patellar reflexes on one or both sides, together with psychic depression and some loss of memory, are characteristic features of dementia paralytica; in other cases, the exaggeration of the reflexes is noted associated with an exhaltated or maniacal mental state. In cases of insanity complicated by morphine addiction, by multiple neuritis and tabes dorsalis, the deep reflexes are usually absent or markedly diminished, with an associated cutaneous hyperalgesia. The Argyll Robertson pupil in mental affections indicates sooner or later general paresis. In syphilitic brain disease, rigid pupils reacting neither to light nor to accommodation are frequent. A transitory rigidity of the pupil on one or both sides is not uncommon in epilepsy and a transitory Argyll Robertson pupil, i. e., one reacting to accommodation only, is seen in general paresis. In neurasthenia, both the superficial and deep reflexes are exaggerated or increased just as the affective excitability is intensified. The presence of rigid pupils and diminished or absent deep reflexes in the presence of even the classic symptoms of pure neurasthenia should awaken the suspicion of organic brain disease.

It would not be amiss in closing to call attention to the familiar work of Head, MacKenzie, and Schmoll, who have discovered that definite areas of the surface of the body may become reflexly hyperæsthetic in visceral disease. When in an affection

of an internal organ, the normal visceral sense is pathologically intensified, the irritative stimulus is transmitted to a centre of the cord by way of the sympathetic. This irritation is reflexly expressed in various ways, such as vasomotor or sensory effects in definite areas, corresponding to segmental control in the cord. What has been described, for example, by these observers, as purely reflex phenomena in coronary sclerosis are the paroxysmal pains in the course of the eighth cervical and first dorsal segment of the cord. Chronic contraction of the pectoralis major, muscular weakness in the arms, vasomotor disturbances, such as paleness, followed by cyanosis in the left arm, zones of hyperæsthesia in the course of the nerve distribution, as indicated by the goose flesh and pilomotor reaction, with dilatation of the pupil, when the skin of that area is pinched, are said to be reflex signs of coronary sclerosis. The pathognomonic value of these so called reflexes is vitiated, however, since they are known to occur in cardiac affections generally, and in a mild form in that type of neurasthenia called by the Germans *hysterische Angstzustände*. MacKenzie has described the phenomena of visceral pain representations in the skin as reflex nature, although the true mechanism of the phenomenon remains for future investigation to disclose.

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A STATISTICAL REVIEW OF ONE HUNDRED AND FIFTY CONSECUTIVE LAPAROTOMIES.*

By E. R. SECORD, M. D.,
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It is my desire to bring before you this evening a statistical review of the last 150 laparotomies that I have been called upon to perform, to review especially the fatal cases, and to emphasize some of the causes affecting the mortality of abdominal disease. In the series referred to the conditions which demanded operation were as follows:

Condition.	Cases.	Deaths.
Appendicitis	47	3
These may be grouped into		
acute	15	0
acute with abscess.....	13	0
acute perforative with generalized peritonitis	11	3
chronic	3	0
interval	5	0
Post appendicular peritoneal abscess...	47	3 ¹
Cæcal intus (radical cure).....	4	0
Cholecystotomy, for cholelithiasis.....	1	0
for cholecystitis and pancreatitis.....	4	1
Exploratory laparotomy, for various conditions, no radical operation being undertaken	2	1
In this number are included only the tuberculous peritonitis cases.....	10	0
Gastric ulcer (Gastroenterostomy).....	3	0
Fibromyoma uteri (hysterectomy).....	1	0
Hernia, inguinal, radical cure.....	3	0
inguinal, strangulated	25	1
femoral, radical cure.....	5	0
femoral, strangulated	1	0
ventral	4	1 ¹
Intestinal obstruction, acute.....	2	0
Chronic	10	5
Three of these are included above		
Ovarian disease (oophorectomy).....	1	1
Ovarian and tubal disease (oophoroalpingectomy)	4	0
Ventrosuspension	10	0
Ventrosuspension, with vaginal operations	4	0
.....	12	1 ¹
	150	11

*Read before the Brant County Medical Society, May 7, 1909.
¹Three patients dying of obstruction where second operations were done. The deaths are credited to the primary condition.

In the 150 operations there were thus eleven deaths, or a percentage of 7.3. Of these three were due to appendicitis, one of which was directly due to secondary obstruction; two were due to shock; one to hæmorrhage from gallbladder and intestine; one to strangulated femoral hernia; one to chronic intestinal obstruction from carcinoma; one to obstruction due to acute gastric dilatation, following an operation for ventrofixation; two to acute intestinal obstruction, or including the appendix case, the strangulated femoral hernia, and the gastric dilatation, five were due directly to obstruction.

This looks like a large operative mortality when compared with the published statistics of some one operation. For instance, Mayo (1) reports 1,500 gallbladder operations with a mortality slightly less than five per cent., and Coley over a thousand hernia operations with a mortality under one per cent. Statistics of clinics publishing results of their cases as they consecutively occur are not so available. Alexander Nicoll, of New York, (2) reports his experience in 190 consecutive operations in the surgical service of the Fordham Hospital. Of these 102 were laparotomies and eleven of these resulted fatally, a mortality of slightly over ten per cent.

Of these deaths three were due to appendicitis, and six to intestinal obstruction, including strangulated herniæ. As will be noted this bears a remarkable similarity to those in my own cases. Three of the deaths in each were from appendicitis; one in each was from chronic obstruction due to cancer; five more in each were caused by acute obstruction, of which one in each series was from strangulated femoral hernia.

These are the facts. What deductions may be drawn therefrom? They show that the great cause of the mortality in abdominal work is appendicitis on the one hand, and obstruction of the bowels on the other.

Firstly regarding appendicitis. A glance at the statistics shows: 1, Operation in acute cases, without perforation or suppuration—no mortality; 2, operation in acute cases, even with abscess if localized, no mortality; 3, operation in cases where perforation has occurred, and where unfortunately no protective layer of adhesions has formed—nearly thirty per cent. mortality. Therefore to prevent deaths from appendicitis, *operation must be done before perforation occurs*. Now, given an acute case of appendicitis no man living can, with any reasonable degree of certainty, say whether perforation is going to occur or not, or if so how soon. Therefore the dictum seems safe: Given an acute case of appendicitis, remove the appendix immediately. Once the diagnosis is made, there is no room for hot water bags, poultices, antiphlogistin, nor for castor oil, or enemata.

Now, many will say, and do say even to-day, that they treat many patients by these means, and that many recover. That is an undoubted fact. Many would recover without any treatment at all, but this is not the question. The proposition is that every patient treated early enough by competent surgical methods will recover, while under any other treatment a certain proportion will die.

I have said that no man can say in any given

case, whether perforation is going to occur or not. This sounds like a pretty big order, it would surely seem that there must be some cases so mild that any one could safely offer the opinion that they would not perforate. In this connection I would like to describe what happened to one of the leading abdominal surgeons of Canada, a man noted throughout the country for his painstaking diagnostic carefulness and thorough operative technique. He, one day, saw a boy with symptoms so mild, so indefinite, that he could not bring himself to advise any operation. The next day the boy was completely well, absolutely no pain, tenderness, or other symptom. The third day he was up, and the fourth he walked a hundred yards to the corner to see a procession pass. While there he was taken with severe abdominal pain, and three hours later I saw a perforated appendix removed, the peritonæum full of seropus, and no limiting adhesions.

Secondly regarding the obstructive class. Here there are two great divisions, the strangulated herniæ, and the obstructions due to other causes. The only way to prevent the occurrence of strangulated hernia is to have the operation of radical cure done in every case, not entirely and thoroughly relieved by a properly fitting truss, and when strangulation has occurred operation should be done at once.

With regard to taxis in these cases I wish to say a few words. It is such a generally recognized and generally adopted plan of treatment that anything which I can say against its use may sound almost heretical. However, these long standing hernia cases usually learn how to put their own ruptures back, when they come down. They know the best position to lie in and the best way to press, and usually they do not send for a physician until they are absolutely unable to return the rupture themselves. As a rule when they can't put it back, the physician cannot either, and what I particularly want to emphasize is that continued efforts at taxis are harmful, both directly through injury to the bowel, and especially to the thin walled veins of the mesenteric plexus, and indirectly through the loss of valuable time. There is a manœuvre that is much more valuable, and certainly less harmful, send the patient to the hospital, have him put in bed with the foot of the bed elevated two or three feet, give him a hypodermic injection of $\frac{1}{4}$ gr. of morphine with $\frac{1}{120}$ of atropine to quiet his nervous system and relieve shock, and place an ice bag over the rupture to relieve congestion and swelling. Frequently the rupture will return of itself. It is does not do so within an hour, anesthetize your patient, try taxis on the operating table, if you so desire, and if unsuccessful, and I have yet to see a successful case after the foregoing manœuvre has been tried, proceed to operate.

In regard to the other cases of obstruction, the great majority of these owe their cause directly to peritoneal adhesions.

So long as there is abdominal inflammation there will be exudate; so long as there is exudate there will be adhesions; so long as there are adhesions there will be bands, kinks, stenosis; and so long as any of these are present there may be obstruction.

Once there is obstruction operation is the only salvation, and its probability of effectiveness is in direct proportion to the earliness with which it is undertaken. Therefore, the important thing is early diagnosis, and here I desire to lay great stress on the diagnostic value of a painful peristaltic wave associated with gurgling. The pain is an early symptom, it is due to the obstructed peristaltic wave, and this obstructed peristalsis causes the gurgling. Sometimes the peristaltic wave can be seen, sometimes it can be brought on by scratching the skin of the abdomen, and when this symptom complex is present, the probability of obstruction of the bowel is great.

In conclusion I wish to quote from the words of Dr. Murphy, of Chicago, in his preface to the surgical volume of the *Practical Medicine Series* for 1909: "Procrastination and its direct sequel—death—still dominate in both intestinal and hernial intestinal obstruction, notwithstanding the clearly defined differential diagnostic signs and symptoms."

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A CASE OF ACUTE VERONAL POISONING.

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The following account of a case of acute veronal poisoning with a summary of the literature on the subject, may be of interest to many members of the profession:

CASE.—J. B. H., aged forty-nine, male, married, telegrapher, was admitted to the Buffalo State Hospital on March 23, 1909, thirty hours after having taken 110 grains of veronal with suicidal intent.

Upon admission patient was in a profound sleep, from which he could not be aroused more than to move an arm or leg; his temperature was 98.4° F., pulse 88, respiration 20, blood pressure 130 mm. of mercury. Face slightly flushed, skin moist, deep reflexes retained, corneal and skin reflexes abolished; pupils slightly contracted but reacted to light, had retention of feces and urine. Examination of a catheterized specimen of the urine showed nothing abnormal.

Subsequent History: The deep sleep continued for about twenty hours after admission, when he began to move about, open his eyes, and make inquiries as to where he was. He was very drowsy and answered questions with difficulty. The drowsiness gradually cleared up, his appetite returned, control of bowels and bladder was regained, and by the seventh day patient was apparently normal. He has shown no untoward symptoms since. No treatment was given except catheterization and rectal enemata.

E. Steinitz (*Therapie der Gegenwart*, May, 1908) collected ten cases of acute veronal poisoning, all that could be found, in the literature up to that time. In his series the dose varied from 45 grains to 5 drachms (3 to 20 grammes). The mild cases where less than 75 grains (5 grammes) were taken, recovered in about three days; in moderately severe cases where over 75 grains and less than two and one half drachms were taken, recovered in about ten days. The symptoms in the latter type were substantially those found in our case. In the

severe and usually fatal cases where more than two and one half drachms were taken consciousness did not return, the lost reflexes did not reappear, respiration and cardiac action became weak and irregular with Cheyne-Stokes breathing, progressive cyanosis, cardiac failure, and death.

The clinical picture of veronal poisoning is profound sleep with good heart and respiratory activity, abolished corneal and skin reflexes, with persistence of pupillary and tendon reflexes. Absolute certainty of diagnosis can only be arrived at by the extraction of the veronal from the urine with ether. The ether is then evaporated, and the resultant crystals will melt at about 185° C.

Mild cases get well without treatment. If seen early stomach lavage should be practised. Castor oil and enemata are indicated for the bowels; when necessary urinary flow must be kept up by hypodermoclysis, cardiac and respiratory failure calls for caffeine or camphor, with warm baths or cold sponges as adjuvants.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXVII.—How do you treat supraorbital neuralgia? (Closed June 15, 1909.)

LXXXVIII.—How do you treat epistaxis? (Closed July 15, 1909.)

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Answers due not later than August 16, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practically no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVI has been awarded to Dr. Charles Nahum Haskell, of Bridgeport, Conn., whose article appeared on page 1311 of volume lxxxix.

PRIZE QUESTION LXXXVI.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOUS DISEASE.

(Concluded from page 75.)

Dr. N. E. Sartorius, of Pocomoke City, Md., states:

Pulmonary tuberculosis is the most prevalent, fatal disease in the world, and since it is very insidious in its onset and obscure in its early manifestations, it is essential that we are apprehensive of nearly every patient that comes under our care.

It is very important to discover pulmonary tuberculosis before physical signs are manifest or tubercle bacilli are to be found in the sputum. In order to make an early diagnosis, we must see the patient early,—hence the necessity of impressing the public with the importance of consulting a physician for slight ailments.

Granting that my patient with pulmonary tuberculosis has come to me early, my suspicion is generally aroused by his complaint which is usually "a weakness" or "run down condition" with or without slight indigestion, catarrh, or hæmorrhage, and with such complaints I direct my attention, at once, to tuberculosis and proceed to find out if the patient has inherited or acquired a susceptibility to the disease.

Susceptibility is shown by a family history of lung diseases, past or present, an occupation which necessitates working in places rendered unsanitary by overcrowding, foul air, small particles floating in the air, dampness, lack of sunshine, or by the patient's dissipated habits, or past diseases, in fact by any circumstance which has lowered the resistance and vitality of the patient.

Having looked into the susceptibility of my patient I proceed to his subjective symptoms, and if he has an incipient tuberculosis, I expect to find some symptoms, organic or nervous, which depend upon the effect of the tubercular toxins. Often it is some gastrointestinal derangement, more or less irregular in nature, which usually manifests itself in epigastric distress after meals, flatulence, eructations, or vomiting, and of such severity as to divert one's attention from the real trouble, especially if there is much anæmia present. If the patient with any of these gastrointestinal symptoms has had a hæmorrhage, however slight, which cannot be accounted for by the physical signs of some other disease, it is very probable he has phthisis, especially if he is under thirty years of age and is very susceptible to cold and hoarseness.

I may, or may not find a slight cough, often only a clearing of the throat, occurring usually in the morning and attended with a scant expectoration, which if blood streaked is very suspicious indeed. If I find a cough that does not yield to treatment, only temporarily, I look upon it with increased suspicion.

If my patient is tuberculous I find that the toxæmia has produced an irregularity of the temperature which is usually higher in the afternoon. The temperature is best determined by a four hour chart. Ofttimes the patient is not aware of this fluctuation of temperature, sometimes, however, he is conscious of increased warmth and thirst in the afternoon, which is aggravated by mental or physical excitement. With the variations in temperature goes an accelerated pulse of lowered tension, and all these toxæmic symptoms produce a gradual loss of weight.

Having seen my patient early, with complaints suspicious of tuberculosis and having established his susceptibility, I may, with a history of most of the above subjective symptoms, make an early diagnosis of pulmonary tuberculosis, even before physical signs clearly develop or bacilli show up in the sputum.

Dr. M. L. Hughes, of Clarksville, Tennessee, writes:

The early diagnosis of pulmonary tuberculosis rests chiefly upon a full history, together with the subjective symptoms and physical signs present, and when necessary, the assistance afforded by microscopical tests and tuberculin reactions.

The consideration of personal history is of vastly greater importance than family history. An unhygienic mode of life, dusty and confining occupations, the lack of opportunity for fresh air and sunlight must be reckoned with. It is well to note any association with a tuberculous subject, its intimacy and duration, and the disposal of the sputum during that period. A past history of any exhausting disease, especially pleurisy, influenza, asthma, and the excesses incident to a strenuous life.

The more thoroughly one investigates the possible time for infection, local causes and conditions conducive to the development of tuberculosis, the less important will that phase of family history known as "inherited predisposition" become.

The onset of pulmonary tuberculosis is often in the guise of the ordinary insignificant diseases. Of great importance is the temperature. A two hour chart kept for several days may show either a slight evening rise, a remittency, and sometimes a distinct intermittency with chill accompaniment; an associated anæmia, weakness, dyspepsia, and loss of weight might suggest either malarial or typhoid fevers, but the absence of the plasmodium of malaria and a negative Widal reaction would exclude both. Other cases may be ushered in insidiously by signs of pleurisy, generally alluded to as "a stitch in the side" and which is often mistaken for neuralgia. In these cases the effusion is circumscribed and evanescent and therefore easily overlooked. Pulmonary hæmorrhage in the very bloom of apparent health may be the first bomb thrown. Physical signs of existing trouble oftentimes cannot be found, and no other symptoms may be present and none may show for months afterward. But of all the manifold symptoms present in these suspicious cases, none can compare in importance with cough. It is the flag of distress of the respiratory tract. It directs the patient to the physician. It directs the physician's acumen to the most probable cause of trouble. Consider its significant persistence, without adequate local cause for explanation to be found in the upper respiratory tract, the occasional association of hoarseness; its early dryness; and later a scant glairy or mealy expectoration, and in a few cases, with an incidental tinge of blood.

Suggestive and guiding symptoms should at once call for a physical examination to convert a provisional diagnosis into a positive one. Examine carefully and repeatedly with a stethoscope the entire chest bared at different hours of successive days, and its secrets will become known to you. The earliest sign which one can recognize is a rough respiratory murmur produced by air passing over an uneven surface and through the narrowed lumen of the bronchioles incident to slight inflammatory changes. This murmur is most audible during inspiration over the apex and below the clavicles. But few cases present themselves so early as to elicit this sign. Listen for fine crackling râles at the

end of inspiration and after a slight cough in order to agitate the small amount of secretion present. Listen over the apices and if râles are found, and especially if unilateral, they bear the inscription on the flag of distress. These râles while most commonly found in the apices and most significant when found in the left, may be present under the clavicle, in the axilla, or in the interscapular spaces. Their persistence is of great importance and they show before the retarded or impaired motion over the area involved incident to beginning consolidation and before the noticeable supraclavicular flattening which soon follows. It is in these very early cases one can scarcely hear the breathing over the apex due to the diminution of the air content and it is also for this same reason the whispered voice will become greatly intensified there. Following close after these signs the respiratory rhythm will be disturbed somewhat and is associated with a slight impairment of resonance elicited by light percussion, and to an experienced touch, there may be appreciated an increase in vocal fremitus.

Since it is not an uncommon occurrence to find tubercle bacilli before the evidence of the existence of any physical signs of early tuberculosis, careful and repeated sputum examinations should be made in every suspicious case. But the clinician who, in the light of strong points in the history together with clear objective and subjective signs, withholds his diagnosis until tubercle bacilli are found, falls far short of his simple duty.

In doubtful cases recourse to Calmette's ophthalmotuberculin reaction will give positive evidence in about eighty per cent. of cases. One drop of a 0.05 tuberculin precipitation is dropped into the inner canthus of the eye. In four to eight hours, as an average time, a local reaction follows in the tuberculous, which is shown by redness of the conjunctiva, attended by an increased flow of tears, and sometimes by œdema of the lids and mucoid secretion.

The Röntgen ray as a diagnostic aid is of practically no value in incipient tuberculosis.

The most satisfactory diagnosis of early tuberculosis will be attained to only after a careful consideration and amalgamation of such evidence as each patient presents; not looking for a pathognomonic sign nor the constant presence of any class of symptoms or clinical phenomena; not forgetting the apparently robust and healthy often present tuberculous evidence and are our most hopeful subjects; and always giving the patient the benefit of the doubt.

Dr. Joseph Di Rocco, of New York, observes:

In making an early diagnosis of such condition a difficult problem will often be found, and one has to come to the definite conclusion by various means; has to take into consideration the make up of the patient with his past and present history and the available physical signs; such conclusion requires the aid of all the available resources. I do not think that we can lay our hands on one specific symptom or reaction and say that so and so has a pulmonary tuberculous disease in the very early stage.

We may divide our information by which we may draw our conclusions into *subjective* and *objective* data.

Subjective data deal with the past and present history of the patient. The value of a reliable history in suspected cases of tuberculosis cannot be overestimated. Past history brings us information regarding the patient's family; if any one has died of some pulmonary trouble. The patients are generally vague in this regard. Inquire into his mode of living, the condition of his surroundings, dwellings with poor sunlight, occupation, if at any time he has associated with tuberculous people, or has come in contact with them even though it has been for a short time; all these facts tend to help in forming a conclusion. Then I inquire into his antecedent history with regard to any previous diseases which he may have had. Thus we get helpful information in regard to the past life of the individual. Enlargements of the cervical lymph glands which persist in young people, are mostly of a tuberculous nature, and considering the fact that these people stand a small chance of getting up a tuberculous condition of the lungs directly from such infection, still, the system is constantly combating such infection, and if the resistant power of such individual is at a minimum the tubercle bacillus whether directly from the enlarged lymph glands or indirectly from such channels will always find a suitable soil for growth that will cause future trouble in the lung tissue. The possible channels of entry are many. The quicker we grasp the situation that tuberculosis is a general infection with local manifestations, the better the results not only in regard to the diagnosis but more so in regard to the treatment of the same. Pleurisy and specially the type with effusion stands foremost. There are those who regard all nontraumatic cases of pleurisy as of tuberculous origin, and others who say that fully one-third are tuberculous. Musser says: "The general diseases in the course of which pleuritis arises are usually infective, or of such nature as to cause irritating products to circulate in the blood. Of the former, the most common is tuberculosis." Then comes the condition of blood spitting, hæmoptysis; there are some who say that it is a positive sign of lung tuberculosis, and others say that fully fifty per cent. of these patients are tuberculous or will be so notwithstanding the dictum of Laennec and Trousseau. Thompson in his book, *Practice of Medicine* says: "It (hæmoptysis) is common in young and healthy subjects as a forerunner of tuberculosis, being derived from congestion of bronchial mucosa and giving no physical signs." There is no question that hæmoptysis plays a very important part.

Inquire into the existence of a cough, sweating fever, loss of appetite, physical lassitude with loss of strength and weight. These patients will always say that they feel not up to the mark, that on slight exertion they become fatigued and wearied, and that their physical power is below par, thus bringing on a sense of lassitude, caring for nothing except to sit around. Such is the case toward evening, especially when they complain that they feel warm (feverish) and sweat on exertion. Sweating of a cold and chilly nature is generally confined to the night, and this may go on irrespective of the outside atmospheric condition. Loss of appetite or a poor appetite is a very important symptom of early pulmonary tuberculous disease.

This condition may be and very often is the only complaint that the patient has. Always examine the lungs when the complaint is poor appetite with loss of weight, and in nearly every patient you will find the cause of the trouble to be tuberculosis. With the evening rise of temperature there is always an acceleration of the pulse rate. In regard to the cough, there are patients who have no cough at all; but in most cases there is some cough with little or no expectoration, the dry hacking cough. This may be in spasmodic outbreaks scattered throughout the day and some during the night, but the majority of cases, we find that the patient will say: "Cough comes only in the morning on arising, does not amount to anything as it is just a clearing of the throat." Inquiring further we find that there is more or less cough during the winter and that the patient easily catches cold. The cough does not, as a rule disturb these patients further than the physical discomfort that it causes and it alarms the friends more so than the patient.

The regions mostly affected or involved are as follows: The supraclavicular and infraclavicular regions (the right most frequent); supraspinous and interscapular regions posteriorly. And at times the left mammary region, an area covered from the third to the fifth rib.

Objective data—As a general rule such patients show a deficient development; a long, flat chest with rounded shoulders and a limited chest expansion, expanding feebly on deep respiration. The muscular atrophy is well noticed in the scapular regions, also by the prominence of the intercostal spaces, the poor development of the mastoid muscles, and the sinking in of the supraclavicular regions. The latter makes one suspicious, but it is not evident and prominent in every patient with early pulmonary tuberculous disease. This deficient muscular physique and with everything that goes under the symptom complex called anæmia, the peculiar pallor (contrasting very sharply the flushed cheeks) and blanched mucous membrane make a very characteristic clinical picture. Some of these persons have a head which is square or oblong in shape, with rather prominent frontal and parietal regions; and looks large in contradistinction to the face.

Physical signs—Inspection is covered by the previous remarks. Palpation does not show anything. Percussion as a rule is negative but there may be a slight impairment of resonance in the affected area as compared with the sound side. Under this may be mentioned muscle tapping bringing out a contraction of the muscle. This phenomenon is best elicited by tapping the pectoral muscles. Auscultation gives useful information and one must conceive and note any and every slight changes in the rhythm and pitch of the respiratory phenomena. The conception of such details necessitates a rather close examination of the chest and by so doing the ultimate result will be satisfactory to both the doctor and the patient. Instead of a smooth and even respiration we have the jerking or interrupted inspiratory effort. This condition, the so called cog wheel breathing is very characteristic. Then the expiration may be prolonged, and with this prolongation the normal vesicular murmur is lost, and we have now a prolonged expiration with broncho-

vesicular tendencies. In regard to the adventitious sounds heard the foremost are the crepitant and subcrepitant râles. They may be heard after a deep respiratory effort, but in nearly every case coughing followed by deep respiration will bring out these râles very distinctly. A very characteristic sign is the presence of these râles coming in "showers" so to speak, at the end of inspiration or just at the beginning of expiration. These râles coming in "showers" are generally so that one can actually count them. Vocal resonance gives negative results.

As to the absolute and sure diagnostic signs of pulmonary tuberculous disease, the positive finding of the tubercle bacillus in the sputum stands foremost. But in nearly every early case there is little or no sputum at all so that an examination does not help us and very often the finding is negative. Strictly speaking the presence of tubercle bacillus in the sputum means tuberculosis of the respiratory tract, and not necessarily of the lungs, but in ninety-nine per cent. of the cases the lungs are involved.

As to the various reactions, tuberculin, ophthalmic (Wolff-Eisner and Calmette), and cutaneous (von Pirquet), they are open to objections. Many say that they take place when there are active processes in the body and that the result points to a tuberculosis of anywhere in the body and not to any specific region.

Radiography does not give very much information in the early cases.

Résumé: History, past and present, hæmoptysis, cough, fever, sweat, loss of appetite and weight, anæmia. Physical signs, inspection; but chiefly auscultation, cog wheel respiration, prolonged expiration, the presence of crepitant and subcrepitant râles. Various positive reactions. The conclusion is made by adding together all the available resources. Whatever interpretation is drawn from the history (past and present) and the available physical signs, helps very materially in forming a diagnosis, and as confirmative evidence one can fall back on any one of the various reactions, of which, perhaps the oldest, simplest, and the least harmful to the patient is the examination of the sputum for tubercle bacilli. Study the patient as an individual and let the findings of the clinical laboratory confirm that study.

Dr. G. L. Rohdenburg, of New York, says:

In making an early diagnosis of pulmonary tuberculosis I consider three factors, history, physical findings, laboratory and other aids. In taking the history of a suspicious case inquire as to the possible source of infection (relatives, friends). Next consider occupation and hygiene of surroundings. In past history, determine whether the patient has been the victim of measles, whooping cough, grippe, pneumonia, and typhoid fever, all of which may have tuberculosis as sequelæ. As regards present illness the suspicious signs are steady gradual loss of weight and strength; slight, dry, unproductive, but persistent cough, or frequently recurring colds, slight feeling of warmth in the afternoon, and finally hæmorrhages.

In physical examination, an anæmia and impaired expansion especially of the apices are to be thought of on inspection; and with this deformities leading to poor expansion are not to be forgotten. Both

apices are carefully mapped out with a pencil and their width and pulmonary resonance compared. Impaired resonance and a narrow apex are very suspicious. In incipient tuberculosis the inspiratory murmur is roughened and approaches that type known as interrupted. At the end of deep inspiration a few crepitant râles may be heard. These may often be accentuated by the administration of potassium iodide. Expiration is prolonged.

X ray examination has often revealed an incipient tuberculosis when physical signs were absent. A persistent slight rise of temperature in the afternoon of one-half degree or more is confirmatory. The various vaccine tests are of small value in determining the activity of the lesion. A positive reaction is confirmatory of the fact that tuberculosis is present in the body. Rarely a positive sputum report obtains before physical signs are marked. Tuberculin given subcutaneously and causing a rise of temperature, constitutional depression and local reaction at the suite of disease is positive.

Loss of weight, slight cough, afternoon temperature, the signs at the apices, with or without confirmatory laboratory tests, means to me tuberculosis.

Correspondence.

LETTER FROM LONDON.

Radioactivity and Cancer.—The Hospital Inspection of School Children.—The Darwin Celebration.

LONDON, June 21, 1909.

The Croonian Lectures, delivered annually before the Royal College of Physicians, were of remarkable interest this year. Dr. Lazarus-Barlow, the well known pathologist, and director of the Cancer Research Laboratories at the Middlesex Hospital, was the lecturer and his subject was radioactivity and carcinoma. The lecture is the result of extensive experimental work carried out by Dr. Lazarus-Barlow and his staff for the last three years. The keynote to these investigations has been the fact that the x rays will produce cancer of the skin in those who are exposed to them for a long time. It has also been known for many years that prolonged contact of certain substances with the skin is also apt to lead to cancer; thus, clay pipes have been responsible for many cases of cancer of the lip in persons who have smoked them constantly. Again, workers who have had to do with tar and paraffin not infrequently have cancer of the skin, while soot is known sometimes to cause cancer of the scrotum, known as chimney sweep's cancer, and it has been found that cancer of the cheek has resulted from the habit of chewing the betel nut, which is prevalent in some eastern countries. By very elaborate tests Dr. Lazarus-Barlow has demonstrated that all these substances actually give out very minute quantities of x rays, and in face of these facts he has come to the conclusion that the reason they so often lead to cancer might be this property of giving out x rays. Since the discovery of radium and the fact that it owes many of its remarkable properties to its power of giving out x rays it has been found that a great many familiar objects are radioactive to some extent, but the investigations commenced at

the Middlesex Hospital were the first which sought to find out and fully demonstrate the radioactive properties of human tissues. The result of these researches has been the discovery that there is some relation between the radioactive properties of the tissues and cancer. Thus, it has been found that the organs in which cancer is most apt to occur are more radioactive than others, and also that the radioactivity of the tissues increases with age. The theory that is suggested by these results is that, as x rays lead to cancer and various substances possessed of definite radioactive properties also frequently produce cancer, while, moreover, certain of the tissues at times seem to possess more than the normal amount of radioactivity, internal cancer may be really due to the constant action over long periods of very small doses of x rays given off in the depths of the tissues. The further results of these researches will be awaited with the greatest interest.

The London County Council has organized a very thorough system of inspection of school children, and this has revealed an enormous amount of ill health among them, requiring immediate treatment, and the problem as to how the vast number of children needing it are to obtain this treatment is becoming an urgent one. It is chiefly in regard to disorders of the eyes, ears, and teeth that immediate treatment is needed, and when one considers that there are something like 60,000 children in the London County Council schools requiring treatment for their eyes, while about 15,000 have ear troubles, and over 3,000 others have ringworm, it becomes evident that it will be no easy matter to provide efficient treatment for them all. It has been suggested that the hospitals should be made use of, but most of these institutions are already overcrowded, especially the out-patient departments, upon which the proposed additional burden of work would chiefly fall. Moreover, the expenses attendant on providing special apparatus and a special staff for the expert treatment of disorders of the eyes and ears of even a few of these thousands of children at any hospital would be very considerable, and in most cases could not be borne by the hospitals alone and would have to be met by a special grant from the London County Council. The leading London hospitals and dispensaries have been approached by the Council with the view of securing their cooperation, and it seems possible that some may be able to help the work of the London County Council in this respect. Thus, the authorities of the Great Ormond Street Hospital for Sick Children have already stated that they are willing to provide for the treatment of twenty-five children weekly, and it is understood that this offer has been accepted. But twenty-five out of 80,000 will scarcely relieve the pressure, and if the existing institutions find themselves unable to treat these unfortunate children in their thousands, it seems as if some system of new and specially constructed dispensaries would have to be provided.

The Darwin Centenary was celebrated at the University of Cambridge on June 22, and a large gathering of scientists from all parts of the world was present. Lord Rayleigh, chancellor of the university, held a reception which was of an imposing character. Lord Rayleigh, wearing his robes of office, scarlet and black, received the guests of the

university, all of whom were wearing academic dress or uniforms and orders. The mixture of robes and uniforms and the dresses of the ladies contributed to make a memorable scene of academic life. The members of the Darwin family that were present—Sir George Darwin, Dr. Francis Darwin, Mr. William Erasmus Darwin, and Major Leonard Darwin—were accorded an enthusiastic ovation. Addresses were delivered by Dr. O. Hertwig, of Berlin, Professor Metchnikoff, of Paris, Professor Osborn, of New York, and Sir Edwin Ray Lankester, of London. A banquet was subsequently held, and after the loyal toasts, Mr. A. J. Balfour proposed the "memory of Darwin," whom he coupled with those other Cambridge scientists, Newton, Young, Kelvin, Maxwell, and Stokes. After Professor Arrhenius had spoken to the toast, Mr. W. E. Darwin, the son of the eminent naturalist, replied and gave some personal recollections of his father. A lasting memorial has been issued by the Cambridge University Press in the form of a collection of essays entitled *Darwin and Modern Science*, among the contributors to which are the most eminent writers on biology in various countries.

Therapeutical Notes.

The Treatment of Pruritus of the Aged.—Thibierge (*Revue française de médecine et de chirurgie*, June 25, 1909) considers the treatment of senile pruritis in an article dealing with its forms, cause, and evolution, finally commenting on the treatment usually employed. The treatment is difficult and most deceptive. Chlorinated water may be applied of the strength of one or two per cent., spirit of menthol diluted with water, mentholated oil or Lassar's paste. An ointment of the following composition is useful as an application to the parts that itch painfully:

B	Tumenol,	3iiss;
	Zinc oxide,	3iiss;
	Starch,	3iiss;
	Petrolatum,	3iiss.

M.

Effects from nearly all methods of treatment are not lasting, and recourse must be had to various means, gelatine baths being recommended. The internal treatment consists essentially of restricting the patient to a milk diet. The dechloridization treatment is useful in certain cases, but it is noted that it is difficult to continue it for any length of time.

The Treatment of Chronic Bronchitis.—In the treatment of chronic bronchitis associated with excessive secretion, a German physician employs a novel inhalation method. He sprinkles two or three drops of the solution of which the formula is given below on six or eight pieces of blotting paper, which are afterwards set on fire in different parts of the sick room:

B	Menthol,	3iiss;
	Eucalyptol,	3iiss;
	Oil of turpentine,	3iiss;
	Oil of juniper,	3iiss;
	Oil of pine,	3iiss.

M.

The Treatment of Gas Poisoning.—Dana (*Boston Medical and Surgical Journal*, May, 1909; and *Journal of the American Medical Association*, July 10, 1909) uses as his main treatment the subcutaneous injection of from one to two pints of hot sterile modified Ringer's solution. The injection was always made under the breasts, and the solution used is as follows:

B	Calcium chloride,	Gm. 0.25;
	Potassium chloride,	Gm. 0.83;
	Sodium chloride,	Gm. 7.50;
	Distilled water,	Cc. 1000.00.

Other treatments which were instituted were oxygen inhalations, the hypodermic injection of 1/40 of a grain of strychnine sulphate, hot milk by the mouth and sometimes by the rectum, sometimes brandy or whiskey, sometimes 1/100 of a grain of atropine hypodermically, and sometimes the patient was surrounded with dry heat. Sometimes ammonium carbonate in five grain doses was given once in four hours. The following was a favorite mixture for internal administration:

B	Strychnine sulphate,	gr. 1/8;
	Ammonium carbonate,	gr. xxv;
	Whiskey,	3v.

M. et Sig. Two tablespoonfuls in water every four hours.

The Local Treatment of Erysipelas.—The following application is credited to Meunier in Pron's *Formulaire synthétique de médecine*:

B	Menthol,	gr. xxx;
	Pulverized camphor,	gr. viii;
	Methyl salicylate,	gr. xlv;
	Guaiacol,	gr. viiss;
	Petrolatum,	3i;
	Wool fat,	3i.

M. et Sig. Apply to the painful part two or three times daily.

The Internal Treatment of Gonorrhœa.—The following is credited to Cremer in the *Journal de médecine de Paris* for May 15, 1909:

B	Phenyl salicylate,	gr. vi;
	Hexamethylenamine,	gr. vi;
	Oil of santal,	gr. iiii.

M. et ft. capsulæ No. xxv. Sig. One or two capsules to be taken every two hours.

Mouth Wash for Chronic Gingivitis.—S. P. Mummery (*The Practitioner*) says the following forms an excellent mouth wash for chronic septic gingivitis, such as occurs in pyorrhœa alveolaris:

B	Salicylic acid,	aa gr. xvi;
	Benzoic acid,	3iiss;
	Tincture of krameria,	3i.
	Absolute alcohol,	3i.

M. et Sig. A teaspoonful to a small wineglassful of water, as a mouth wash.

A Revival of the Species.—The species in this case is not human, but vegetable, the old fashioned tea, still so popular in Germany being indicated. In *Medicinishe Blätter* for June 12, 1909, the following is recommended for use in the treatment of nephritis:

B	Peppermint leaves,	3iiss;
	Calamus root,	3iiss;
	Juniper berries,	3iiss;
	Senna leaves,	3iiss.

Cut and bruise the different ingredients and mix to form a species. Sig. Make a tea.

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MARIE'S REVISION OF THE APHASIAS.

I.

To the student of neurology as well as to the investigator of mental activities in general the problems of aphasia are exceedingly varied. There is so much that is uncertain in the mechanism of the mind that the hunt for fairly definite laws regulating even a part of its activities is fraught with the keenest interest. Such a field of research is offered in the analysis of the faculty of speech and its experimental variations as seen in the aphasias. Each case teems with the most fascinating of questions to be solved. In many patients, it is only too true, Nature offers a problem so extensive as to defy analysis. In other instances, however, the limitations of a lesion permit of such a study as, if prosecuted by the methods of recent requirements, may lead to a solution of far reaching significance.

The modern technique of the pathological anatomy of the nervous system, which requires serial sections throughout the entire cerebrospinal axis, has been applied to the study of aphasias only within comparatively recent times. Broca's guess, for it must be considered as largely a guess, perhaps inspired, of the site of the zone of language was stimulated on purely superficial examination of the brain, and the vast majority of later studies which have resulted in the confused multiplicity of aphasias are the result of the study of macroscopic sections, and were not founded on minute anatomical

examination of the fibre tracts. But Collier, in a recent excellent summary (*Brain*, February), makes a mistake in saying that up to three years ago "no worker had set up the standard of serial microscopic sections throughout the brain as the essential basis of the localization of the lesion in the case of aphasia," for Déjerine set up such a standard as early as 1891. Yet it is perfectly true that the greater number of workers have contented themselves with macroscopic sections, or have made a minimal series of sections in order to substantiate their opinions. It is for this reason that Marie's article (*Semaine médicale*, May 23, 1906), on which we commented in our issues for October 6 and November 24, 1906, has not yet been followed by much that is not confused.

The iconoclast who insists on the letter of the law in anatomical technique rules out all the work of the ancients and most of that of the moderns. He even excludes much of the work of Marie himself (Moutier, *L'Aphasie de Broca*, 1908). For him the questions are only approaching their methodical statement, and are far from receiving an answer. To the less rigorous critic, one who hopes to gain a grain of truth from even the most meagre opportunity, the results of the upturning are not so sterile in results. The former sees in Marie a busybody and a needless meddler who has done little to further the progress of the research and much to hinder it. To the latter, however, Marie appears in the light of a reformer who, destroying much that is artificial, seeks to gain a new foundation for the truth.

As outlined in the earlier articles and as completely developed in the imposing volumes of Moutier, the general features of Marie's teachings stand revealed. Marie denies the belief that word memory centres exist, be they visual, auditory, or kinæsthetic. He denies that the third frontal gyrus—Broca's convolution, in part—has any functions connected with the speech mechanism. The distinction between motor and sensory aphasia, he says, is purely artificial and has no right to existence. The speech centres are situated in the left temporoparietal lobe—Wernicke's speech centre—which is a general region of intelligence, specialized for language, not a centre for sensory images. Thus the classical motor aphasia of Broca is nothing but a general (sensory) aphasia, i. e., a language intelligence defect plus a disturbance of speech (anarthria). The former is due to the implication of the Wernicke zone, the latter to an extension of the lesion involving a new hypothetical quadrilateral area around and in the lenticular nucleus. The limits of the new quadrilateral area, which are very extensive and thus far badly defined, according to tract anat-

omy, are anteriorly and posteriorly the vertical planes level with the anterior and posterior limiting sulci of the insula; bounded externally by the surface of the insula and internally by the wall of the lateral ventricle. Above, it reaches into the convexity; below, it passes into the hypothalamic region. It is a cardinal defect of this quadrilateral area that in terms of three dimension anatomy it lacks precision and is a gross, ill defined, and purely macroscopically outlined portion of the brain.

THE ORIGIN OF CERTAIN CASES OF POSTOPERATIVE TETANUS.

Entrance of the tetanus bacillus into the human body is generally regarded as being brought about through the agency of a contaminated object which makes a wound or carries the organism into a pre-existing lesion. Journal and textbook articles, it is true, mention the ingestion of fresh vegetables as a mode of entry of the bacillus into the body, infection occurring if a favorable abrasion is presented. This source of infection, however, is not considered seriously by the majority of surgeons, being regarded as a remote possibility rather than a positive danger against which active measures are required to safeguard patients undergoing certain operations. At the recent Philadelphia meeting of the American Surgical Association the intestinal origin of the disease was discussed by Dr. Rudolph Matas, of New Orleans, in a suggestive paper entitled *The Fæcal Origin of Some Forms of Postoperative Tetanus* (Anal, Rectal, Puerperal, Genital, and Lower Pelvic Operations), and its Prophylaxis by Proper Dietetic Measures.

Dr. Matas first stated a number of well known facts regarding the tetanus bacillus and then applied them to the explanation of cases of the disease. These facts, summarized, show that postoperative tetanus occurs chiefly in sites in which contamination with fæces is most frequent. Dr. Matas explains this as due to the presence in the intestinal contents of tetanus bacilli taken in food, that is, in the soil and other material adhering to uncooked eatables. It has been shown that five per cent. of ordinary normal men carry tetanus bacilli in their fæces, and in the case of hostlers and the like this is increased to twenty per cent. This must be borne in mind when considering an operation like those mentioned. Dr. Matas has had two cases of tetanus in his own practice, and one of the patients was known to have eaten freely of fresh vegetables before the operation. The natural resistance of the body must account for the small number of cases occurring, but if only one patient in ten thousand

becomes infected, prophylactic measures are demanded in all. To this end, Dr. Matas now requires as a preliminary to all operations of the type under discussion a thorough purgation three days before and the absolute avoidance of all uncooked food during those three days. In the occasional case in which these precautions cannot be carried out, a protective dose of ten cubic centimetres of tetanus antitoxine is given at the time of the operation.

Dr. Matas's communication (see page 138) served to bring out some decidedly conflicting opinions. Some of the members said they had never seen a case of tetanus of such origin and did not expect its occurrence, while others mentioned cases following operations for hæmorrhoids, etc. These varied experiences may be largely explained by the fact, also brought out in the discussion, that in certain sections of the country the tetanus bacillus, and hence the disease, is practically unknown, while in others the organism is constantly present in the soil. The discussion in general, however, was well summarized by one speaker who said it had emphasized the point made in the paper, namely, that tetanus did originate in operative wounds contaminated by fæces. The sentiment of the meeting was that more attention should be paid to this subject in the future. Deaths from tetanus following an operation are so peculiarly deplorable that Dr. Matas is to be heartily commended for bringing to the attention of the profession simple prophylactic measures which will aid in still further reducing the number of cases.

THE "MOVEMENT OF RESTITUTION."

What is traditionally termed in obstetrics the "movement of restitution"—that is, such a rotation of the child's head after its expulsion that it resumes more or less completely that position of obliquity in which it entered the brim of the pelvis—is, to the best of our knowledge, commonly accepted as nothing more than an index of the internal rotation of the shoulders. According to M. Berthaut, however (*Annales de gynécologie et d'obstétrique*, June), M. Chailly-Honoré has insisted on limiting the term *mouvement de restitution* to such an untwisting (*détorsion*) of the neck as may be required to bring the head back to its natural relation to the trunk, and has maintained that the movement is not due to uterine contraction. That rotation of the head which indicates a corresponding internal rotation of the shoulders, he contends, should be called the "external movement of rotation."

We hope that M. Chailly-Honoré's proposed change will not come into general use. Such a movement as that which he insists on dignifying

with the term movement of restitution is what almost any inanimate object, provided it was pliable, might undergo as a mere expression of resiliency. A piece of lead would not do it, but a wet rag might, and a dry and twisted rag most certainly would. Let us maintain the endowment of the homunculus with some quality more lively than that of soft rubber. It is our conviction that one should not lightly brush aside the parlance of our ancestors.

STRAW BED ITCH.

It appears that among the discomforts connected with the use of the straw bed there is to be reckoned an "urticarioid dermatitis" described in the *Philadelphia Medical Journal* for July 6, 1901, by Dr. Jay F. Schamberg, professor of dermatology and infectious eruptive diseases in the Philadelphia Polyclinic. Dr. Schamberg and Passed Assistant Surgeon Joseph Goldberger, of the United States Public Health and Marine Hospital Service, seem to have demonstrated recently (*Public Health Reports*, July 9th) that the disease is due to a mite which infests the straw of which certain mattresses are made. This creature, which is described as barely visible to the naked eye, is said by Mr. Nathan Banks, of the United States Bureau of Entomology, to be closely allied to the *Pediculoides ventricosus*, if not identical with that insect.

The disease is generally characterized by an eruption of wheals, more or less profuse, usually extending over the neck, chest, abdomen, and back, and in a lesser degree over the arms and thighs, but commonly sparing the hands and feet, and accompanied in well pronounced cases by most intolerable itching. Nearly every wheal is surmounted by a little central vesicle, usually not larger than the head of a pin, the contents of which speedily become turbid and subsequently purulent. The wheals vary in size from that of a lentil to that of a finger nail, and are rounded, oval, or irregular in shape. They are of "a warm rose color" and only rarely show the pinkish white anæmic area of the lesions of ordinary "hives." Instead of frank wheals, the primary efflorescences may be erythematourticarial spots or papulourticarial lesions. In some cases a modification of the eruption causes it to assume the features of erythema multiforme. The authors make three varieties of the eruption—urticaria vesiculopustulosa, erythema multiforme, and a form resembling varicella, with a large central vesicle or pustule.

If the eruption is profuse, there may be an elevation of temperature to from 99° to 102° F. There may at times be malaise and loss of appetite, but as a rule the patients do not complain of feeling

ill, and they rarely choose to remain in bed. Sometimes there is moderate enlargement of certain subcutaneous lymphatic glands, and in three instances transient albuminuria was observed. The affection has to be distinguished from ordinary urticaria, from varicella, and from scabies, and many errors of diagnosis have been made, in one instance the patient even being suspected of having smallpox. The authors' observations were made in about 123 cases, occurring mostly in Philadelphia and its vicinity. In practically every case they were able to ascertain that the patient had either recently slept on a new straw mattress or had freely handled one. The mattresses had been made by four prominent manufacturers, all of whom received a large proportion of their straw, if not quite all of it, from a single source in New Jersey. It would be interesting to know if the operatives in the mattress factories were affected with the disease.

Sulphur fumes, steam, and formaldehyde are recommended for killing the mites, and to relieve the itching and shorten the course of the disease the authors have found it efficacious to employ an ointment consisting of thirty grains of beta naphthol, a drachm of precipitated sulphur, and an ounce of benzoinated lard. Ordinarily, they say, the itching will subside in from twelve to thirty-six hours, and the eruption will disappear in a week or ten days. When, however, the cause is not recognized and the patient goes on using the mattress, he may suffer severely for a period of from three to seven weeks; then gradual recovery takes place. The authors hope to publish a fuller report of their investigation.

THE LATE PROFESSOR CUNNINGHAM, OF EDINBURGH.

We are indebted to an Edinburgh friend for a copy of the *Scotsman*, dated June 24th, containing a condensed narrative of the distinguished career of the late Dr. Daniel John Cunningham—"Dan Cunningham," as his immediate friends fondly called him—involving a summary of his services to science and to society. Although barely past sixty years of age, Professor Cunningham succumbed to an illness of several months' duration, to throw off which he had vainly traveled to Egypt.

At the time of his death Dr. Cunningham was the professor of anatomy in the University of Edinburgh, his alma mater. He had served in a similar capacity in the Royal College of Surgeons of Dublin and in Trinity College, Dublin. To all these institutions his services had been very great, and his advice in administrative affairs connected with the military and other medical organizations of the British government was frequently sought for and always highly prized. In both human and compar-

ative anatomy, and in anthropology as well, he was recognized the world over as a conspicuous authority. His personal character was so gentle and so lovable that on the occasion of his appointment to the Edinburgh chair of anatomy the *Student* said of him: "In every relation of life Professor Cunningham has been distinguished by fearless honesty and gentle courtesy; he is a staunch friend and a wise counsellor; he has always a word of encouragement for honest workers, and if he feels it his duty to be stern toward shirking slackers, he usually wears the velvet glove."

News Items.

The New Jersey State Board of Medical Examiners held its annual meeting in Newark on Tuesday, July 6th, and elected the following officers to serve for the ensuing year: President, Dr. Charles A. Groves, of East Orange; treasurer, Dr. A. Uebelacker, of Morristown; secretary, Dr. E. L. B. Godfrey, of Camden.

Deanship of the Medical Department of Carroll College.—The appointment of Dr. Thomas C. Phillips to the deanship of the medical department of Carroll College by President Wilbur O. Carrier, on June 19th, was confirmed by the board of trustees on July 7th. Dr. Percy B. Wright will remain dean of the dental faculty.

A Revised Form of Birth Certificate has just been issued by the New York State Department of Health, which conforms to the recommendations of the United States Census Bureau. Questions relating to the use of prophylaxis against blindness of the new born are printed on this revised form, which will hereafter be used for reporting all births.

Improvements at the Almshouse in Westchester County, N. Y.—Plans have been submitted for improvements at the county almshouse at Eastview, N. Y., to cost approximately \$60,000. It is proposed to enlarge the hospital at a cost of \$30,000; to erect a new dormitory at a cost of \$32,000; and to erect another new building to be used as a nursery at a cost of \$5,000.

A Clinic for Mental Defectives at the Long Island College Hospital has been established in the out patient department (Polhemus Memorial Clinic). Here advice will be given as to the care and treatment of those who are mentally deficient. These clinics are held every Tuesday afternoon, at 2 o'clock, and are under the supervision of Dr. Siegfried Block, 848 Greene avenue, Brooklyn.

Suicides Increasing in New York.—The reports of the State Department of Health show that the number of deaths from suicide are increasing in New York. In 1907 there were 1,207 suicides, an average of 100 a month; in 1908 there were 1,409, an average of 117 a month; and during the first five months of 1909 the records show a monthly average of 124. At this rate the record for this year will be about 1,550.

Kentucky State Board of Health to Apply Tuberculin Test to Cattle.—At a recent meeting of the State Board of Health a proclamation was issued against tuberculous cattle, and steps were taken to give authority to county boards to apply the tuberculin test to cattle, and to kill all that proved to be tuberculous. The action of the board was based upon recent examinations made by Dr. Cyrus W. Field, of Louisville, showing that many cattle in the State were infected with tuberculosis.

A Relief Station on the Upper West Side of Manhattan.—Announcement is made that the property at Nos. 364 and 366 West Fifth Street have been taken over by the city and will be remodelled into a relief station for ambulance service in that district, under the control of Bellevue and Allied Hospitals. An appropriation of \$32,300 was made by the Board of Estimate and Apportionment for this purpose. The station will be supplied with two automobile ambulances, with a staff of physicians, and there will be six or eight beds. Patients will be taken to Flower Hospital whenever such transfer is deemed expedient.

The International Congress on Alcoholism will open in London, at the Imperial Institute, on July 19th. The Duke of Connaught will preside. Among those who will represent the United States at this congress are Dr. T. D. Crothers, of Hartford, Conn., and Surgeon F. L. Pleaswell, United States Navy.

Three New Tuberculosis Sanatoria for Connecticut.—Provision has been made by the State Legislature of Connecticut for the erection and maintenance of three new hospitals for the care and treatment of tuberculosis patients. These institutions, which are to be situated in Hartford, New Haven, and Fairfield, will accommodate three hundred patients, and will cost about \$175,000.

The Medical Society of the County of Ontario, N. Y., held its quarterly meeting on Tuesday, July 13th, in Geneva, N. Y. The programme included the following papers: The Diagnostic Value of Pain in Surgery, by Dr. John Parmenter, of Buffalo; The Prognosis of Pneumonia, by Dr. De Lancey Rochester, of Buffalo; The Vein Sign in Abdominal Diagnosis, by Dr. W. W. Skinner, of Geneva.

The Richmond, Va., Academy of Medicine and Surgery held a regular meeting on Tuesday, July 13th. Dr. Edward McGuire read a paper entitled The Vasomotor Disturbances of the Menopause, which was discussed by Dr. John N. Uphur. Acute Diarrheal Diseases in Infants was the subject of a paper read by Dr. J. Burton Nowlin and discussed by Dr. C. A. Blanton and Dr. McGuire Newton. Dr. C. M. Miller read a paper entitled Tertiary Syphilis of the Nose and Throat.

Fourth of July Casualties.—According to the statistics collected by the newspapers of Chicago, 61 deaths and 3,246 persons wounded are the net results of the celebration of July 4, 1909. We doubt the tetanus figures given, 320 deaths up to the night of July 6th, as the incubation period of tetanus is about ten days. It is not likely that enough persons were using fireworks on June 24th to produce 320 fatal cases of tetanus by July 6th. Philadelphia's contributions to the accidents were 4 killed, 766 injured, and 80 fires.

Commencement of the Medical Department of the University of Louisville.—The largest class ever graduated from a Kentucky medical school received their diplomas at the first commencement exercises of the medical department of the University of Louisville since the consolidation of the medical schools of Louisville. The Hon. David W. Fairleigh conferred the degree of M.D. upon one hundred and eighty-two graduates, who were presented by Dr. J. M. Bodine, president of the faculty. The honors were awarded by Dr. Joseph B. Marvin.

Osteopaths Must Pass State Examinations.—According to an opinion just rendered by Deputy Attorney General Cunningham, this year's graduates from the Philadelphia College of Osteopathy must take the State examinations before they will be entitled to practise in Pennsylvania. The question was brought up by Dr. O. J. Snyder, president of the Board of Osteopathic Examiners, and Mr. Cunningham decided that as the graduates were not engaged in the practice of osteopathy in Pennsylvania at the time of the approval of the act, the board had no authority to license them without examination.

Changes in the Medical Staff of the University of Maryland.—Several changes have been made in the faculty of the medical department of the University of Maryland, to go into effect with the beginning of the next college year. The chair in medicine, made vacant by the resignation of Dr. Samuel C. Chew, has been given to Dr. Charles W. Mitchell, who will also lecture on diseases of children. Dr. Arthur M. Shipley succeeds Dr. Mitchell as head of the department of therapeutics, and will also lecture on surgery. Dr. Harry Adler has been appointed clinical professor of medicine, and Dr. Irving J. Spear, clinical professor of neurology and psychiatry.

A New Department at the Harvard Medical School.—Announcement is made that a department of public health and preventive medicine has been established at Harvard, with Dr. Milton J. Rosenau, of Washington, D. C., for eleven years director of the hygienic laboratory of the U. S. Public Health and Marine Hospital Service, at the head. With the opening of the next college year, Dr. Rosenau will begin his duties, and his official title will be Professor of Hygiene and Preventive Medicine. Dr. Rosenau will have fifteen rooms at the college for the work of his department, and his staff will consist of one instructor, one assistant, one teaching fellow, one technician, and one laboratory servant.

Ex-Governor Odell's Gift to Newburgh, N. Y.—Announcement is made that ex-Governor Benjamin B. Odell, Jr., has presented to the tuberculosis committee of Newburgh a hospital and camp for the treatment of patients suffering from tuberculosis. He has transferred to the committee a plot of four acres on high ground, near the city. The dwelling on the property will be used as an administrative building, and Mr. Odell will erect a modern infirmary which will accommodate twenty-five patients. He will add to the hospital as demands on it require. The property will be transferred to a board of control, and an advisory committee of women will assist in the management. It is expected that the hospital will be ready by the middle of August. The hospital is the outcome of the war on tuberculosis waged by the State Charities Aid Association. Mr. Odell became much interested in the movement and volunteered to build the hospital, which will cost about \$25,000.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 10, 1909:

	—July 1—		—July 1—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	459	103	492	142
Diphtheria	222	34	211	27
Measles	883	31	728	31
Scarlet fever	248	10	108	14
Smallpox	—	—	—	—
Varicella	89	—	30	—
Typhoid fever	40	8	34	12
Whooping cough	54	8	40	8
Cerebrospinal meningitis	0	—	8	7
Total	1,921	251	1,051	241

Personal.—Dr. D. C. Peyton, of Jeffersonville, Ind., has been appointed superintendent of the Indiana Reformatory.

Dr. William B. Osler celebrated his sixtieth birthday on July 12th.

Dr. De Witte Casler, who has been resident gynecologist at the Johns Hopkins Hospital for the past two years, has resigned his position.

Dr. H. J. Kepman, of Charleroi, Pa., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. John Musser, of Philadelphia, accompanied by his two daughters, sailed for Europe on Wednesday, July 14th, to attend the International Medical Congress, which opens in Budapest on August 20th. Dr. Musser is chairman of the American Committee of the congress.

Dr. Owen Copp, of Brookline, has been made superintendent of the State insane asylum, at West Roxbury, Mass., to succeed Dr. William Noyes.

The New Phipps Hospital.—Announcement is made that plans have been completed for the Phipps Psychiatric Hospital at the Johns Hopkins University, Baltimore, for which Mr. Henry Phipps gave \$500,000 last summer. Dr. Adolph Meyer, of New York, who was appointed to the directorship of this clinic, went abroad with Mr. Grosvenor Atterbury, the New York architect, last fall, spending two months studying the architecture and management of such institutions in Vienna, Munich, and other continental cities, and the plans which have been submitted are based on these studies. The new hospital will not be a reproduction of any one clinic, but is designed to include the most desirable features of all. The exterior of the building will be made to harmonize as much as possible with the other buildings of the Johns Hopkins Hospital, as it will in reality constitute a ward of the general hospital. The interior, however, is to be made as unlike the other wards of the hospital as is compatible with the requirements of the service. Tile, marble, and mosaic will not be used except where absolutely necessary for hygienic reasons, as it is desired to impart a homelike feeling and aspect to the place. Even the necessary safeguards will be arranged in such a way as not to be noticeable. The three general functions of the building comprise research, educational and clinical departments, and an out patient department. It is said that this clinic for the treatment on the most advanced scientific lines of those afflicted with insanity and mental disorders of varying types and degrees, will be practically in a class by itself in this country.

The Health of Pittsburgh.—During the week ending July 3, 1909, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 3 cases, 0 deaths; typhoid fever, 7 cases, 2 deaths; scarlet fever, 12 cases, 0 deaths; diphtheria, 6 cases, 0 deaths; measles, 14 cases, 0 deaths; whooping cough, 23 cases, 1 death; pulmonary tuberculosis, 37 cases, 10 deaths. The total deaths for the week numbered 153, in an estimated population of 372,000, corresponding to an annual death rate of 13.90 in a thousand population. The monthly report for March shows 700 deaths, or a death rate of 14.68 in a thousand population.

Changes in the Faculty of the Albany Medical College.—The following changes have been made in the medical faculty of the Albany Medical College, to go into effect when the winter session of the college begins on Tuesday, September 21st: Dr. Thomas Ordway, as pathologist and bacteriologist of the Bender Laboratory, to succeed Dr. Wolbach; Dr. Victor Caryl Meyers, as physiological chemist and director of laboratory, to succeed Dr. Holmes Coudert Jackson; Dr. James Wesley Wiltse, as lecturer on dermatology and genitourinary diseases; Dr. J. Jerome Meyers, as instructor in gastroenteric diseases, and the following clinical assistants: Dr. Joseph Lewi Bendell, Dr. Tiffany Lawyer, Dr. Charles James Kelley, Dr. Harry Houghton Drake, Dr. Harley Heath, Dr. Ellis Kellert, Dr. Edward Daniel Donahue, Dr. Arthur Emerson Pills, Dr. Edward Johnson Abbott, Dr. Frederick William McSorley, Dr. Burlin George McKillip, Dr. Edward Raymond Messer, and Dr. Eddy Stearns Haswell.

The State Medical Society of Wisconsin held its sixty-third annual meeting in Madison on June 29th to July 2d. An excellent programme of papers was presented, and the entertainments which had been arranged for the visitors were specially enjoyable. The address in medicine was delivered by Dr. D. L. Edsall, of Philadelphia, whose subject was Some of the Bearings of Occupational Conditions upon Medicine. Dr. George W. Crile, of Cleveland, delivered an address on the Surgical Treatment of Handicapped Patients. The following officers were elected to serve for the ensuing year: President, Dr. Edward Evans, of La Crosse; first vice-president, Dr. J. S. Walbridge, of Berlin; second vice-president, Dr. O. V. Mears, of Beaver Dam; third vice-president, Dr. T. E. Loupe, of Eureka; secretary, Dr. C. S. Sheldon, of Madison, reelected; treasurer, Dr. S. S. Hall, of Ripon, reelected. Dr. Warren B. Hill, of Milwaukee, Dr. T. H. Hay, of Stevens Point, and Dr. C. R. Bardeen, of Madison, were appointed a committee to present to the Governor of Wisconsin the names of ten physicians from which to select a member of the State Board of Health. Next year's meeting will be held in Milwaukee.

Charitable Bequests.—By the will of Mrs. Mary V. Wilson, the Maysville, Ky., Hospital, will receive \$1,000.

Mrs. Mary Burwell who died recently in Boone, Iowa, bequeathed \$3,000 to the Eleanor Moore Hospital, to be used to endow a room to be known as the Mary Burwell Room.

The will of Mrs. Elizabeth M. Husted, who died in Albany, N. Y., a short time ago, includes the following bequests: \$2,000 to the Albany Homoeopathic Hospital; \$1,000 to the Home for Aged Men, and \$1,000 to the Albany Guardian Society.

By the will of Mrs. Marion H. Crawford, Seton Hospital for Consumptives, New York, will receive \$5,000, and the Society for the Relief of the Destitute Blind will receive \$5,000. To her family physician, Dr. Thomas H. Allen, she bequeathed \$50,000 and her country estate in Sheffield, Mass.

By the will of Israel L. Praeger, who died in New York on June 28th, the following institutions become residuary legatees: The Home for Aged and Infirm Hebrews, the Hebrew Benevolent and Orphan Asylum, Mount Sinai Hospital, the Montefiore Home for Chronic Invalids, the German Hospital, the United Hebrew Charities, and the Lebanon Hospital.

By the will of Simon Fox, who died in New York on June 12th, the Beth Israel Hospital Home for Aged and Infirm Hebrews and the Hebrew Benevolent Home and Orphan Asylum will each receive \$500.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

July 1, 1900.

1. Dental Hygiene: Its Real Significance.
By WILLIAM R. WOODBURY.
2. Resuscitation after Relative Death. A Physiological and Clinical Review with Reports of Four Unsuccessful Attempts.
By CARLETON R. METCALF.
3. A Brief Sketch of Semmelweis and His Work on Puerperal Sepsis.
By ERNEST BOYEN YOUNG.
4. Principles of Therapeutics by Sense Culture.
By PAUL W. GOLDSBURY.
5. The Guaiac Test for Blood.
By ROSCOE W. KING.
6. Schistosomiasis (Japonicum) with Special Reference to Observations in Hunan Province, China.
By O. T. LOGAN.
7. Some Analogies between Malaria and Syphilis.
By WILLIAM H. DEADERICK.

2. **Resuscitation after Relative Death.**—Metcalfe reports four such unsuccessful cases, three surgical and one medical. They are of interest because they bring forward the problem of resuscitation after sudden death. Experimentally in animals, and practically in man, this problem has for many years attracted interest. Arrest of the heart signifies relative death. Resuscitation after sudden death is often out of the question. An organic lesion which is in itself fatal precludes the possibility of restoring life. But in sudden death from chloroform or ether, from asphyxia, from drowning, or from electrocution, a thorough effort at resuscitation may result in a successful issue. In crises of this sort most men rely chiefly on hypodermic injections and on artificial respiration. If the patient's heart is still beating well, such measures often suffice. If the heart beat has ceased, such measures are useless. Artificial respiration has no effect on a pulseless heart, nor have drugs. In this class of cases the adoption of some more radical method of treatment should be seriously considered. The more radical methods comprise massage of the heart, intraarterial or intravenous injection of salt solution or of a salt solution and adrenalin, artificial increase of the blood pressure, and, possibly, electrical stimulation of the heart. The author describes Crile's technique in the crisis of relative death which differs materially from simple direct massage of the heart. He presses rhythmically on the chest wall over the heart and raises the blood pressure by the use of the familiar rubber suit, or, better, by adrenalin infusions. "A canula is inserted toward the heart into an artery. Normal saline, Ringer's or Locke's solution, or, in their absence, sterile water, or, in extremity, even tap water, is infused by means of a funnel and rubber tubing. But as soon as the flow has begun the rubber tubing near the canula is pierced with the needle of a hypodermic syringe loaded with 1:1,000 adrenalin chloride, and 15 to 30 minims is at once injected. Repeat the injection in a minute if needed. Synchronously with the injection of the adrenalin the rhythmic pressure on the thorax is brought to a maximum. The resulting artificial circulation distributes the adrenalin that spreads its stimulating contact with the arteries, bringing a wave of powerful contractions and producing a rising arterial, hence coronary, pressure. When the coronary pressure rises to 40 mm. or more, the heart is likely to

The Mortality of Chicago.—During the first six months of this year 16,025 deaths from all causes were reported to the Department of Health, an increase of 134 over the number reported from the first six months of 1908. The average death rate for the half year was 14.53 in a thousand population, as against a death rate of 14.71 for the corresponding period last year. The total infant mortality was 4,480; 3,058 under one year of age and 1,422 between one and five years of age. The number of deaths from important causes was as follows: Diphtheria, 361; scarlet fever, 199; measles, 117; whooping cough, 55; influenza, 128; typhoid fever, 140; diarrhoeal diseases, 1,032, of which 866 were under two years of age; pneumonia, 3,031; pulmonary tuberculosis, 1,776; other forms of tuberculosis, 268; cancer, 738; nervous diseases, 481; heart diseases, 1,523; apoplexy, 321; bronchitis, 101; Bright's disease, 1,171; violence, all forms, 1,178—suicides, 254; accidents, 808; sunstroke, 4; manslaughter, 112. There were 21,287 cases of contagious diseases reported during the six months, with 6,273 deaths.

Vital Statistics of New York.—During the week ending July 3, 1900, the total number of deaths from all causes reported to the Department of Health of the City of New York was 1,383, as compared with 1,322 during the corresponding period in 1908. The death rate for the week was 15.81 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.53; the Bronx, 18.29; Brooklyn, 16.00; Queens, 14.06; and Richmond, 14.72. The total infant mortality was 449; 296 under one year, 85 between one and two years of age; and 68 between two and five years of age. There were 122 still births. The principal causes of death were: Contagious diseases, 73 deaths; malarial diseases, 1 death; whooping cough, 8 deaths; pulmonary tuberculosis, 163 deaths; cerebrospinal meningitis, 7 deaths; bronchitis, 9 deaths; diarrhoeal diseases, 127 deaths; diarrhoeal diseases under five years of age, 120 deaths; pneumonia, 53 deaths; bronchopneumonia, 67 deaths; organic heart diseases, 103 deaths; cancer, 58 deaths; Bright's disease, 103 deaths; sunstroke, 67 deaths; accidents, 81 deaths; homicide, 5 deaths; suicide, 17 deaths.

Generous Gifts to Rochester Institutions.—Carrying out the wishes of her husband, Mr. Henry Bausch, of the Bausch & Lomb Optical Company, Rochester, N. Y., who died suddenly last March, Mrs. Henrietta Bausch has made gifts aggregating \$20,000 to various charitable and other institutions in Rochester. Her gifts are as follows: City Hospital, \$2,500; Hahnemann Hospital, \$509.90; St. Mary's Hospital, \$1,110.17; Homeopathic Hospital, \$879.93; Infants' Sunnier Hospital, \$2,500; Rochester Orphan Asylum, \$2,000; St. Patrick's Orphan Girls' Asylum, \$735.00; St. Mary's Boys' Orphan Asylum, \$1,046.32; Church Home Orphan Asylum, \$264.93; St. Joseph's Orphan Asylum, \$761.58; Jewish Orphan Asylum, \$192.08; German Home for the Aged, \$2,500; Home for the Friendless, \$250; St. Ann's Home for the Aged, \$500; Boys' Evening Home, \$500; Athenæum and Mechanics' Institute, \$2,500; Door of Hope Association, \$250; Society for the Organization of Charity, \$250; Female Charitable Society, \$500; Society for the Prevention of Cruelty to Animals, \$100; Public Health Association, \$500; Dental Society, \$250. These gifts are not limited in any way.

The Health of Philadelphia.—During the week ending June 26, 1900, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 17 cases, 4 deaths; scarlet fever, 61 cases, 2 deaths; chickenpox, 29 cases, 0 deaths; diphtheria, 84 cases, 9 deaths; tetanus, 1 case, 0 deaths; measles, 126 cases, 8 deaths; whooping cough, 32 cases, 5 deaths; tuberculosis of the lungs, 95 cases, 52 deaths; pneumonia, 17 cases, 19 deaths; erysipelas, 12 cases, 1 death; mumps, 13 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 5 deaths; diarrhoea and enteritis, under two years of age, 33 deaths; puerperal fever, 3 deaths. The total deaths numbered 438 in an estimated population of 1,565,560, corresponding to an annual death rate of 14.54 in a thousand population. The total infant mortality was 100; 82 under one year of age, 18 between one and two years of age. There were 51 still births; 22 males and 29 females. The total precipitation was 0.04 inch. The temperatures were high. The official maximum was 84° on the 20th; 92° on the 21st; 91° on the 22d; 91° on the 23d; 92° on the 24th; 94° on the 25th, and 92° on the 26th. The humidity varied from 52 on the 21st and 21st to 51 on the 21st.

spring into action. . . . Just as soon as the heart beat is established the canula should be withdrawn, first, because it is no longer needed, and, second, because the rising blood pressure will drive a torrent of blood into the tube and funnel." It is reasonable to suppose that adrenalin, thus used, tends to prevent the onset of fibrillary tremor.

4. Principles of Therapeutics by Sense Culture.—Goldsbury observes that rest and stimulation are the principle lines of therapeutic procedure and have been employed for general and local disorders by various measures. Muscular activities have been used in promotion of both these lines. Nervous activities, including those of the special senses, have not been as systematically studied, though instances of their empirical introduction as healing measures are common. Recreation by means of the special senses should be employed as contributing to local and general health. The employment of these agencies may be made more systematic and scientific.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
July 10, 1909.

1. Preventable Deafness, By W. SOHIER BRYANT.
2. The Visual Fields in Hysteria. A Clinical Study of Fifty Cases, By WALTER R. PARKER.
3. Pituitary Tumor in Its Surgical Relations, By ARCHIBALD CHURCH.
4. Food Intoxications in Childhood, By JOHN RUHRÄH.
5. The Treatment of Anæmia in Infancy with Iron Citrate Administered Subcutaneously, By JOHN LOVETT MORSE.
6. Amethyst Tinted Lenses. A Preliminary Communication, By L. WEBSTER FOX.
7. Reflex Aural Neuroses Caused by Eye Strain. With Report of Cases, By SAMUEL THE'BALD.

1. Preventable Deafness.—Bryant, in his address as chairman of the section in laryngology and otology read before the American Medical Association, remarks that practically all deafness is due to the results of infection. Causes leading to infection are to be corrected, the soil is to be rendered nonretentive, and the existing ear defects are to be treated at once. Avoidance of the infectious organisms, the maintenance of the nasopharynx in a healthy condition, the eradication of any existing infection, and the avoidance of impairment of the sympathetic nervous system through toxic action of fatigue or infection, will insure against deafness. To insure immunity from deafness it is necessary for the individual to undergo a periodical otorhinopharyngeal examination, perhaps once a year, so that any incipient middle ear disturbance may be detected and corrected before the condition has become established.

2. The Visual Fields in Hysteria.—Parker has tabulated fifty cases of hysteria in which he demonstrates that dyschromatopsia is more common than concentrically contracted fields in the ratio of seventy-two to forty. There is no relation between the contraction of the visual fields and amblyopia, the former being present in ninety-six per cent. of the cases, while the latter was found in eight per cent. There is no constant relation between the areas of anesthesia and concentrically contracted fields. Of the patients with anesthesia 28.4 per cent. showed concentrically contracted fields, while seventy-five

per cent. showed dyschromatopsia. He comes, therefore, to the conclusion that the most common ocular stigma in hysteria is not a concentrically contracted field of vision.

3. Pituitary Tumor.—Church cites Jacob Lewin's summary of the physiology of the pituitary gland: "For some (Roth, Wiedersheim, Corning, Strumpell) the hypophysis is merely a rudimentary organ which has no essential function. According to other authors (Schiff, Marinesco, Wolf, Gemelli) the function of the gland is essential to life. Regarding the character of the gland's function there is also divergent opinion. Wolf, for instance, believes that it is hæmolytic, while Ligeois insists that it is hæmatopoietic in action, and Oliver again insists that it regulates the blood pressure. The majority hold that the hypophysis is a ductless gland that has an influence over the nervous system, or has something to do with the red blood corpuscles, or finally that it neutralizes some substance harmful to the organism." Paulesco, from experiments on dogs, also reaches the conclusion that the pituitary gland is essential to life, and his position is supported by Cushing. A. Frölich first insisted on the relation of the hypophysis to general adiposity and genital atrophy, although P. Schuster had already published a list of such cases as being of a cerebral character. Erdheim, on apparently inadequate grounds, thought that the infundibulum was more precisely related to these physical changes. Pituitary changes in the adipositis dolorosa of Dercum are also found. Recently O. Marburg reports several observations tending to show a relation between general adiposity and the pineal gland. He would, however, group the cases of adiposity and genital atrophy associated with hypophysis affections into three classes: (1) Simple adiposity; (2) adiposity with genital atrophy; (3) simple genital atrophy. To these, Church adds another, general retardation of physical and especially of sexual development (Fuchs, Frölich, Stewart), as well as the clinical type of acromegaly. From every point of view the association of the hypophysis and the genitalia becomes evident and diagnostically significant. Marburg further suggests that excess of function of the pituitary results in acromegaly; retarded function produces general adiposity and genital dystrophy, while complete pituitary defect produces a severe cachexia, analogous to the cachexia of complete thyroid destruction or ablation. Marie, however, considered acromegaly as the result of reduced hypophysis function, while Massalongo, Benda, and Starck feel that it is caused by increased action. On the other hand, Gauthier, Strumpell, and Arnold insist that the acromegaly is the result of a metabolic disorder first showing itself in hypophyseal change. The contention of Benda appears to be most in accord with all the facts. While the choice of operation is preeminently a surgical question, Church's view is that the nasal route is the best. The pituitary tumor is practically extracranial, being located in its very definite bony receptacle below the level of the cranial floor until by abnormal growth it rises into the cranium. As shown by several of his radiograms the tumor actually descends into the sphenoidal sinus. As it lies so close to the

nasal spaces, this route can under proper aseptic measures constitute a less disturbing avenue of approach than through the lateral aspect of the skull which necessitates such violent handling of the brain as seriously to imperil the life of the patient. To operate in two stages by opening the head on the opposite side from which the approach is to be made, as formerly suggested by Cushing, does not seem to Church to constitute a material advantage. When the tumor is of comparatively small size, he does not believe it can be reached by the intracranial route. It is, however, a fact that the nasal operation results in considerable facial deformity, a deep depression being occasioned at the root of the nose, but in a life saving measure cosmetic considerations are of minor importance. Improved technique may also largely obviate this objection. Church reports six cases in which he has performed an operation.

4. **Overfeeding of Children.**—Ruhrah observes that taking of too much food of all kinds usually causes such attacks as are described by the laity as biliousness. The attacks recur with greater or less frequency, and are characterized by fever, a coated tongue, foul breath, headache, malaise, often drowsiness; there is often vomiting or diarrhoea or both, and the liver may be somewhat enlarged and tender. A brisk purge and limitation of the diet usually are all that is needed. Too much protein causes, as a rule, much the same symptoms. Sometimes some one symptom is especially prominent, as recurring headache, or recurring neuralgia, or attacks of vomiting, or in milder cases periods when the tongue is furred and breath foul without much other disturbance. Too much fat is a frequent cause of trouble, and many children are often intentionally overfed with fat. These are cases of malnutrition in which large quantities of butter, cream, codliver oil, and other fats are given with the idea of fattening the child and restoring its normal condition. The result is that the nutrition is not improved, but is usually made worse. The child is unwell, has a pale, muddy skin, and large dark circles under the eyes; one of the most striking features is a coated tongue and exceedingly foetid breath. There is gastric disturbance, and vomiting is frequent, and there is often diarrhoea with the passage of undigested fat in the stools. The carbohydrate cases are the commonest of all, owing to the fact that a great many children are given large quantities of starches and sugars, not only at their meals, but between meals in the shape of sweets of various kinds, often of the cheaper varieties of candies. Many children have a very low capacity for utilizing sugar, and some for both sugar and starches. As in the other forms the periodicity of the attacks is the most striking feature. Perhaps the commonest form of the attack is recurrent vomiting, although this may be seen in cases in which protein metabolism is at fault. In some instances the attack consists merely of fever, or a sick headache, while in other cases there are attacks of asthma which sometimes follow indiscretions in diet. Having found out the food factor at fault, an effort should be made to determine about what quantity of that particular food can be utilized, then to keep

the child on a diet well within the limits of its powers of assimilation. In addition to this it is exceedingly important to see that the bowels are regular, and a rather good plan is to use some fairly active purge at least once a week. Outdoor life and plenty of exercise are exceedingly important and many patients are greatly benefited by a sojourn in the country, not at a summer resort, but on a farm where a very active outdoor life may be led without too much restriction in the matter of observing social forms.

MEDICAL RECORD

July 10, 1909.

1. Leprosy, By L. DUNCAN BULKLEY.
2. Diagnosis and Localization of Appendicular Abscesses, By CASSIUS C. ROGERS.
3. Notes on the Sanitation of Yellow Fever and Malaria. From Isthmian Experience, By H. R. CARTER.
4. The Importance of the Early Recognition of Bone Tuberculosis, By ARTHUR J. DAVIDSON.
5. The Report of a Peculiar Case of Meningitis in Which Treatment by Antimeniagococcic Serum Was Attempted, By JOHN PATTERSON GARDINER.

1. **Leprosy.**—Bulkley observes that it may safely be said that the word "leprosy" strikes more terror into the heart of its victim, or suspected victim, and also into the mind of the average layman, or even physician, than that of almost any other disease known; and yet, to those who are really well informed, it bears no comparison to either cancer or tuberculosis in the mental distress which it should cause in those afflicted, while syphilis and many other diseases should inspire far more dread of contagion. Few realize that, in this climate at least, leprosy is really a harmless affection to those who may come in contact with it. A good many years ago the Leprosy Committee of the Royal College of Physicians of London wrote as follows: "The all but unanimous conviction of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is contagious or communicable by proximity or contact with the disease." And recently, in connection with the Early case, Dr. William H. Welch, of Johns Hopkins Hospital, remarked: "Leprosy is practically the least contagious of all the infectious diseases." Bulkley then takes up the Biblical leprosy and says that he is convinced that what we know by that name is not the leprosy of the Bible. In regard to the manner in which leprosy, as we now know it, is considered by those who come often in contact with it, it may be mentioned that in all the clinics in Europe, and in this country, patients thus afflicted mingle freely with others and are lectured upon and handled just as any other patients, and never has there been known any instance of harm therefrom. They are also constantly admitted to the beds of hospitals, without any thought of danger. The proof that none of these cases proved contagious is found in the fact that among the many patients with unquestioned leprosy who are brought before the New York Dermatological and other societies, there are very seldom any instances of leprosy found which have developed *de novo* without having been in countries where the disease is endemic. The testimony which could be given in regard to

the noncontagiousness of leprosy is very great, and from all parts of the world. If leprosy, therefore, is not contracted by contagion or contact, in what way is the disease acquired? Unfortunately this question has not yet been answered definitely, for neither race, climate, soil, nor hygiene can be charged, so universally spread is the disease; heredity has been excluded by many observers. Some argued that the bacillus finds entrance through the air passages, and it has been thought that the primary lesion occurred in the nose; but this has never been satisfactorily demonstrated. There is one more great means by which the organism may enter the system, and that is through food or drink. For a great many years various observers have asserted, with more or less force, that there was the greatest probability that the disease was conveyed through fish, in some way or other. Thorough cooking of fresh fish probably destroys its power of communicating leprosy, if it chance to be infected, but it is known that fish are often eaten raw, or improperly cooked, and also that very large quantities of dried fish are consumed throughout the world, often as a condiment with vegetable food, and even by those belonging to religious castes who will not take animal life. An illustration of a possible mode of conveyance is found in Russian caviar, made from the roe of several varieties of fish, which is always eaten uncooked. If the raw oyster can be the means of communicating typhoid fever, what is there unreasonable in believing that fish, under certain circumstances, can introduce leprosy? There is certainly enough reasonableness in the theory to warrant careful scientific inquiry along modern lines of bacterial research.

2. **Appendicular Abscess.**—Rogers states that appendicular inflammation may appear at any age. Catarrhal appendicular inflammation should be considered a surgical disease. A cessation of pain does not always mean an improvement. A distinctive blood count should be made every four hours. If there is a gradual increase in the number of leucocytes, accompanied with an increase of polymorphs, the case is no longer catarrhal but suppurative or gangrene, and operation should be advised regardless of pain, temperature, and pulse. Females should be operated early in the first attack of appendicular inflammation, and under no circumstances should a case be allowed to become chronic, for in the vast majority of cases the right ovary and tube soon become diseased. Pregnancy frequently is accompanied by gangrene of the chronic catarrhal appendix and many cases of puerperal sepsis are placed at the door of the obstetrician which are only recurrent attacks of appendicitis following labor. Acute suppurative appendicular inflammation is always surgical and should be operated without delay. Gangrenous appendicular inflammation is always surgical and should be operated early before there is thrombosis of the mesenteric vessels. A subnormal temperature with slow, bounding pulse and gradually decreasing pain, is indicative of grave toxæmia and the forerunner of dissolution. Tuberculous appendicular inflammation is seldom primary, but is always surgical, and may require extensive resection. If the pancreas is nodular there is prob-

ably secondary infection of the pancreas, and death usually follows from general tuberculous infection. Perityphilitis obliterans caused by repeated catarrhal attacks results in a fibrous obliteration of the appendix including the mesoappendix, causing a neuroma of the appendix and mesoappendix. The condition is always surgical. Appendicular abscesses are located in the region of the appendix and do not locate in regions distant from the appendix.

BRITISH MEDICAL JOURNAL.

June 26, 1909.

1. Remarks on a Case of Pneumococcus Invasion of the Throat upon which Laryngeal and Pulmonary Tuberculosis Supervened, By Sir FELIX SEMON.
 2. Remarks on Acute Pneumococcus Infection of the Pharynx, By JOHN ELLIOTT.
 3. Observations on the Therapeutic Value of the Pneumococcus Vaccine in the Treatment of Pneumonia and some of its Complications, By A. BUTLER HARRIS.
 4. Radioactivity and Carcinoma: An Experimental Inquiry, By W. S. LAZARUS-BARLOW.
3. **Pneumococcus Vaccine in Pneumonia.**—Harris remarks that it is a clinical fact that in pneumonia death usually takes place through failure of the heart. Particularly obvious is this in the cases of virulent pneumonia, where death occurs about the fourth day of the disease. It is easy to understand, therefore, why in virulent pneumonia with early heart failure the vaccine treatment in many cases, though it may produce a fall in the temperature, fails. The toxæmia produced is already too profound for just the arrest of the infecting process to be successful. It would seem logical that scientific treatment demands not only the exhibition of the vaccine at as early a stage as possible, before an overwhelming toxæmia has occurred, but also the introduction of a sufficient quantity of an antitoxine at the same time. It is not improbable that, in the case of the pneumococcus, the success of a vaccine is not simply due to the fact that it should be autogenous. A good deal of stress is laid upon this feature; but the fact of a vaccine being autogenous narrows down the issue to (1) the right organism being selected, and (2) the vaccine being prepared, if not unduly subcultured, from an organism of requisite virulence. Fraenkel's pneumococcus is, however, as far as we know, invariable: it is not like the streptococcus (Gordon), an inclusive term for several varieties. On the other hand, we know from the staphylococcus and coli bacillus that these may be so subcultured as to lose their original virulence, and that vaccines so prepared are of little use therapeutically. If a potent and reliable stock pneumococcus vaccine is to be obtained, it should be made from as virulent a strain as possible. There is unhappily no difficulty in the early months of the year in obtaining as much as is wanted. The truth of this argument can only be verified by a great number of observations. With regard to the treatment of acute pneumonia by inoculation, the practical conclusions are that successful inoculation for pneumonia is possible, inoculation does no harm, a vaccine from one or a number of virulent strains should be used, and it should be introduced as early

THE LANCET

June 26, 1909.

1. Radioactivity and Carcinoma, an Experimental Inquiry, By W. S. LAZARUS-BARLOW.
2. Gastrointestinal Crises from Ectopic Pregnancy, By G. A. SUTHERLAND.
3. A Case of Acute Mastoiditis, with Lateral Sinus Suppuration and Cerebellar Abscess as Complications of the Operation for the Removal of Tonsils and Adenoids, By L. A. PARRY.
4. Oral Sepsis in its Connection with Throat Disease, By GEORGE IRVINE STEWART.
5. A Case of Primary Sarcoma of the Duodenum, By H. M. MACKENZIE.
6. A Case of Inherited Tachycardia, By JAMES KIRKLAND.
7. The Effect of Diphtheria Antitoxine on the Tuberculo-opsonic Index, By ALEX. G. BANKS.
8. A Case of Missed Labor, By PETER McEWAN.
9. Hydroa Gestationis, By E. WARD.
10. Difficulties, Direct and Indirect, in the Diagnosis and Remarks on the Treatment of Certain Forms of Deafness, By RICHARD LAKE.
11. Medicolegal Evidence in a Case of Sudden Death, By GEORGE E. WHERRY.
12. Motoring Notes, By C. T. W. HIRSCH.

4. **Oral Sepsis.**—Stewart says that the treatment for oral sepsis in its connection with throat disease is that of enlarged glands in any part of the body: 1, Remove the cause. 2, If that is not sufficient, then the enlarged degenerated tonsil should be removed by surgical interference. Removal of the cause is the prevention or cure of oral sepsis, the extraction of septic molars and careful mechanical cleansing of the teeth by brushing. This must precede surgical removal of the tonsil. In fact, the reckless way in which we all have removed tonsils without attending to the causal oral sepsis cannot be too strongly condemned. This is the explanation for the observation that so many cases show unpleasant complications and bad results. Removal of the tonsils would be less indicated by their actual increase in size than by the evidence of their inefficiency, as shown by swelling of the glands at the angle of the jaw and by frequent attacks of nasopharyngitis and of bronchitis. The use of the tooth brush is essential before, during, and after tonsilotomy, and as a means of preventing attacks upon, and preserving the integrity of, the adenoid protecting ring cannot be too strongly advocated.

6. **A Case of Inherited Tachycardia.**—Kirkland gives the family history of a patient, who died suddenly during an acute attack of tachycardia. He says that the whole family practically seemed to be subject to the disease. The grandmothers on both sides of the family had marked cardiac disease, although it was not known whether it was actual tachycardia or not. The father was delicate as a young man, and he died from heart failure following influenza. One of the father's sisters suffered terribly from severe heart attacks, probably tachycardia, and she died from heart affection. The mother was threatened with pulmonary trouble in her youth, but this tendency passed off. She was all her life afflicted with intermittency of pulse, breathlessness, and palpitation. There were six daughters and three sons. The patient's two brothers were alive and both suffered at times from cardiac pain and palpitation, sometimes accompanied by slight dyspnea. The eldest sister died at twenty-eight years of age from pneumonia; she also

as possible. The estimation of the opsonic index is not necessary, but the observation of the temperature and physical signs is in pneumonia a sufficient guide in gauging the repetition of the dose. Infections of the lung by the pneumococcus which fail to resolve after an acute pneumonia, as well as pneumococcal infections of other areas, ought certainly to be treated with a pneumococcal vaccine, and these cases appear to afford a reasonable prospect of success.

4. **Radioactivity and Carcinoma.**—Lazarus-Barlow, in his third and fourth Croonian lectures, remarks that the original question with which he started—namely, Do the physical agents which are commonly supposed to give rise to cancer (clay pipes, soot, etc.), and do samples of carcinomatous material afford evidence of the possession of radioactive properties?—is not conclusively answered. In certain respects they behave like the radioactive materials of the chemist or physicist, but in no single instance do they respond to all the criteria of recognized radioactivity. He shows that many of the substances affect a photographic plate in the dark; but, on the other hand, few can act on the plate if a screen is interposed, and even in those instances in which a positive result is obtained under these circumstances, it is doubtful whether the interposed celloidin screen is fairly so called. Nevertheless, it is doubtful whether the power of acting through a screen is a necessary criterion of radioactivity, since he has demonstrated that albuminous compounds of recognized radioactive substances may possess a power of acting on the photographic plate which will not traverse an extremely thin screen, and, indeed, may be devoid of photographic powers altogether. In the latter respect they are comparable with clay pipe, inasmuch as neither type of substance acts on a photographic plate and both accelerate the discharge of an electroscope. In the same category comes carcinoma material which has been extracted with acetone or with water and subsequently with ether. Possibly, too, some specimens of spleen and of the inorganic constituents of bone are to be reckoned in the same class. The author takes up the cancer question, and speaks of the different parts of the body attacked by carcinoma. He finally puts forward the theory that it is possible that the radioactivity is the common factor which must be capable of stimulating the growth of certain cells while it depresses the growth of others, which must reside in substances of the widest diversity, which must act with varying intensities in different cases though always with comparative slowness, the natural action of which must be progressive so long as it persists. The x rays cause carcinoma, they stimulate (like other radioactive substances) the growth of cells, and, again, they retard the growth of cells, carcinomatous material, noncarcinomatous material, extracts of animal tissue, various substances usually regarded as causally related to carcinoma, possess properties resembling those of recognized radioactive substances to a greater or less degree when considered from the physicist's point of view, and there is evidence that they possess powers of stimulating or depressing the division of animal cells. Such similarities are at least suggestive.

suffered from cardiac discomfort with breathlessness. The second sister, who died at the age of thirty-six years, had splenic disease. She was married but had no children. Tachycardia developed from sea sickness on a long voyage. The third sister died from peritonitis. In her case there was no apparent heart trouble so far as the patient knew. The fourth sister was still alive and was well but not robust. The fifth sister, who had pronounced heart trouble, died at forty-six years of age from heart failure, and for the last three or four months of her life she was very ill, suffering from tachycardia accompanied by dyspnoea. She was never able to take proper food, as tachycardia was sure to follow an average meal. The sixth sister died at about six years of age from concussion of the brain. She had dropsy which was said to be due to cardiac disease.

7. The Effect of Diphtheria Antitoxine on the Tuberculoopsonic Index.—Banks gives thirty observations and remarks that there is no great variation in the average index before and after the injection of serum. Nevertheless, a definite rise is apparent in the average index two days after injection, and this gains significance from the even distribution over individual readings. The average index is within normal limits, but more than one third of the indices are below 0.90, only six are above unity, while five are below 0.80. Arranging these according to the week in which taken, one half fall in the fourth and fifth weeks, giving an average of 0.86, and those during the sixth and seventh weeks 0.96. The other factors—age and dosage—seem to have little influence. As regards the former, the average index of those up to and including four years is about equal to the average of those between four and seven years and also to the total average. In the matter of dosage again, the average of cases receiving from 15,000 to 60,000 units of antitoxine is practically the same as that of those who got only from 6,000 to 12,000. He concludes that in healthy subjects the effect of diphtheria antitoxine on the tubercle index is small, and it is quite possible that the larger variations are due to some hidden tuberculous lesion. But two points seem to emerge from these observations. Firstly, that there is in the majority of cases a definite rise in the tuberculoopsonic power shortly after the injection of antitoxine; and secondly, that during some few weeks after this a somewhat low index to the tubercle bacillus is the rule. Also, these effects are independent of the quantity of antitoxine administered and probably of the age of the patient.

8. A Case of Missed Labor.—McEwan reports such a case. The patient, a married woman, twenty-nine years of age, had her last period on October 19, 1906. In January, 1907, her abdomen became larger and continued to increase in size. Milk appeared in her breasts and she felt quickening. She had morning sickness and thought herself pregnant. The abdominal swelling gradually increased and the amenorrhœa persisted until May 10th, when she had a flooding followed by a slight reddish vaginal discharge, occasionally offensive, for ten weeks. She was in bed a few weeks; she had no febrile symptoms, and complained only of weakness. Since then she had two periods, one in

September and the other early in October, both normal, but the loss was slight. She had no pain at these periods. She had had a feeling of weight in the pelvis, mainly on the right side, for the previous five months and her strength did not return satisfactorily. Her abdomen diminished in size from May 19th onward. She had no trouble with the bowels or bladder, except that she thought she had not been able to empty her bladder completely for some months, the act of micturition stopping suddenly. She had two children, six and seven years old, respectively, and had had one miscarriage (at three months) four years ago, after which the patient was cured. She came to the hospital with the intention of having her "tumor removed." The uterus was opened and it was found that the placenta was firmly adherent to and incorporated with the uterine wall. The umbilical cord was inserted about the centre. Only over the placental area did the upper part of the body of the uterus show anything approaching the normal thickness; in the other parts it was exceedingly thin, yellowish in color, and tore readily when handled; there was no obvious muscular structure. The upper part did not bleed when torn. Near the cervix the muscular substance was apparent, but softer than normal and bled on cutting. The foetus was a male, well developed, looking not much short of full time. The skin was white, and there were no blebs, areas of pigmentation, or shrivelling. The skull bones were well developed but separated, and exposed the membranes of the brain loose and shrunken. The genitals appeared to be nearly fully developed. The length from the heel to the navel fold was about five inches, of the upper limb about five inches, and from the heel to the lower part of the neck about 14½ inches. The patient died fifteen hours after the operation from shock.

LA PRESSE MEDICALE.

May 8, 1909.

1. Technique of and Indications for Buried Prosthesis in the Treatment of Fractures, By A. LAMBOTTE.
2. Clinical Researches for the Presence of Specific Antibodies in the Serum of Various Streptococcal Affections, By MARIANO R. CASTEX.
3. Scoliosis from Malformation of the Vertebra, By P. DESFOSSÉS.

1. Buried Prosthesis in the Treatment of Fractures.—Lambotte uses gilt or nickel plated steel splints for the support of broken long bones, especially the humerus, radius and ulnar, and femur. These splints are screwed to the bone under absolute asepsis, which he carries so far as not even to touch the screws with his hands, having devised special instruments for the procedure. To reach the fracture an incision is made through the muscles parallel to the bone.

2. Specific Antibodies in the Serum of Streptococcal Affections.—Castex has made experiments to ascertain whether patients with erysipelas, purulent pleurisy, puerperal fever, scarlatina, etc., present in their blood serum specific amboceptors. His results have not been convincing.

May 18, 1909.

1. Osteomyelitis of the Vertebra, By PROFESSOR KIRMESSON.
2. Reticular Lividity of the Skin, By L. M. BONNET.
2. **Livor Cutis.**—Bonnet remarks that the liv-

idity of the living is the result of hyperæmia, a dilatation of the cutaneous capillaries, while the lividity of the dead is a simple cadaveric imbibition of the tissues of a fluid which has filtered through outside the vessels. The acute lividity can be physiological, as the livedo a frigore, or pathological, as cyanosis of the extremity, when it is the result of disturbances in the vasomotor innervations. The chronic lividity is usually inflammatory or erythematous, and caused by local lesions.

May 15, 1909.

1. Escape of Cerebrospinal Fluid through the Nasal Fosse, By A. VIGOUROUX.

May 19, 1909.

1. Two Cases of Gonococcus Septicæmia with Typhoid Fever, By PROFESSOR DIEULAFOY.
2. Serious Results with Antidiphtheritic Serum, with a Special Study of its Relation to Asthma, By ALFRED MARTINET.
3. A Simple Test for Blood in Urine, By ALBARRAN and HEITZ-BOYER.

1. **Gonococcus Septicæmia and Typhoid Fever.**—Dieulafoy reports two interesting cases in which he observed typhoid fever as a sequel to gonococcal septicæmia. He remarks that an infection in the hospital is excluded, but there is a possibility that these were latent cases which were brought out by the gonococcal septicæmia.

2. **Antidiphtheritic Serum.**—Martinet bases his article upon twenty-eight cases reported in the *Therapeutic Gazette* and upon a report in the *Journal of the American Medical Association*.

3. **Blood Uralysis.**—Albarran and Heitz-Boyer use an alkaline solution of phenolphthalein. To two cubic centimetres of urine are added one cubic centimetre of the reagent, mixing thoroughly, when three or four drops of hydrogen peroxide are added. The mixture will show in a short time (a few seconds to three minutes) a pinkish red discoloration, more or less pronounced according to the amount of blood present.

LA SEMAINE MEDICALE.

May 12, 1909.

- Comparison of the Value of Orthodiagraphy and Percussion of the Heart in Mitral Stenosis,

By H. VAQUEZ and E. BEDFORD.

Orthodiagraphy and Percussion of the Heart.—Vaquez and Bedford remark that the conclusions reached by these two methods of examination are the same, although percussion has the advantage of giving a figure which can be measured and expressed in ciphers.

May 19, 1909.

- Neuropathic Ileus with Stercoraceous Vomiting, By M. ROCH and DE SENARCLEUS.

Neuropathic Ileus with Stercoraceous Vomiting.—Roch and de Senarclaus have observed such a case and remark that in a patient otherwise in a good condition, with strong pulse, and normal temperature, stercoraceous vomiting alone should indicate an operation for ileus. Other grave symptoms as a decided impairment of the bodily and mental powers, subnormal temperature, feeble and arrhythmic pulse should also justify such an operation, if the intensity of the symptoms allow a favorable prognosis.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 24, 1909.

1. Treatment of Diabetes Mellitus, By GEORG ROSENFELD.
2. Alimentary Lipæmia, By J. LEVA.
3. What Value Has Sugar of Milk in the Nutrition of Infants? By WEIGERT.
4. Demonstration of an Atypical Bacterium Coli as an Exciter of Human Disease, By CHRISTIAN SCHOENE.
5. The Action of Ultraviolet Rays of Light upon the Eye, By FRITZ SCHANZ and KARL STOCKHAUSEN.
6. Wassermann's Reaction, By FRITZ LESSER.
7. Sanitation in the Prussian Army during 1908, By GEORG SCHMIDT.

3. **Sugar of Milk and Nutrition of Infants.**—Weigert asserts that the addition of sugar of milk to dilutions of cow's milk with water has no influence on the weight curve of the child; that in infants who have a tendency to obstipation when fed with milk and water the addition of sugar of milk yields no beneficial influence; and that in infants with dyspeptic stools the addition of sugar of milk to indifferent nutritive mixtures delays the return to normal conditions without being productive of any advantage.

5. **Action of Ultraviolet Rays upon the Eye.**—Schanz and Stockhausen say that the ultraviolet rays produce inflammatory symptoms of the external parts of the eye identical with those of snow blindness, and designate that condition as "electric ophthalmia." The lens and the retina become fluorescent, as has been shown by other writers. Widmark has shown that by prolonged irradiation the lens may be rendered cloudy. Hess has demonstrated changes in the lens capsule. The retina also may be irritated by the ultraviolet rays. Microscopic changes have been found in the retina after irradiation, particularly in the layer of ganglion cells and the outer granular layer. Disturbances of color vision in the neighborhood of the point of fixation have been ascribed to the influence of these rays. The authors then speak of the action and absorption of rays of different wave lengths and the means to be adopted for protection of the eyes.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

May 25, 1909.

1. Three Articles on Otology, By SCHWARTZE.
2. The Importance of the Camidge Test in Gallstone Disease, By KEHR.
3. Treatment of Paralyzes of the Upper Extremity, By VULPIUS.
4. The Spreading of Typhus in a City, By KAYSER.
5. The Coppering of Preserved Fruit, By SPIRO.
6. Cerebellar Asynergy with Fixation Change, By GÖTT.
7. A Case of Kala-Azar, By SLUKA and ZARFL.
8. Instantaneous X Ray Pictures, By DESSAUER.
9. The Importance of Wassermann's Serum Diagnosis in Practice, By NEISSEK.
10. Contributions to Nerve Surgery (*Continued*), By OPPENHEIM and KRAUSE.
11. Heinrich von Ranke, By SEITZ.
12. Ludwig Laqueur, By PANDENSTEIN.

1. **Otology.**—Schwartz considers Bier's method of treatment of acute purulent otitis media by stasis hyperæmia dangerous and has abandoned its use. The benefit to be obtained from various forms of massage of the middle ear in sclerosis he thinks questionable. Operative intervention in the latter condition he has not found very satisfactory. In certain cases in which the sclerosis was of inflam-

matory origin, that is, where the condition was that of inflammatory adhesions, he has obtained improvement from injections of fibrolysin. He speaks highly of the beneficial influence of paracentesis of the drum membrane in acute otitis media, and favors catheterization of the Eustachian tube as early as possible after the decline of the painful stage of acute catarrh of the middle ear and of acute otitis media.

2. **The Cammidge Test.**—Kehr found the Cammidge test to be a reliable guide to the condition of the pancreas in ninety per cent. of the cases of gall-stone disease that he investigated.

6. **Cerebellar Asynergy with Fixation Change.**—Gött reports the case of a boy, twelve and one half years old, who was suffering from hereditary Friedrich's ataxia and had a radical operation performed on his mastoid because of a cholesteatoma. After he recovered it was found that when he wished to look at an object he would turn his head directly toward the object and that his eyes would then more slowly turn in the same direction until fixed upon the object. As Gött states it he looked first with his face and afterward with his eyes. He is inclined to believe that this was a cerebellar symptom.

8. **Instantaneous X Ray Pictures.**—Dessauer describes x ray pictures taken in exposures of less than one hundredth of a second.

10. **Nerve Surgery.**—Oppenheim and Krause describe two cases of tumors of the cervical cord successfully operated in.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

June, 1909.

1. Short Duration Typhoid Fever, By WARREN COLEMAN.
2. Heart Failure in Infectious Diseases: Its Prevention and Successful Management, By W. PARKER WORSTER.
3. The Symptoms of Descending Thoracic Aneurysm, By A. W. HEWLETT and W. R. P. CLARK.
4. The Reversion Theory and Classification of Goitre, By WM. CARPENTER MACCARTY.
5. The Nature, Diagnosis, and Treatment of Metabolic Osteoarthritis. So Called Rheumatoid Arthritis, Arthritis Deformans, etc., By P. WILLIAM NATHAN.
6. Primary Splenomegaly of the Gaucher Type, By N. E. BRILL, F. S. MANDELBAUM, and E. LIBMAN.
7. Primary Carcinoma of the Lungs, By A. L. GARBAT.
8. The Detection of Betaoxybutyric Acid in the Urine, By T. STUART HART.
9. The Effect of Certain So Called Milk Modifiers on the Gastric Digestion of Infants, By T. WOOD CLARKE.
10. The Effect of Certain So Called Milk Modifiers on the Gastric Digestion of Infants, By GEORGE THOMAS JACKSON.

1. **Short Duration Typhoid Fever.**—Coleman demonstrates that some, at least, of the fevers which formerly would have been considered febricula or simple continued fever are in reality typhoid fever. In the present state of our knowledge it would be rash to assert that all mild fevers in this latitude, for which no other cause can be found, are typhoid in nature, but he asserts that there have been no series of cases of mild fevers in Bellevue Hospital in the last five years which could not be proved to be either typhoid fever of some easily recognized disease, as bronchitis, gastrointestinal disturbance, etc. This investigation brings also out the fact that a great deal of confusion exists in the literature concerning the milder forms of typhoid fever, and emphasizes the urgent need, from the epidemiological standpoint, of a more thorough study of these forms. No statistics have been ac-

cumulated, since exact methods of diagnosis have come into general use, to show the relative proportion of the mild to the severe cases of typhoid fever. Doubtful cases should be treated as typhoid fever until the cause of the disease can be found.

3. **Descending Thoracic Aneurysm.**—Hewlett and Clark report six cases of descending thoracic aneurysm. They remark that aneurysms of the thoracic arch which reach any considerable size usually produce characteristic signs of symptoms. An abnormal pulsation, murmur, or area of dulness, a tracheal tug, or a left vocal paralysis immediately direct attention to the possible presence of an aneurysm, and the x rays are called upon to contribute their important diagnostic aid. When the descending thoracic aorta is involved, however, signs and symptoms are very apt to be lacking, and when present they are frequently misinterpreted. The physical signs of aneurysm of the descending thoracic aorta are of such an indefinite character that only exceptionally can one make a diagnosis from signs alone previous to erosion of the bony thorax. In none of their patients was a murmur heard over the site of the aneurysm, though listened for in every case. The great value of x ray examination is apparent in such cases. One is often astounded to see the size of the aneurysm that has escaped detection by the ordinary methods of physical examination. The difficulties encountered in the interpretation of x ray findings are certainly negligible compared with the difficulties surrounding the use of ordinary methods of diagnosis.

4. **Classification of Goitre.**—MacCarty remarks that the process of goitre may be a process of reversion of the thyroid gland to some former function. Hyperthyroidism is a toxæmia the result of absorption of the products of the hyperactive thyroid. The stimulus causing the overactivity may be the same that stimulated the thyroid to activity in primitive man, which was then probably a normal stimulus to the gland, just as we have normal stimuli for glandular activity in man in his present condition. It may still be present in the food or water, formed through some process in the intestine or in the metabolism of the body, or it may exist in the air. The types of goitre are probably not types but stages in a general process. Goitre may be classified upon a pathological basis as follows: (a) Cystic goitre (thyroidea cystica); (b) hypertrophic parenchymatous goitre (thyroidea parenchymatosa hypertrophica); (c) papillary cystic goitre (thyroidea cystica papillare); (d) hypertrophic fetal goitre thyroidea (fetalis hypertrophica); (e) fetal adenoma of the thyroid (thyroidea fetalis adenomatosa). Hyperthyroidism always occurs in b and c, and may occur in e.

5. **Metabolic Osteoarthritis.**—Nathan uses thymus gland extract. His method of proceeding in these cases is as follows: The thymus is given immediately. He usually begins with two 5 grain tablets, thrice daily. In two weeks the dose is increased to three tablets, and after a few months three tablets four times a day are given. The patient is kept at rest until all symptoms of active joint disease have subsided. He then begins passive motion in all the affected joints. This is carefully done at first and gradually increased until he has an arc of free motion which is only limited by the short-

ened tendons. Massage, which is often painful, is unnecessary and may even be harmful. His next step is to get the patient on his feet. As soon as the patient is able to be upon his feet or use his joints without the appearance of joint irritation, all contracted tissues are divided with the tendone and the deformity is corrected. This, of course, requires immobilization for three or four weeks; but with light plaster of Paris bandages it does not preclude the use of the lower extremities. A few days after the operation the patient is again induced to be about, and he is usually able to hobble around quite comfortably with crutches or a cane until the bandages are removed.

9. **Gastric Digestion of Infants.**—Clarke states that the motility of the infant stomach varies inversely to the concentration of the food. The more dilute the food the more frequently may the feedings be given. Lime water does not reduce the acidity of the gastric contents, the neutralizing of a portion of the acid being overcome by an increased stimulation of hydrochloric acid by the gastric glands. This may even increase the amount of acid available for digestion. Sodium citrate acts on the acid in the stomach converting it into sodium chloride and thus markedly reduces the "available hydrochloric acid." Barley water seems to have no constant effect upon the chemistry of gastric digestion in the infant. The type of infants who vomit persistently may be divided into two classes, defective and excessive acidity. Test feedings should be given to this type of infants to determine to which class they belong. A five per cent. milk sugar solution seems to be the most satisfactory feeding to determine fine differences in the gastric contents. This may be followed by a mixture of milk, one part; water, two parts; to determine to what extent the gastric glands are capable of responding to stimuli. For the lactose solution thirty minutes is the most satisfactory time to allow the feeding to remain in the stomach; for the milk mixture sixty minutes. On purely theoretical grounds it would appear that when the acidity is low either small doses of alkalis or of hydrochloric acid are indicated while in excessive acidity sodium citrate holds out the best hope of benefit. Protein digestion in the infant's stomach is slight and is proportional to the amount of hydrochloric acid in the organ.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held in Philadelphia June 3, 4, and 5 1909.

The President, Dr. C. B. G. DE NANCREDE, of Ann Arbor, Michigan, in the chair.

Excision of the Scapula.—This was the subject of the address of the president, who said that the statistics were misleading, because cases in which the disease was primary in the scapula and secondary in the soft parts, those in which the operation was done in two stages, and those in which it was performed for benign growths, for caries, for injury, and for tuberculous disease were usually all included. Indeed, in one paper a removal of the

scapula after death was included. There was no discrimination in any of the tables between operative recovery and the final results, investigation showing that a large number of those that were reported as having recovered had later died of recurrence of the trouble. The three year rule had been ignored in like manner, for it was well known that this was utterly unreliable for any form of malignant disease. One patient had an inoperable relapse at the end of five years, yet this case was included by the reporter as a recovery. Relapses were often the source from which generalization took place. Careless examination of the patient and the expectation of finding a marked difference between the physical signs in the two lungs often led to the opinion that pulmonary metastases had not occurred, the true explanation being that metastases were so numerous and the new growths so small and so finely distributed that the physical examination was unreliable.

The death rate probably was now lower with the new methods of operating, saving blood, and preventing shock, and it was possible therefore that some of those who had died in the past from shock and hæmorrhage might have shown permanent cures if they had survived the operation. It was a matter for future investigation to determine whether scapulothoracic amputation would not give more permanent recoveries. The usefulness of the upper extremity after the removal of the scapula was usually so good that, of course, hesitation was felt about doing the operation just mentioned. The details given in the tables seemed to warrant these conclusions, which had proved to the author, of course, a surprise. There was only one case on record where the details were obtainable sufficiently long to prove that it was really a cure, the patient being entirely well at the end of eight years. A few more were probably cured, although not reported long enough to be past the time that relapses had been noted. A vast number of those alleged to have been cured had been observed from only a few weeks to a few months and then lost sight of. Operations for pure enchondroma and other diseases demanding excision of the scapula presented very favorable results.

Chronic Intestinal Stasis.—Mr. W. ARBUTHNOT LANE, of London, England, referred to his earlier communications on this subject, with special reference to the removal of the colon for chronic constipation, and described the technique of the operation. In nine cases he had removed the colon, and of this number one patient died from the bursting of a small abscess in the original cavity. In a number of private cases division of the ileum at its junction with the large bowel was effected, with no death from the operation *per se*. Removal of the large bowel was a serious operation, but the danger attending its performance varied with the degree of toxæmia. He did not, however, recommend or advise such a radical operation until all other measures, medicinal and hygienic, had been tried. The danger could be reduced very materially by the subcutaneous injection of a large quantity of normal salt solution immediately before the operation.

Dr. J. C. BLOODGOOD, of Baltimore, said that chronic constipation had in some instances an anatomical basis. He would call attention to the use

of the x ray and injection of bismuth as a method of diagnosis in these cases. He believed this method would be used more frequently in the future in the class of cases under discussion, as it was used now in cases of aneurysms, bone lesions, etc. He had recently operated upon a patient who for three years had had pain in the lower abdomen. On exposing the right side, some of the adhesions referred to by the essayist were found, and on exposing the left side, the sigmoid could be lifted out of the abdomen as easily as one could lift out a loop of the small intestine. The anatomical lesion in this case was a sigmoid enlarged from fecal matter. The sigmoid itself was normal. The mesentery was normal. These adhesions were separated with good results. In another case the adhesions were more pronounced. In this case the bowel was not resected, the patient being relieved by medical treatment. There was no difficulty in resecting the intestine and performing lateral anastomosis, but if one could demonstrate early a band or adhesion or the anatomical condition, and medical treatment would relieve it, more good would be done than by resecting the sigmoid.

Dr. THOMAS W. HUNTINGTON, of San Francisco, said that it had seemed to him for many years that very many of these cases of enteroposis, bearing especially on the large bowel, could be avoided by two things: 1, Careful attention in early life to the emptying of the bowel. It was a fact that in a large number of people in the hands of the average general practitioner a more or less permanent accumulation of fecal matter in the large bowel had been overlooked. 2, He believed this accumulation of fecal matter was due to a definite cause. Take, for instance, an appendix which had not given rise to the ordinary symptoms, it had caused sufficient irritation to interrupt the peristaltic wave and to bring about a condition of the bowel which was extremely disastrous in the carrying of residual material. Careful attention in early life to the emptying of the bowel would obviate the possibility of the occurrence of prolapse of the sigmoid, and by loosening up the large bowel and changing its environment or its relation we might avoid early operation for a pathological condition which existed. Careful study and search for the pathological condition, such as an obscure appendicitis, would enable us to avoid the later consequences which the author had portrayed.

Dr. ARTHUR DEAN BEVAN, of Chicago, said that, as he understood the essayist, he made a plea for operative intervention in cases of chronic constipation. He would insist upon intestinal obstruction before he would undertake such an operation as the removal of a part or the whole of the colon for chronic constipation. The large and small bowels performed their functions admirably sometimes in spite of the presence of extensive adhesions. That was evident after many operations. What would internists think of surgeons if they took the position of treating chronic constipation by resection of the large intestine or by anastomosis? Most of these cases could be very much better handled by our internists by exercise, by hygiene, etc., than by extensive surgical operation. Personally, he protested against advocating an operation so extensive as the removal of the colon for chronic constipation it-

self, and should insist upon reserving the operation for absolute intestinal obstruction.

Dr. JOHN F. BINNIE, of Kansas City, Mo., understood Mr. Lane as advocating this operation for chronic intestinal stasis only after all other measures of treatment had failed. Personally, he had practised cæcostomy in a number of these cases with very fair temporary results, but had not observed them sufficiently long to determine whether the results would be permanent or not.

Dr. JOHN B. ROBERTS, of Philadelphia, agreed partly with what Dr. Bevan had said, because of some recent experience he had had with intermittent obstruction of the bowel due to kinks and various other causes; but he realized that the essayist did not propose to open the abdomen of everybody for the relief of chronic constipation. After the internists had failed to afford relief to these patients by exercise and medicinal and dietetic measures, surgical operations might do good. He was greatly pleased with the broad philosophical view which Mr. Lane had given of the whole question.

Dr. MAURICE H. RICHARDSON, of Boston, said that we must approach the surgery of the large intestine in cases of this kind, as Dr. Bevan had said, from the symptomatology of chronic intestinal obstruction. We all saw cases of complete chronic intestinal obstruction which demanded a most thorough radical operation. In one of his cases of complete volvulus of the sigmoid which threatened life the sigmoid filled the whole abdomen, producing an acute obstruction of the bowel which necessitated an operation.

Dr. W. B. COLEY, of New York, said that every severe case of acute intestinal obstruction required an operation, and the operation was attended with great danger. Of nine patients operated upon, all died. He had reported a case of volvulus of the sigmoid to the New York Surgical Society, which was preceded by attacks of chronic intestinal obstruction, ending with an acute obstruction. He operated upon the patient on the ninth day, when the patient was almost moribund, with great distention of the abdomen, high pulse, elevated temperature, etc. He opened the abdomen under cocaine anesthesia (as the patient could not stand a general anesthetic) over the sigmoid, and relieved the obstruction. The patient recovered.

Mr. LANE wished it to be distinctly understood that this form of operative treatment was suggested only after all other measures had failed.

The Fæcal Origin of Some Forms of Postoperative Tetanus (Anorectal, Intestinal, Puerperal, Genital, and Lower Pelvic Operations), and its Prophylaxis by Proper Dietetic or Culinary Measures.—Dr. RUDOLPH MATAS, of New Orleans, in a paper on this subject, drew the following conclusions:—

1. Notwithstanding the vast increase in our knowledge of the ætiology, pathology, and prophylaxis of tetanus since the discovery of the drumstick bacillus of Nicolaïer, a certain, not fully determined, number of postoperative deaths from this infection occurs in seemingly clean surgical cases, which has not been satisfactorily accounted for.

2. While it has been fully and irrefutably demonstrated that the regional liability of the exposed parts of the body to tetanus (feet, hands, legs, fore-

arms, arms, face, neck, etc.) is directly proportionate to the degree of surface contact with tetanus bearing (tetaniferous) matter (earth, manure, dust), the origin and regional distribution of accidental and postoperative tetanus in the concealed parts of the body (protected from surface exposure) has not been sufficiently investigated or recognized, surely not sufficiently insisted upon in accounting for postoperative deaths in which the rules of surgical asepsis have been apparently well observed.

3. Abundant experience has shown that, while the risk of tetanus infection can be absolutely eliminated in all operations upon sterile tissues in which a rigorous postoperative asepsis can be maintained until healing has occurred, this liability cannot be removed in those regions in which postoperative asepsis cannot be secured.

4. In order of importance, next to the feet and hands and other exposed parts of the extremities, the injuries and surgical operations in those regions of the body which are most exposed to faecal contamination are the most liable to tetanic infection. In this category we will place the anorectal region, the perinaeum, the female genitourinary tract, the male genitals, especially the scrotum, the lower pelvic region, including the buttocks and the sacrococcygeal region, and the groins, the thigh, and the knee, on their posterior surfaces especially; after operations on the intestines, artificial anus, etc., in all of which postoperative faecal contact is either constant or unavoidable, on account of proximity to the intestine. In considering this topographical distribution we are excluding the direct but unconscious transmission of faecal matter to distant parts of the body by the soiled fingers of the patient himself or those of his attendants.

5. Careful attention to the sterilization of instruments and disinfection of the hands, compelled by the rules of modern surgical, obstetrical and veterinary practice, have enormously reduced the liability to tetanic infection, even when those parts of the body are involved which are most exposed to faecal contact, by eliminating the direct inoculation of wounded surfaces with contaminated instruments and hands. However, the occasional postoperative deaths, which occur from time to time in the practice of competent and clean surgeons, clearly point to another source of danger which is not dependent upon defects of technique or contaminated material, e. g., imperfectly sterilized catgut, but to other sources of infection outside of and apart from the operative act itself, which have not been adequately appreciated.

6. This hitherto unrecognized or disregarded factor in the causation of postoperative tetanus, at least in regions liable to faecal contact, is the direct contamination of the alimentary canal and its contents with living tetanus bacilli and their spores, swallowed in raw, uncooked vegetables, berries, and other fruits which are cultivated in fertilized or manured, i. e., tetanized soil.

7. It may be a mere coincidence, but it is a fact that in all the cases of postoperative tetanus occurring after operations in regions liable to faecal contact, which have been investigated by the author (two in his own practice), the patients had eaten copiously of uncooked vegetables immediately before the operation. The vegetable menu in these

cases corresponded with the laboratory findings in regard to the vegetables found most frequently contaminated with tetanus germs and spores, viz., celery, lettuce, chicory, water cress, cabbage (cole slaw), radishes, turnips, carrots, tomatoes, and other green vegetables, strawberries, blackberries, and other berries and fruits which are grown in the soil or brought in contact with it, and which are largely consumed raw in an unavoidably contaminated state.

8. The tetanus bacillus and its spores are known to survive the passage through the intestinal canal of the domesticated animals, especially the herbivorous horse and cow, and the dung of these animals is a perpetual culture medium for the tetanic bacillus, swallowed constantly with the grass of the pasture and the fodder of the stable; not only are the bacilli ejected alive, but their virulence and activity are probably intensified by their temporary residence in the favorable conditions of the lower intestinal tract. This survival of the tetanus germ in a virulent state is fully demonstrated by the experiments of Sormani, Sanchez Toledo, Veillon, Hoffman, and others, who have demonstrated that the diluted excrement of the horse and cow, injected subcutaneously and otherwise, will kill rabbits in from five to six days with all the symptoms of this disease. These and other authors have fully demonstrated that the spores of the drumstick bacillus resist the action of the digestive juices. It has also been demonstrated that the tetanus laden faeces of the healthy horse and cow are capable of producing fatal tetanus when brought in contact with wounded surfaces in these animals.

9. In view also of the fact that five per cent. of all normal men harbor the tetanus bacillus or its spores in an active state in the intestinal canal, and that the percentage of contaminated individuals is increased to twenty per cent. in hostlers, stablemen, dairymen, drivers, and the like, the possibility of tetanus from faecal contact must always be kept in mind, especially when operating upon the anorectal region, the perinaeum, or the genitourinary organs in unprepared subjects.

10. The author fully recognizes that the normal defenses of the organism against intestinal infection are, in healthy individuals, usually sufficient to protect it, even if the living tetanus bacillus has been frequently introduced into the alimentary canal with the ingested food. It is only through the salutary and preservative influence of the protective mechanism, which largely neutralizes the most virulent infections in the alimentary canal, that we can account for the great numbers who escape when operations are performed in the recognized tetanogenic regions. It is evident, however, that even if tetanus infection is a comparatively rare postoperative sequence, it is well worth the observance of the simple precautions required to avoid this deadly accident. Precautionary measures would be more than justified if only one in ten thousand persons operated on could be saved from the almost certain death which follows when this form of inoculation occurs.

11. In accordance with the preceding statements and his own convictions, the author has taught and insisted in his own practice, since his second and last postoperative death from tetanus occurred, five

years ago (perinæoplasty and for hæmorrhoids), that no patient should be brought to operation without antitetanic preparation whenever an operation is to be performed upon parts in which fæcal contamination is unavoidable (hæmorrhoids, fissure, fistula, stricture, etc.).

12. This antitetanic preparation is very simple and consists of (a) purgation three days before the operation; (b) the suppression of all raw, uncooked food, especially green vegetables, berries, and other fruit for the same period of time before the operation. In emergencies, when dietetic preparation is impossible, 10 c.c. of tetanus antitoxine are injected subcutaneously at the time of the operation, while the patient is still under the anæsthetic.

Dr. JOHN E. OWENS, of Chicago, wished to mention the case of a woman he saw a few years ago, past middle age, suffering from tetanus. She had no appearance of a wound, but two or three days before she consulted him she had a tooth pulled. Before the attack of tetanus began she had been eating celery, of which she was very fond, and he had no doubt the attack resulted from eating the uncooked celery.

Dr. NATHAN JACOBSEN, of Syracuse, N. Y., recalled one case in which tetanus developed after an operation for hæmorrhoids, which was performed by a so called rectal specialist, the injection method having been resorted to. It was thought the tetanus was due to carbolic acid or to the ligature material that was used. In other cases of tetanus he had seen following operations on the anorectal region trismus was a late manifestation.

Dr. W. H. HUTCHINGS, of Detroit, had treated three cases of postoperative tetanus. In one the tetanus followed an abortion. In another it followed injuries to the hand. In a third it followed an apparently clean operation for suprapubic shortening of the round ligaments. It developed twelve days after the operation, but the wound healed by primary intention. All three patients recovered.

Dr. JOSEPH RANSOHOFF, of Cincinnati, a few years ago did considerable anorectal work, but never saw a case of postoperative tetanus, with one exception, and that was in the practice of a colleague. The patient had been curetted and fuming nitric acid introduced into the uterus. Acute tetanus developed but there was no trismus, but an open mouth, a symptom he had not seen before. In every case the alimentary tract should be thoroughly emptied.

Dr. MAURICE H. RICHARDSON, of Boston, had never seen a case of postoperative tetanus. It must be very rare when we considered infections through the alimentary canal, such as acute appendicitis cases, enterostomies, and other operations by which the large intestine was opened.

Dr. ARTHUR DEAN BEVAN, of Chicago, asked if was not possible that tetanus varied considerably in different localities.

Dr. ARPAD G. GERSTER, of New York, said that thirty-two years of surgical practice in two hospitals had failed to produce a single instance of postoperative tetanus to his knowledge.

Dr. BEVERLY MACMONAGLE, of San Francisco, in an experience extending over thirty years, had seen but one case of tetanus following an operation. In this case a thromboembolism was done; catgut was

used, and he had no doubt infection came from the catgut. He had operated in the houses of Italians and Spanish, where they had a horse or a pig or cow adjoining their rooms, yet he had not had a case of infection from the tetanus bacillus in any of those bad surroundings.

Dr. EDMOND SOUCHON, of New Orleans, remembered distinctly losing a young girl upon whom he had operated for hæmorrhoids. She died on the eighth day after the operation, from tetanus.

Dr. F. H. GERRISH, of Portland, Maine, some twenty-five years ago, had had in close proximity to one another two cases of postoperative tetanus. One patient was a child in the teens, and tetanus followed an operation for necrosis of the tibia; in the other tetanus developed after ligation of hæmorrhoids. Tetanus seemed to come in waves. In the year these two cases occurred tetanus was quite prevalent. Three years ago they had in the hospital with which he was connected sixteen cases of tetanus in the course of eighteen months, and they were still in doubt as to the occasion for those cases.

Dr. J. COLLINS WARREN, of Boston, thought it ought to be said in this discussion that tetanus was to a certain extent a tropical disease, that latitude had some influence upon the growth of the bacillus of tetanus, and that in the tropics it grew more luxuriantly than in temperate zones.

Dr. S. STILLMAN, of San Francisco, could see how there was danger of tetanus developing after ligature operations for hæmorrhoids. That was the experience of Lane in the navy on the Pacific Coast, at Panama, and in the early days in San Francisco. The danger was a real one at that time, and his experience was extensive in those days; and it also happened in his own work a number of times, but no particular precautions were taken to guard against tetanus developing.

Dr. ALBERT VANDER VEER, of Albany, N. Y., said that his experience did not bring to his mind a single case of tetanus in connection with operations upon the rectum. The cases of tetanus seen in army practice generally resulted from shell wounds, in which there was a great deal of dirt carried into the wounds; the wounds were badly lacerated, and they saw many cases of tetanus.

Dr. GEORGE E. BREWER, of New York, saw no objection to using serum as a prophylactic in these cases. They used it at the Roosevelt Hospital in all cases of injuries to the hands and feet. Seven years ago they had sixteen cases of tetanus occur in about two months in the summer, following injuries of the hands and feet, and after that they made a definite rule in such cases to give an immunizing dose of antitoxine. Since they had adopted that practice they had never had a case of tetanus develop there.

Dr. DUDLEY P. ALLEN, of Cleveland, Ohio, said that they had had a number of cases of tetanus at the Lakeside Hospital in Cleveland from the use of toy pistols. In every case where the wound was opened early and packed the patient recovered. The patients whose wounds were not opened early and packed died.

The PRESIDENT said that there were certain sections of the country where tetanus was unknown, while in others a few miles distant the disease was rife; at least, the germs of the disease could be

found in the soil. For the past eleven years in his lectures he had warned his students about the dangers of unripe fruit as a possible source of tetanus.

Dr. ROBERT G. LE CONTE, of Philadelphia, said that some fifteen years ago tetanus developed after an operation by a colleague in Philadelphia. The disease developed on the eighth day following an operation on the perineum, and resulted in death. At the Pennsylvania Hospital they formerly had a number of cases of tetanus, but since they had made it a rule to give patients with injuries of the hands and feet, or patients with suspicious looking wounds, an immunizing dose of the antitetanic serum, they had not had tetanus develop.

Dr. MATAS said that at the Charity Hospital, New Orleans, there was no patient with railroad injury that was contaminated with dirt who was not given antitoxine or antitetanic serum. In answer to Dr. Bevan, as we approached the tropics the prevalence of tetanus was increased. It was less prevalent in northern than in southern latitudes.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Tuberculosis a Preventable and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. By S. ADOLPHUS KNOFF, M. D., Professor of Phthisiotherapy at the New York Postgraduate Medical School and Hospital, etc. New York: Moffat, Yard, & Co., 1909. Pp. xxxii-304.

In this interesting book the author continues his philanthropic work in behalf of consumptives. It does not purport to add to medical knowledge, but it deals with those aspects of tuberculous disease concerning which others than medical men need to be informed. This it does amply and in a thoroughly trustworthy manner, carefully avoiding the "scare" element. Every head of a family might profit by a study of it, and we even regard it as a duty for laymen who in any way may have to do with the fight of a community against tuberculous infection and with the management of the infected to make themselves masters of its contents. The study of it will prove no task, but a pleasure. While it is not faultless from the point of view of rhetoric, the style is clear and ready of comprehension. The actual errors are remarkably few; those that we have noted are "scillix" for *cilia* (page 17), "phagocytosis" for *phagocytosis* (page 18), "aerotherapeutics" for *aerotherapeutics* (page 35), and "formalin" for *formaldehyde* (page 46). In certain architects' plans the process of reduction has been carried so far that the lettering is almost illegible.

Textbook of Embryology. By FREDERICK RANDOLPH BAILEY, A. M., M. D., Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University), and ADAM MARION MILLER, A. M., Instructor in Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University). With Five Hundred and Fifteen Illustrations. New York: William Wood & Co., 1909. Pp. xiv-672. (Price, \$4.50.)

Without pretensions to originality, but aiming to give to the student a sound basal knowledge of em-

bryology as it bears upon the development of man, this work is to be cordially recommended. The teaching is clear, the subject matter is well arranged, the abundant illustrations where not original are well selected, and the short bibliography appended at the end of each chapter as reference for further study is well chosen. If we have any criticism, it is that the very abundance of the illustrations is apt to defeat the aim of the authors in similarly appending to each chapter a paragraph or two of practical suggestions. It is perhaps an old fashioned opinion on our part that a book intended to be used in connection with laboratory work should at most contain diagrams of the simplest type, suggesting the relationship of parts, rather than accurate photographs of the objects studied.

As intended for medical students, the chapters on histogenesis and organogenesis are particularly good. The chapters upon teratogenesis and abnormalities do not appeal to us as equal to the rest of the work. No better epitome of the subject has been brought together than is afforded in that masterly survey by Professor Marchand in Eulenburg's *Realencyclopädie*, and this obviously is made the basis of treatment in the work before us. All the same, the article in question is now many years old, and much of importance bearing upon the problem of teratogenesis has been published of recent years to which no reference is made. Nevertheless, it is a distinct step in advance to find this much recognition of teratogenesis in a student's textbook. On the other hand, the initial chapters upon the cell and the maturation and conjugation of the ovum and spermatozoon and the chapters upon embryology proper are well up to date and have the virtue for teaching purposes that a definite side is taken and definite views are inculcated where working embryologists are still at odds.

Deszendenz und Pathologie. Vergleichend biologische Studien und Gedanken. Von D. VON HANSEMANN. Berlin: August Hirschwald, 1909. Pp. x-488.

Of the Berlin pathologists, there has been no one who has followed up the fundamental work of the great head of that school in the study of the cell as the foundation of all pathology to the same extent as has von Hansemann. To him we owe the first thorough studies upon pathological disturbances of mitosis in tumor growths and the valuable conception of anaplasia, of biological change in the character of cells, as essential for the assumption of malignancy. In 1893 his *Studien über den Altruismus, die Spezifität und die Anaplasie der Zellen* presented him to us as a philosophical reasoner upon biological problems. This new volume, published in the Darwin centenary year, gives us the conclusions reached by a ripe and thoughtful student of medicine upon the problems of inheritance as elucidated by and as throwing light upon pathological conditions. It is a work full of interesting matter which deserves careful and leisurely reading, and from its very fulness it is not easy to criticize. There are indeed few if any among us who combine so intimate and thorough a knowledge of the data of morbid anatomy and histology with a familiarity, on the one hand, with the facts of zoology and botany and, on the other, with the abundant

philosophizing of modern German students of evolution.

The author himself is what may be termed a modern orthodox Darwinian with strong leanings to Weismannism, who can see little virtue in Neo-Lamarckism. It may indeed be urged that his endeavor to expose Lamarckian fallacy occasionally leads him to conclude that he has demolished an argument when he has merely presented an alternative hypothesis of equal validity. Admitting this, we find it impossible to read his chapter on Lamarckism without coming to the conclusion that as regards anatomical changes he has the right upon his side. We are inclined to think that he lays too little weight upon the evidence that chemical changes in the circulating fluids of the organism are able to modify the germ cells and thereby bring about change in the offspring. And we cannot accept so fully as he appears to do Weismann's hypothesis that there exists a germ plasma as distinct from a somatoplasm. Admitting this, we must also admit that the chapters upon Preformation, Species and Varieties, Variability, Altruism, Purpose (*Zweckmässigkeit*) and Orthogenesis, Adaptation, Epidemics, and Physiological Death contain much food for thought and time and again give a new significance to the data of disease. It is a work that adds to our conviction that to pathological and bacteriological studies we may look for the eventual establishment of an adequate theory of inheritance.

Larynx-tuberkulose und Gravidität. Von Dr. R. Sokolowsky in Königsberg. Halle a. S.: Carl Marhold, 1908. Pp. 28. (Price, 75 Mk.)

Sokolowsky gives a very good review of the literature of the influence of pregnancy upon tuberculous disease, especially of the larynx. He remarks that the complication of laryngeal tuberculous disease with pregnancy leads in most cases to the death of the mother, and that the mortality of infants born under such conditions is very high. As exceptions to this sad prognosis he gives tuberculous tumors of the larynx and cases of pregnant women in whom tuberculous disease appears in the last weeks of pregnancy. He is in favor of abortion, as early as possible, but says that tracheotomy is very seldom successful. He cites eighteen cases in which abortion was produced in pregnant women with laryngeal tuberculous disease, with fourteen recoveries. He finally calls attention to the often repeated statement that the tuberculous should not be permitted to marry, and adds that, if this warning is not heeded, artificial sterilization should be advocated.

Medicolliterary Notes.

The Reverend Dr. Elwood Worcester, in the *July Century*, begs suspension of judgment by physicians who have not thoroughly investigated his methods of healing. In his article, *The Emmanuel Movement*, he alleges the need of "an institute which shall include a small and beautiful psychopathic hospital and a school of sound learning to be attended by physicians, clergymen, psychologists, medical and theological students, and a select group of social workers." Who can suggest a suitable college yell?

The same magazine has *The Society of the Guillotine*, by Dr. S. Weir Mitchell, in which is carried out a Gilbertian idea commoner on the stage than in the short story. Why does the narrator find fault with another character for pronouncing query "queery"?

Miss Arabella Kenealy is fond of doctors as heroes for her novels. In her latest, *The Whips of Time* (Boston, 1909; Little, Brown, & Co.), she makes interesting use of the problems of heredity and environment, and furnishes an unexpected dénouement to an exciting tale. We object to the cosmic disturbance said to have attended the mental perturbation of one character; When Lord Anthony Burghwallis thought he had lost his sweetheart, we read that Nature shivered and the earth groaned on its axis. We think this most improbable.

Miscellany.

The First Episcopal Bishop in America a Physician.—In an address on the history of St. Andrew's Church, on Staten Island, which recently celebrated the second centenary of its existence, published in the *Grafton Magazine of Genealogy and History* for December, 1908, the Rev. Dr. Charles S. Burch touches on the services rendered that church during the Revolutionary war by the Rev. Dr. Samuel Seabury, afterward the first Episcopal bishop in America. In 1777 Dr. Seabury was attached to St. Andrew's Church, but he continued living and practising medicine in New York. A later occupant of St. Andrew's rectory, Dr. Richard Channing Moore, who subsequently became the second bishop of Virginia, was also a medical man, having practised as a physician in New York for four years before taking up the study of theology.

Histology of Egyptian Mummies.—Buffer writes in *The British Medical Journal* of April 24, 1909, that he has examined fragments of mummies of the xxi dynasty, dating from 1000 to 1050 B. C. It was found impossible to obtain good microscopical sections without first restoring, to some extent at any rate, their flexibility to the tissues, as their brittleness and hardness broke the edge of the microtome knives; even when a fair section was obtained, this invariably crumbled up when transferred to the slide. He found that by combining an alkaline salt such as sodium carbonate with a hardening reagent such as alcohol or formol, the mummified tissue placed in the mixture gradually swells up and resumes its former shape. The solution which has given the best results is composed of alcohol, 100 parts; water, 150 parts; 5 per cent. sodium carbonate solution, 60 parts. In many cases, however, such a solution softens the tissues too much, and more alcohol must then be added. After a period of time, the length of which depends on the bulk and nature of the tissue, the solution is replaced by 30 per cent. alcohol, and more alcohol is added day by day. After two or three days the softened tissue is transferred to absolute alcohol, then chloroform, paraffin, and cut. During these manipulations the tissue remains pliable, though it

shrinks a good deal. Very thin sections do not present any particular advantages, and he generally uses three divisions of Minot's microtome. Such preparations stain readily with the ordinary dyes, but for tissues such as muscular fibre teased preparations, after maceration in 1 in 10,000 caustic potash, give excellent pictures. He has prepared sections of muscle (voluntary, cardiac, and involuntary), blood vessels, skin, intestine, stomach, liver, kidney, bone, mammary glands and testicles, and the main characters of all these organs and tissues can be readily recognized. The striation of muscular fibre, the muscular coats, the submucous tissue, and occasionally even the glands of the intestines and the convoluted tubules, the straight tubules and glomeruli of the kidneys, the various layers of the skin can be identified with certainty. He believes that coarse pathological changes, such as inflammation, cirrhosis, tubercle, or cancer, could be demonstrated by this method.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending July 9, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Georgia—Macon.....	June 29-27.....	2	
Illinois—Chicago.....	June 19-20.....	2	
Illinois—Danville.....	June 20-27.....	3	
Indiana—Indianapolis.....	June 13-20.....	1	
Indiana—Muncie.....	June 19-26.....	1	
Indiana—South Bend.....	June 19-26.....	2	
Kansas—Kansas City.....	June 19-26.....	5	
Kentucky—Covington.....	June 19-26.....	2	
Kentucky—Lexington.....	June 19-26.....	5	
Kentucky—Paducah.....	June 19-26.....	2	
Louisiana—New Orleans.....	June 19-26.....	1	
Michigan—Grand Rapids.....	June 19-26.....	1	
Minnesota—Duluth.....	June 18-25.....	2	
Missouri—Kansas City.....	June 19-26.....	1	
Missouri—St. Joseph.....	May 29-June 5.....	3	
Missouri—St. Joseph.....	June 7-14.....	1	
Montana—Butte.....	June 18-24.....	2	
Tennessee—Knoxville.....	June 19-26.....	4	
Texas—Galveston.....	June 18-25.....	1	
Virginia—Lynchburg.....	June 19-26.....	1	Imported
Washington—Spokane.....	June 12-10.....	3	
Washington—Tacoma.....	June 13-20.....	2	
<i>Smallpox—Insular.</i>			
Philippine Islands—Manila.....	May 8-22.....	9	2
<i>Smallpox—Foreign.</i>			
Canada—Halifax.....	June 12-19.....	2	
Chile—Santiago.....	June 7-1.....		Present
China—Amoy.....	May 1-15.....		Present
China—Hankau.....	May 1-8.....		
China—Shanghai.....	May 1-15.....		
China—Tientsin.....	April 24-May 1.....	1	
Egypt—Cairo.....	May 21-27.....	2	1
France—Paris.....	June 5-12.....	5	
India—Bombay.....	May 25-June 1.....	15	
India—Madras.....	May 22-28.....	1	
India—Rangoon.....	May 15-22.....	4	
Italy.....	June 6-13.....	8	
Italy—Naples.....	June 6-13.....	25	4
Japan—Yokohama.....	May 1-5.....		
Java—Batavia.....	May 8-22.....	4	
Mexico—Veracruz.....	June 15.....		
Portugal—Lisbon.....	June 5-10.....	9	
Russia—Moscow.....	May 22-28.....	5	13
Russia—Odessa.....	June 5-12.....		
Russia—Riga.....	June 5-12.....	7	
Russia—St. Petersburg.....	May 22-28.....	19	3
Switzerland—Geneva.....	May 29-June 5.....	10	
Turkey—Constantinople.....	May 30-June 6.....		
<i>Yellow Fever—Foreign.</i>			
Barbados—St. Joseph Parish.....	June 5-22.....	3	
Brazil—Macao.....	May 22-20.....	2	
Brazil—Para.....	May 20-June 12.....	5	
Ecuador—Guayaquil.....	May 22-29.....	7	
<i>Cholera—Insular.</i>			
Philippine Islands—Provinces.....	May 8-22.....	40	32

Places.	Date.	Cases.	Deaths.
<i>Cholera—Foreign.</i>			
India—Bombay.....	May 1-June 1.....		3
India—Rangoon.....	May 15-22.....	7	
Russia—St. Petersburg.....	June 14-17.....	106	24
Straits Settlements—Singapore.....	May 8-15.....		6
<i>Plague—Foreign.</i>			
Chile—Antofagasta.....	May 29.....	5	In the lazaretto.
Chile—Iquique.....	May 30.....	10	In the lazaretto.
China—Amoy.....	May 1-22.....		Present
China—Chinchew.....	May 22.....		Epidemic
Ecuador—Guayaquil.....	May 22-29.....	19	
Egypt—Alexandria.....	May 29-June 5.....	1	
Egypt—Port Said.....	June 9.....	1	
India, general.....	May 15-29.....	6,920	6,033
India—Bombay.....	May 25-June 1.....	1-5	
India—Rangoon.....	May 15-22.....	6	
Japan—Kobe.....	May 28-June 5.....	3	1
Japan—Yokohama.....	June 1-7.....	5	3
Peru.....	May 22-June 5.....	13	7
Peru—Callao.....	May 22-June 5.....	1	1
Venezuela—Caracas.....	June 10-June 13.....	10	4
Venezuela—Caracas.....	June 14-21.....	3	1

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 7, 1909.

CLARKE, T., Passed Assistant Surgeon. Granted seven days' leave of absence from July 11, 1909, under paragraph 191, Service Regulations.

DYNAN, N. J., Acting Assistant Surgeon. Granted one day's leave of absence, June 30, 1909, under paragraph 210, Service Regulations.

FOSTER, M. H., Passed Assistant Surgeon. Granted one day's leave of absence, June 23, 1909, under paragraph 191, Service Regulations.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted two days' leave of absence from June 28, 1909.

HART, LASHER, Assistant Surgeon. Granted seven days' leave of absence from July 1, 1909.

HOLT, JOHN M., Passed Assistant Surgeon. Leave of absence granted on May 21, 1909, for one month from July 5, 1909, amended to read one month from July 26, 1909.

KERR, J. W., Assistant Surgeon General. Granted twenty-one days' leave of absence from July 12, 1909.

MACCAFFRY, W. B., Acting Assistant Surgeon. Granted one day's leave of absence in June, 1909, under paragraph 210, Service Regulations.

MCINTOSH, W. P., Surgeon. Granted two days' leave of absence from July 5, 1909, under paragraph 189, Service Regulations.

PREBLE, PAUL, Assistant Surgeon. Directed to report at the bureau upon special temporary duty.

RAMUS, CARL, Passed Assistant Surgeon. Granted one day's leave of absence, June 10, 1909, under paragraph 191, Service Regulations.

RODMAN, JOHN C., Acting Assistant Surgeon. Granted seven days' extension of leave of absence from June 17, 1909, on account of sickness.

SPANGLER, L. C., Pharmacist. Granted twenty-four days' leave of absence from July 1, 1909.

WALKER, T. DYSON, Acting Assistant Surgeon. Granted four days' leave of absence from July 6, 1909.

WARD, J. LA BRUCE, Acting Assistant Surgeon. Granted ten days' extension of leave of absence from June 15, 1909, on account of sickness.

WETMORE, W. O., Acting Assistant Surgeon. Granted one day's leave of absence, June 10, 1909, and five days' leave of absence from June 25, 1909, under paragraph 210, Service Regulations.

WILSON, J. G., Acting Assistant Surgeon. Granted five days' leave of absence from June 1, 1909, under paragraph 210, Service Regulations.

Resignation.

Assistant Surgeon Lasher Hart's resignation accepted by the President to take effect July 7, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 10, 1909:

BRATTON, THOMAS S., Major, Medical Corps. Ordered to duty as instructor at camp at Sparta, Wis.

DEAN, ELMER A., Major, Medical Corps. Ordered to Fort George Wright, Wash., for duty.

FORD, JOSEPH H., Major, Medical Corps. Ordered to duty as instructor at camp near San Francisco, Cal.

HUGGINS, JOHN B., Captain, Medical Corps. Granted leave of absence for one month.

MCCAW, WALTER D., Lieutenant Colonel, Medical Corps. Ordered to duty as instructor at camp at Antietam, Md.

MORSE, ARTHUR W., Major, Medical Corps. Ordered to duty as instructor at camp near San Francisco, Cal.

PHILLIPS, HENRY F., First Lieutenant, Medical Reserve Corps. Honorably discharge from the service of the United States, his services being no longer required.

PURVIANCE, WILLIAM E., Major, Medical Corps. Ordered to duty as instructor at camp at Sparta, Wis.

REYNOLDS, CHARLES R., Captain, Medical Corps. Ordered to duty as instructor at camp at Antietam, Md.

RHOADS, THOMAS L., Major, Medical Corps. Ordered to the Walter Reed Army General Hospital, Washington, D. C., for duty.

SMITH, WILLIAM H., First Lieutenant, Medical Reserve Corps. Relieved from duty at Vancouver Barracks, Wash.; will proceed to Fort Ruger, H. T., for duty.

STRAUB, PAUL F., Major, Medical Corps. Ordered to duty as instructor at camp at Antietam, Md.

USHER, FRANCIS M. C., Major, Medical Corps. Ordered to Jackson Barracks, La., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 10, 1909:

ALLEN, D. G., Assistant Surgeon. Detached from the *Bufalo* and ordered to the *Chattanooga* temporarily.

BASS, J. A., Acting Assistant Surgeon. Detached from duty at the Naval Hospital, Philadelphia, Pa., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

BOGAN, F. M., Surgeon. Commissioned a surgeon from September 2, 1908.

BUCHER, W. H., Surgeon. Transferred to the retired list from June 11, 1909, in conformity with the provisions of Section 1453, Revised Statutes; ordered home when discharged from treatment at the Naval Hospital, Mare Island, Cal.

BUTLER, C. ST. J., Surgeon. Commissioned a surgeon from September 19, 1908.

BYRNES, J. C., Medical Inspector. Detached from duty on board the *Tennessee* as fleet surgeon of the Pacific Fleet, and ordered home to await orders.

CURL, H. C., Surgeon. Detached from the *Buffalo* and ordered to the Naval Hospital, Canacao, P. I.

DOWNNEY, J. C., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the *Chattanooga*.

FRENCH, G. R. W., Acting Assistant Surgeon. Ordered to the Naval Hospital, Narragansett Bay, R. I.

GARRISON, P. E., Assistant Surgeon. Detached from duty as medical zoologist for the Bureau of Science, Philippine Islands, and ordered to Washington, D. C., via the *Buffalo*, for examination for promotion.

GATEWOOD, J. D., Medical Inspector. Detached from the Naval Medical School, Washington, D. C., July 15, and ordered to duty on board the *Tennessee* as fleet surgeon of the Pacific Fleet.

GRAYSON, C. T., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

HENEBERGER, L. G., Medical Director. Detached from command of the Naval Hospital, Newport, R. I., July 15th; ordered home, and granted sick leave for two months.

HOYT, R. E., Passed Assistant Surgeon. Detached from the *Chattanooga* and ordered to the Naval Hospital, Mare Island, Cal., for treatment.

LAW, H. L., Surgeon, retired. Detached from the Naval Recruiting Station, Boston, Mass., and ordered home.

LEACH, P., Medical Inspector. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to command the Naval Hospital, Newport, R. I.

PAYNE, J. H., JR., Passed Assistant Surgeon. Ordered to the Naval Recruiting Station, Boston, Mass.

PECK, A. E., Passed Assistant Surgeon. Unexpired portion of leave revoked; ordered to the Marine Recruiting Station, New York, N. Y.

Births, Marriages, and Deaths.

Married.

ARMSTRONG-CAMPBELL.—In Berea, Ohio, on Wednesday, June 23d, Dr. Robert James Armstrong and Miss Lucile Hulda Campbell.

BURKHEAD-ALDEN.—In Middleboro, Massachusetts, on Tuesday, June 29th, Dr. James Hodgson Burkhead and Miss Betty Alden.

DINNON-TRACY.—In Meriden, Connecticut, on Tuesday, June 29th, Dr. James Bernard Dinnon and Miss Dorothy Elizabeth Tracy.

GRINNELL-HARRIS.—In Lincoln, Nebraska, on Wednesday, June 23d, Dr. J. Beckley Grinnell, of Cairo, and Miss Cassie Leila Harris.

HUMMER-STACK.—In Chicago, on Thursday, July 1st, Dr. Leo F. Hummer and Miss Irene Stack.

JONES-MONEY.—In Friendship Heights, Maryland, on Tuesday, June 29th, Dr. T. Quinn Jones and Miss Ethel Mae Money.

PACKARD-ROBINSON.—In Sharon, Massachusetts, on Monday, June 28th, Dr. Loring B. Packard and Miss Gertrude Robinson.

WATERMAN-LOFTUS.—In London, England, on Friday, July 2d, Dr. Alonzo H. Waterman and Miss Cecilia Loftus.

WOLF-SELTZER.—In Philadelphia, on Wednesday, July 7th, Dr. Samuel Wolf and Miss Rosa Seltzer.

Died.

ANDREW.—In Navesink, New Jersey, on Tuesday, July 6th, Dr. R. G. Andrew, aged sixty-eight years.

ASSETTA.—In New York, on Tuesday, July 6th, Dr. Raphael Assetta, aged fifty-two years.

BEACH.—In Gloversville, New York, on Wednesday, July 7th, Dr. Eugene Beach.

BULKLEY.—In Sandy Creek, New York, on Friday, July 9th, Dr. J. Lyman Bulkley, aged seventy-five years.

BURTON.—In High Point, North Carolina, on Wednesday, June 30th, Dr. J. W. Burton.

CALDWELL.—In New York, on Tuesday, July 6th, Dr. Matthew Stuart Caldwell, of Far Rockaway, aged sixty-one years.

COLE.—In Baltimore, Maryland, on Tuesday, June 29th, Dr. Edward Z. Cole, aged fifty-five years.

DAWSON.—In Baltimore, Maryland, on Sunday, June 27th, Dr. Ezekiel Dawson, aged seventy-nine years.

EVERETT.—In Denver, Colorado, on Thursday, June 25th, Dr. Ambrose S. Everett, aged sixty-eight years.

FAIRFIELD.—In Delta, Colorado, on Sunday, June 27th, Dr. William J. Fairfield, aged sixty years.

GARRIGAN.—In Troy, New York, on Saturday, July 3d, Dr. Gerald Garrigan, of New York.

HOLMES.—In Fond du Lac, Wisconsin, on Monday, June 28th, Dr. Byron Holmes, aged sixty-four years.

JACKSON.—In Denver, Colorado, on Monday, June 28th, Dr. C. B. Jackson.

KEMBLE.—In Tidiotown, Pennsylvania, on Monday, June 21st, Dr. Charles Kemble, aged seventy-eight years.

KINKEAD.—In Poughkeepsie, New York, on Wednesday, June 30th, Dr. John Kinkead, aged sixty years.

LAYMAN.—In Tamaroa, Illinois, on Sunday, June 27th, Dr. S. J. Layman, aged seventy-three years.

LOEBER.—In New Orleans, Louisiana, on Wednesday, June 30th, Dr. Frederick R. Loeber.

MCCLURE.—In Williamstown, New Jersey, on Monday, July 5th, Dr. James C. McClure, aged thirty-five years.

MANNING.—In Manchester, Kentucky, on Thursday, July 1st, Dr. Hugh Manning.

MORRIS.—In Rochester, New York, on Wednesday, June 30th, Dr. Samuel Hall Morris, aged seventy-seven years.

MORSE.—In Tavares, Florida, on Tuesday, June 22d, Dr. Levi Morse.

PARRIS.—In Westport, Massachusetts, on Saturday, June 26th, Dr. John B. Parris, aged eighty-eight years.

ROBINSON.—In New York, on Sunday, July 4th, Dr. Frederick C. Robinson, aged sixty-four years.

WATLES.—In San Marcos, Texas, on Sunday, June 27th, Dr. J. H. Watles, of Kansas City, Missouri, aged twenty-eight years.

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Original Communications.

SOME CONDITIONS IN THE GROWTH OF TUMORS.*

By LEO LOEB, M. D.,
Philadelphia,

(From the Laboratory of Experimental Pathology of the University of Pennsylvania.)

Our knowledge of the conditions of growth of normal and of cancerous tissues is as yet incomplete. We might even say that we are only in the beginning of an exact investigation into the problems of the physiology of growth of vertebrate tissues. Notwithstanding this, it is perhaps not without value, if we attempt from time to time to co-ordinate the results of various researches in a certain field and to obtain some indication of how far the various facts seem to agree with each other and how a preliminary sketch of the completed structure might appear. Of the subjective and preliminary character of such a synthesis there can be no doubt; and only with these restrictions well understood will I enter into a rather incomplete discussion of the facts underlying tumor growth as they appear to me at the present time.

The tissues of the animal body have each one a definite energy of growth under normal conditions which varies in the case of various tissues and also to some degree in the corresponding tissue in different species of animals. In the large majority of tissues the potential energy of growth is much greater than the actual proliferation which takes place under the ordinary conditions of life. How much of the potential energy is transformed into actual growth depends to some measure on external conditions. Changes in external conditions may increase and decrease the energy of growth. The cancer problem can be formulated in the following way:

(1)—Under what conditions does a tissue assume an increased energy of growth? But this question is not sufficiently comprehensive. We notice, for instance, an increased growth energy under such external changes which lead to woundhealing. But in this case the additive proliferative power comes soon to rest. In cancer an indefinite growth is seen. It is therefore evident that one generation of cells must transmit the gain in energy to the following generations indefinitely and we are thus confronted with the second question in the cancer problem,—

(2)—Under what conditions does a hereditary transmission of an acquired increase of growth energy to the succeeding cell generations take place? And lastly, a third question arises in the cancer problem, which however, is perhaps less important than the two prior ones, (3)—Why do we find an infiltrating growth in cancer? Why do the proliferating cells penetrate into adjoining tissues instead of merely pushing them aside? This may be due to an inequality or irregularity in proliferation; it may also be due to chronic inflammatory changes and softening in the neighboring tissues, or to an increased proteolytic activity of the cancerous cells. However this may be, we shall here give our attention only to the first two questions which are of fundamental importance.

An increase in the energy of tissue growth can be accomplished by wounding the tissue. Such a regenerative proliferation, however, is rather slight and on the whole leads merely to the replacement of lost cells, and ceases as soon as the wound has healed. Separation of a piece of tissue from its normal connections is the cause of regenerative proliferation, but it is in itself quite insufficient to produce tumor growth. Ribbert's hypothesis which assumes as the basic cause of tumors such a disconnection between the cells which later become cancerous and the surrounding tissues, is therefore not an adequate explanation for tumor growth.

In order to obtain a postfœtal proliferation resembling tumor growth other factors have to come into play. Of what character these factors may be is indicated by the following experiments which I carried out in the course of the last two years.

If under ordinary conditions you make incisions into the uterus of the guinea pig the usual wound healing takes place without any noteworthy tissue proliferation accompanying it. If, however, the incisions are made during the first nine days after the rupture of a follicle, each cut, or almost each cut, leads to the formation of a tumorlike deciduoma. During the early period of its existence the corpus luteum secretes a chemical body which unites with the mucosa of the uterus. This chemical substance acts as a sensitizer; it sensitizes the mucosa, and if now an incision is made into the uterus, the freeing of the inner surface of the uterus from the tension of the surrounding tissue acts as an external stimulus which causes the sensitized tissue to react in quite a different way,—leading to the production of tumorlike new formations where under ordinary

*Read as a part of a "symposium" on Cancer, before the Philadelphia County Medical Society, April 28, 1909.

circumstances the uterus would only have shown processes of wound healing. In order to obtain a tumorlike growth one single factor does therefore not always suffice. We need a combination of at least two factors, namely, the action of a chemical sensitizing substance and of an external exciting cause which in this case is represented by a trauma. These facts we have to keep in mind, if we wish to interpret the origin of cancer. We must not look for one single cause, but a combination of factors has at least in many cases to be realized, before a malignant tumor is formed. There cannot be the slightest doubt that sarcoma may follow a trauma, but it does so only in a small minority of cases. The character of the external condition, the trauma, may be identical, but in one case the trauma affects an organ which is prepared to a special kind of response, an organ which is sensitized, hence a tumor follows; while in another case it affects a nonsensitized tissues and here no tumor is formed.

Experimentally we have therefore not yet been able to produce a cancer through trauma because of a lack of knowledge of the internal factors. These internal chemical sensitizing agencies which certainly play an important rôle in what is usually called predisposition are as yet unknown to us in most cases; we know more of the external factors and that the latter are of great importance in causing a tumorlike growth is very well demonstrated by the experiments just mentioned. But there exists in all likelihood a correlation between internal sensitizing and external stimulating factors of such a character, that the stronger the one set of factors is represented, the less is required of the second set of conditions, the stronger for instance the influence which is exerted by the external stimuli, the less the presence of sensitizing substances becomes a *conditio sine qua non*. Clinical observation revealed other very striking instances of the importance of external agencies in producing cancer. In this connection we have to attribute especial importance to cancer of the outer surface of the body. Here the field for aetiological observations is so much more favorable than in the case of tumors in internal tumors. And it is a noteworthy fact in the former the evidence of the action of external factors is undoubted. Hutchinson and others showed the significance of arsenic in the causation of carcinoma; the number of cases of cancer following the long continued use of Röntgen rays is so great that the results are almost as clear as in carefully directed experiments. It is equally probable that in xeroderma pigmentosum the light rays play a similar rôle as the Röntgen rays in the previously mentioned cases. We have every reason to believe that in cancer of the internal organs stimuli which in many cases have to act during an extended period of time, are of equal importance, and indeed the cases where long irritation preceded cancer of internal organs are well known, but not so clear in their interpretation, because the conditions which precede the formation of internal cancer are not usually accessible to our constant examination. We have to lay much more emphasis on positive observations, where preceding irritation as the cause of cancer can be proven or at least be made very probable than upon negative cases where similar

conditions may also have been present but without our knowledge.

Such external stimuli represent therefore one important set of factors in the aetiology of cancer. How do they act? I am very much inclined to believe that they have a direct stimulating effect upon certain tissue cells just as radium has been shown to cause at a certain stage a proliferation of the epithelium of the skin; and it appears to me much less likely that the stimulating action is only an indirect one being dependent upon preceding changes in the underlying connective tissues. But however that may be, in the case of carcinoma of the skin the proliferative energy of the epithelial cells is very much increased as a direct or an indirect result of external stimuli and such an increase is hereditary and transmitted to the following cell generations.

Of a similar character seems to be the action of ether upon certain growing tissues according to the observations of Reinke, who found, for instance, a marked proliferation of the cells forming the lens after injection of ether into the anterior chamber of the eye. A temporary proliferation of the epithelium of the skin is also produced through the stimulating action of certain fat soluble stains, as Sudan III.

The importance of external stimuli in causing proliferation of tissue has a still further significance; it does not only apply to normal tissues and to tissues in process of transformation into tumors, but also to cancer cells. A number of years ago I showed that it is impossible experimentally to increase and to decrease the energy of tumor growth. An increase can be produced through mechanical stimuli, for instance, a cut into the tumor or by pulling a thread through its entire diameter. In a similar way I found that in serial transplantations of tumors, usually an increase in the energy of growth, in the virulence of the tumor takes place in the course of the first few inoculations, likewise as the result of the mechanical stimulation connected with the experimental inoculation. On the other hand, I found that this does not apply to all tumors. Not all are equally affected by mechanical irritation. A mixed tumor of the mammary gland of a dog, for instance, could not be stimulated to increased proliferation by any means whatever. These facts have an especial practical significance and explain certain conditions met with in the operative treatment of tumors. We not rarely find that after an operation the tumor recurs with increased virulence, growing more rapidly and making more extensive metastases. After an exploratory excision the tumor begins sometimes to grow more rapidly. And I believe that an occasional transformation of a benign into a malignant tumor, after an operation, is due to the same factor, namely, to a mechanical stimulation and not to changes in the blood supply. Also the apparently *spontaneous* transformation of a benign tumor, as for instance, of a papilloma into a carcinoma, is not so very rare and is probably due to the cumulative action of certain stimuli. But as I mentioned above, the experimental investigation has shown that not all tumors are equally labile and certain tumors can be attacked without the danger of increasing their virulence, others however, not. At present the ex-

perimental pathologist is not yet able to supply to the surgeon definite information which permits him to foresee which tumor belongs to the one and which to the other group. On the other hand through the graded action of heat and of certain chemicals the virulence of tumors can be experimentally decreased and this fact may explain the observation that after extirpation of a primary tumor certain metastases may retrogress, or that after an exploratory laparotomy tumor nodules may occasionally disappear, as certain cases seem to indicate.

But as I stated before, the action of external agencies is only one set of conditions in the origin of cancer. The large majority of internal chemical factors is without doubt quite unknown to us at the present time. But of the importance of certain other factors we have a more definite knowledge. I have here especially in mind the influence of abnormalities in embryonal development which lead to the misplacement of tissue, and to the formation of teratomata and which cause such apparently insignificant conditions as pigmented moles. There can be no doubt that all these structures are especially liable to form cancer, and that the stimuli which in the case of normal tissues would be harmless lead here not infrequently to the formation of malignant tumors. In other cases such a transformation takes place seemingly without any external stimulus.

There are several ways in which the proneness of such tissues to increased proliferation can be explained: in the first place, stimuli are in all likelihood the more effective the more capable a tissue is to respond, the larger its proliferative power is and this is usually greater in the case of embryonal tissues; secondly, some of these structures through their abnormal size and position are more exposed to constant internal or external irritation and this may in part be responsible for their liability to become cancerous; thirdly, it is quite possible that in certain cases a tumor did not develop on the basis of a primary malformation as is usually assumed, but that a cause to a tumor growth was already present during prenatal life as the primary condition and that this led to a teratomatous formation and subsequently to a malignant growth, inasmuch as any stimulus which in the fully developed body affects a specific tissue and causes directly the formation of a cancer, affects in the embryo cells which have larger potentialities for development and which therefore at first develop into a teratoma, and only secondarily into a cancer. This explanation becomes the more likely, if we consider that experimentally it has been found impossible to produce malignant tumors through the implantation of embryonal cells or tissues.

However this may be, it is certain that there exists a connection between the development of cancer and embryonal malformation, even if, as seems indeed to be the case in a certain number of cases, the existence of errors in embryonal developments has been wrongly assumed, cases in which a more critical study reveals changes due to postnatal inflammatory or degenerative conditions (observation of R. Meyer: Certain Cases of Apparent Chorionepithelioma Malignum).

It is a well established fact that certain developmental abnormalities can be transmitted by heredity. It is therefore to be expected that tumors resulting from such embryonal malformations should likewise sometimes be hereditary. This is indeed the case. Heredity is one of the factors in the causation of cancer. Not only the hereditary transmission of anatomical developmental peculiarities but also of invisible metabolic, or functional conditions, may in all probability occasionally lead to the extraordinary frequency of cancer cases in certain families.

So far we have only taken into consideration the first underlying factor in the production of cancer, namely, the increase in the energy of growth of certain cells. In order that a tumor may grow indefinitely, make metastases in the same individual or may be transplanted through very many generations into other individuals of the same species, an hereditary transmission of the increase in the energy of growth must take place. Under what conditions such an inheritance is found, how it can be brought about experimentally—is as yet very little understood and only the beginning of a methodic study into these problems has been made. I have found that the increase of growth energy accompanying regenerative processes is not transmitted into the succeeding generations of cells; on the other hand at least a temporary transmission of the increase in growth energy acquired through stimulation of the lens of certain amphibia by ether takes place according to Reinke. Here is a gap in our knowledge which will have to be filled out in further investigations. From clinical evidence it seems, however, likely that as a result of long continued stimulation or as a result of a strong stimulus of short duration affecting especially sensitized tissues a hereditary transmission can be induced. This is one of the directions in which further work will have to be carried. And until this want is supplied we are not able to absolutely exclude another factor in the production of cancer, namely, the presence of microorganisms.

The presence of intracellular microorganisms could explain very well such a hereditary transmission in the increase in the energy of growth inasmuch as in this case the tumor cells themselves carry with them the agency which causes the stimulus to continuous proliferation. But on the other hand, as we pointed out above, it is by no means necessary to take refuge in such an interpretation for all cases and the appearance of cancer after the use of arsenic, after the long continued application of Röntgen rays and in certain other conditions is in all likelihood not due to the action of microorganisms. There are, however, other facts which can be cited in favor of the causative significance of microorganisms, as, for instance, the production of a sarcoma after transplantation of a carcinoma, first found by myself and by Ehrlich and Apolant independently of each other. As I have pointed out several years ago such a new formation of a sarcomatous tumor might be most easily explained through the transmission of a microorganism from the epithelial cells to the surrounding connective tissue. But even here other interpretations cannot be excluded.

There remains one interesting condition which seemed especially to call for the presence of microorganisms, namely, the endemic occurrence of can-

cer which is so very much more striking among animals than among man. But, as I have stated on previous occasions, even in the cases of endemic occurrence of cancer in cattle and white rats hereditary conditions cannot be excluded, and since then further investigation seems rather to sustain the importance of this factor; as the evidence stands at the present time it is very unlikely that such endemic occurrence is due to a real cage infection, to the direct transmission of an organism from the wall of the cages to the animals, or from one animal to another. I am, however, not yet prepared to deny that in certain cases microorganisms might not be responsible for the endemic occurrence of cancer in mammals or fishes in some way at present unknown to us.

We do not need to come to any premature conclusion in this matter, especially as this problem of the endemic occurrence of cancer is open to an exact experimental solution. But if microorganisms should be present in certain cases, they merely act by stimulating certain cells in a similar way as other physical or chemical agencies.

In this rather hasty review I have endeavored to bring before you what I consider the most significant facts in the investigation of cancer and to indicate in which direction I believe the solution will be found. I have confidence enough to express the opinion that the cancer problem has been solved partially. We have an exact knowledge of various factors which cause a tumorlike and cancerous growth, but very much remains to be done, and especially the theoretical and experimental workers in this field need the moral support of the physicians who are not only clinical investigators of the cancer problem but who also can influence public opinion and can thus indirectly supply the means without which the necessary investigations on a large scale cannot be carried out.

COLLES'S FRACTURE WITH SPECIAL REFERENCE TO THE LATERAL DEFORMITY.

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The past three years have afforded the writer an opportunity to treat and observe numerous cases of recent Colles's fracture as well as to study a large number of old cases the patients of which have applied for treatment by reason of desiring better results. This experience has led to the belief that, as a whole, Colles's fractures are treated in a routine fashion which is not justified either by the condition or by the results; or else that this most common of fractures presents unusual difficulties with which our present knowledge is inefficient to cope.

Some of the many adverse results met with are lateral deformity (the hand being abducted); lack of stability of the lower end of the ulna; forward and outward slumping of the ulnar head; ankylosis of the finger joints; rheumatoid arthritis of the wrist and fingers loss of a large part of the wrist motion, especially pronation and supination, and last and most important, partial loss of function. Scudder says that slight bony deformity is not incom-



FIG. 10.—Old Colles's fracture. Bones in perfect position when voluntarily held so, but head of ulna slumps, as shown in Fig. 16, when patient relaxes the hand.

patible with good functional use. This I have frequently observed and further, regretfully, cases in which absence of bony deformity was incompatible with good function. Such a case is herewith illustrated (See Fig. 1). This patient was a young man of twenty-four, who had received a fracture ten years previously and who at the time this picture was made suffered from lack of stability of the ulnar head. These facts certainly warrant investigation. There must be some explanation for one patient's recovering with a functionally perfect wrist, with bony deformity persisting, while another has poor function without bony deformity. An endeavor to supply this explanation furnishes the excuse for this paper.

When we recollect that it is only a few years ago, comparatively speaking, that Colles's fracture was commonly regarded as a dislocation of the wrist, it is not strange that there are still many of its peculiarities which we do not understand. Pouteau, in 1783, first described it as a fracture, but his view was not generally accepted, and even when Colles published a brief account of the condition in *The Edinburgh Medical and Surgical Journal* in April, 1814, no credit was given him except by the Dublin surgeons, who assigned to it his name. Dupuytren, in France, described the condition in 1820, and about 1830 all doubt as to its frequent occurrence was banished.

The typical form of the fracture presenting the characteristic silver fork deformity is the one described by these older surgeons. It consists of a transverse fracture of the lower end of the radius within about an inch of the joint, with displacement of the lower fragment upward and backward.

In conjunction with the anteroposterior displacement we now know that various other conditions often exist, but these could hardly be appreciated in the days before anaesthesia was introduced and the x ray unheard of. In fact there are so many deviations from the typical form that one is rather at a loss as to what may be called typical Colles's fracture nowadays. Eisendrath, in Keen's *Surgery*, mentions ten varieties, but as the differences between them are of degree rather than of character, it is not deemed advisable to do more than mention them here for fear that they may confuse, rather than clarify, the problem at hand. We shall, therefore, confine ourselves to a discussion of the variety of Colles's fracture wherein there is a transverse fracture of the lower end of the radius with displacement of the lower fragment upward and backward, elevation of the radial styloid, lateral displacement of the hand outward, and widening of the wrist below the site of the fracture. Such a case is illustrated in Fig. 2. Fig. 3 is a photograph of an old dissected specimen of a Colles's fracture of this type wherein the silver fork deformity has been reduced and the lateral deformity still persists.

Now, the points to which I desire to call your attention are, that in such a fracture, injuries to im-



FIG. 2.—Recent case of simple Colles's fracture, with fractured radial styloid. Note lateral elevation of hand and immobility of radial side of fracture, causing widening of wrist. Mutual relations of bones unchanged.



FIG. 1b.

portant soft structures occur simultaneously. That these injuries are to be taken into serious consideration as they increase the difficulties of reduction, prolong the period of healing and are a frequent cause of so called, but imperfectly understood, complications. They also necessitate splinting beyond the usual time limits, require great care in massage, delay the beginning of early passive movements, and make gradual resumption of function a necessity.

In order to develop this idea logically as well as to determine just which are the structures involved, let us first glance at some of the anatomical considerations. The lower end of the radius presents a concave surface fortified and enlarged on the outer side by the styloid process and on the inner side by the triangular, interarticular fibrocartilage which extends from the lower end of the radius to the tip of the styloid process of the ulna. Into this concavity is received the convexity formed by the scaphoid, semilunar, and cuneiform bones below. Anterior, posterior, and external lateral ligaments hold the articulating surfaces in apposition. Fracture of the radius, as we have seen, occurs above the attachment of these ligaments, and thus when the radial styloid is elevated lateral displacement of the carpus toward the radius must occur. The internal lateral ligament joins the ulnar styloid with the cuneiform and pisiform bones and the annular ligament, thus making it an essential support of the radiocarpal or wrist joint.

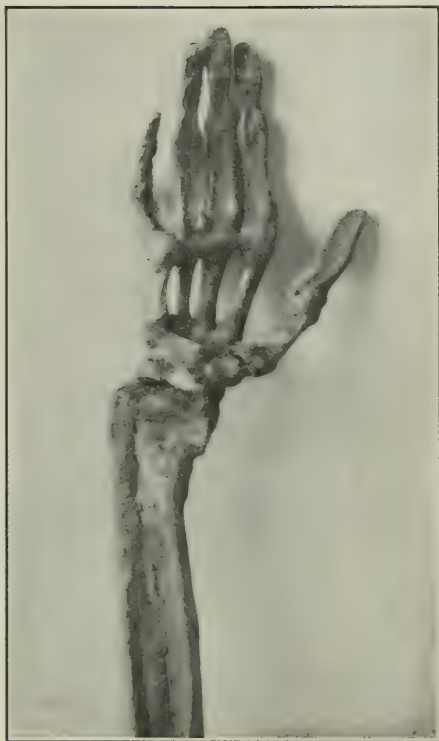


FIG. 3.—An old dissected specimen which illustrates the persistence of impaction and lateral deformity after the anteroposterior deformity had been reduced.

The inferior radioulnar articulation is a lateral ginglymus and it is held together by the anterior and posterior radioulnar ligaments and the triangular interarticular fibrocartilage. This joint is further strengthened by the pronator quadratus muscle. The attachments of the ulnar styloid are the internal lateral ligament and the triangular interarticular fibrocartilage of the wrist joint.

In the normal wrist the radial styloid lies at a lower level than that of the ulna when the hand is supinated. In pronation the head of the ulna must be used for this comparison. This fact is highly important in estimating the amount of lateral displacement as the radial styloid is elevated exactly in accordance with the extent of lateral displacement and impaction.

MECHANISM.

The patient falls on the extended hand. The thenar eminence is highest and strikes first, thus receiving the bulk of impact. The radius fractures at its frailest portion, and the outer border of the upper fragment is driven into that of the lower fragment, causing upward tilting and outward displacement of the radial styloid. The lateral pull exerts tension on the interarticular fibrocartilage which draws the ulnar styloid inward, and it in turn is held back by the internal lateral ligament. If force is

sufficient one of three things or all three together must occur. Ulnar styloid must be broken, which happens in about sixty per cent. of cases (Scudder); triangular cartilage must rupture; or internal lateral ligament. Just which depends largely upon a very little variation in the direction force is exerted. If the cartilage ruptures the styloid may remain intact. (See Fig. 4.) But if the cartilage holds then the styloid will yield and if it does the continued pull may suffice to tear the internal lateral ligament (See Fig. 5). Abundant references in the literature justify the acceptance of this theory of the mechanism. Dr. F. C. Clark in the *Providence Medical Journal* for May, 1908, has presented the facts in a most convincing manner and has supplemented his article by references and abstracts from the work of others.

Just which one of these three injuries is most likely to occur may be a question for discussion, but, if we accept Scudder's figures as to sixty per cent. of ulnar styloid fractures, then we must assume that the fibrocartilage remains intact in at least this percentage of cases, for if the cartilage ruptures it must, as a rule, do so before the ulnar styloid fractures. Thus, in the larger number of cases of Colles's fracture of the ulnar styloid, occurs, in a few cases rupture of the internal lateral ligament, and, in some cases, separation of the interarticular fibrocartilage.

In addition to these pronounced injuries, stretch-



FIG. 4.—Severe Colles's fracture. Marked lateral and anteroposterior displacement. Ulnar styloid intact. Triangular cartilage probably ruptured. Compare with Figs. 2 and 5.

ing, laceration, and tearing of the anterior and posterior ligaments of the wrist as well as of the same ligaments of the inferior radioulnar articulation take place. Of course, as may readily be understood, these latter ligaments are of less importance to the joint than the interarticular fibrocartilage so far as maintaining stability of the ulnar head is concerned, but they are ligaments, however, and if torn must be seriously considered as such.

To recapitulate, then, the probable immediate effects of a fracture with displacement of the lower end of the radius are: Lateral and upward displacement of the lower radial fragment with impaction of the lower end of the upper fragment into it. Fracture of the ulnar styloid, rupture of the ligaments of the wrist joint, and rupture of the interarticular fibrocartilage.

Now, the ulna, as you know, is held in place by means of these ligaments, and the effects of such a fracture are of importance in this regard. In the first place, separation of the interarticular fibrocartilage makes the connection less firm between the two bones. Rupture of the internal lateral ligament leaves the ulnar head less firmly supported also, and, even in fracture of the ulnar styloid, when the two ligaments remain intact, the lowering and displacement of the styloid fragment results in an essential lengthening of the internal lateral ligament. (See Fig. 1.) Usually, in considering a simple fracture one is not disposed to pay much attention to anything except the bone lesion, but, as this brief outline of the mechanism of Colles's fracture shows, there are also severe injuries to ligaments and to cartilage which are especially liable to occur in this particular fracture and which place it in a class by itself, for surely no other fracture is usually attended with such extensive damage to soft parts. To the writer's mind this fact places Colles's fracture in a unique position among fractures and serves to explain some of the difficulties attending its successful treatment.

In order to make this clear it is essential for us to consider the healing processes in these various structures. Abundant statements in literature as well as many personal experiences lead to the conclusion that repair by callous in a bone the size of the radius occurs in three to four weeks and that union is completed at the end of six weeks in practically all cases of Colles's fracture.

Ligaments, however, present a different phase. You are all familiar with the old remark of the laity "that some sprains are worse than breaks." J. D. Stewart, in Wood's *Reference Handbook of the Medical Sciences* for 1904, says that a torn ligament requires six weeks to heal and the good sense of the laity is thereby justified.

F. C. Wood, in Keen's *Surgery*, says, in discussing repairs in cartilage:

Aseptic incised wounds in articular cartilage, made with a sharp instrument so that no serious destruction of tissue takes place, may heal, at least in young persons, by simple fusion of the wound edges during the course of the growth of the cartilage, without evidences of inflammation or the production of granulation tissue. The cartilage cells do not show any evidence of unusual proliferation during the healing. The process consumes a very considerable time, even four to six weeks (Lefas).

Large wounds or ruptures in which there is considerable loss of substance are repaired by the production of soft connective tissue from the perichondrium, a process which

begins about three weeks after the injury. Occasionally, evidence of proliferation of the cartilage cells can be noted with the formation of projections from the edges of the wound into the granulation tissue from the perichondrium (Matsuoka). Small islands of cartilage are also occasionally found in the connective tissue scar. This germinal tissue is then slowly transformed into cartilage, though the metaplasia may be very incomplete if the wound is large (See Fig. 99). The healing is completed in from ten to twelve weeks. Fractures of bone of such a nature that the joint cartilage is included in the injury heal but slowly. Thiersch found no evidence of healing six weeks after an incision into the cartilage of a joint.

Injuries to the internal semilunar cartilage of the knee and to the joint cartilages in fingers, as you have all observed them in old "foot ball knees" and "base ball fingers," are convincing experiences of the extreme slowness of repair in cartilage. The remote effects of injuries to the soft structures in-



FIG. 1.—Colles's fracture. Two weeks after injury, and before impaction had been fully broken up under anesthesia; lateral deviation and widening marked. Anteroposterior deformity had been reduced before the picture was made. Mutual relations of bones unaltered. Note shortness of wrist compared with comparison with that of the radius.

volve two principal considerations, first, as regards treatment, and second, anatomical and functional result. This latter is largely, but not altogether, dependent upon the treatment. It is impossible to obtain a perfect cure in every case of Colles's fracture.

Ligaments and cartilage when only partly healed are more susceptible to strain than when uninjured. Frequently repeated slight strains produce a traumatic inflammation that closely simulates rheumatoid arthritis and is often mistaken for it. Muscles and tendons atrophied from disuse are more easily strained than active muscles. Strained muscles and tendons cause a dull, annoying ache, and if this is accompanied by swelling and some diminution in joint mobility an incorrect diagnosis of rheumatism

is frequently made. The wrist and finger joints when swollen from the original traumatism are re-injured and caused to swell, if used too early, and adhesions frequently result from this cause.

If use beyond the strength of newly healed ligaments, cartilage or tendons is permitted these structures are also liable to be stretched or at least not to regain their normal tone and a general relaxation of the entire joint follows, causing separation of the ulna and radius, lengthening of the internal lateral ligament, and slumping of the ulnar head, loss of pronation, and supination frequently results from attempts at these movements before the bruised cartilage has had time to recover.

The effect on treatment is apparent. Protection must be continued for a longer period of time than when these structures are not injured. Passive movements must not be attempted too early, and resumption of function is to be *gradually* undertaken, and no effort that tires or strains the wrist is to be made.

TREATMENT.

The first requisite in treatment is efficient reduction of deformity, and for this an anæsthetic is usually necessary. One must remember that impaction is to be broken up and force is required. The old time viselike handshake with a sudden pull and twist is spectacular and should be dispensed with in these days of x rays and accuracy. No set rules can be given but with as little manipulation as possible and with the patient fully relaxed, the fragments are to be worked back and forth in every direction till the wrist assumes its normal appearance and can, if possible, be made to stay so when not supported. Do not trust to splints to forcefully maintain in position an incompletely reduced fracture—so much pressure is detrimental to the healing processes and a frequent cause of œdematous swelling and subsequent so called "rheumatoid arthritis" and other complications.

The form of splint to be employed is not of so much importance as the *way* it is employed. The purpose is to immobilize the fracture and provide support for the injured wrist, hand, and forearm, and the simplest way of accomplishing this result is, as a rule, the best. Personally, I employ a single palmar splint, well padded, extending from below the elbow to a little beyond the fingers. This splint is padded thickly with gauze just behind the palm and thus maintains the wrist in slight palmar flexion, which is just the opposite position to that in which the injury was produced and is also the most comfortable position for the patient. A fold of this gauze pad is extended around the ulnar side of the wrist and is a guard against slumping of the ulnar head. In the very severe cases a strip of adhesive plaster around the wrist outside of the gauze pad is valuable in holding the ulnar head more securely. The double splint has many advocates, and provided it is not too tightly applied is a good one to use. I feel, however, that complete rest for the part cannot be well secured with a short splint which terminates at the palm, and that the longer one should be used for the first three or four weeks at least. A frequent cause of œdematous swelling of the hand and fingers with subsequent adhesions is a short splint and short sling. The sling should extend from behind the elbow to beyond the fingers to support the entire

forearm evenly and firmly. For the first forty-eight hours it is well to wet the whole appliance with water and keep the parts constantly moist as this lessens the swelling and pain.

The length of time splints are to be worn depends upon the extent of the injury and upon how much one credits the idea that the injury to the soft parts is of importance. At any rate we must all agree that protection ought to be continued till healing of the original injury is complete. That is, till the bone has time to unite, the ligaments and cartilage time to heal, the ligaments time to regain their tone, and the muscles and tendons time to recover from their atrophy of disuse. Many have endeavored to hasten this process by persistent passive movements, but because this can not be accomplished without interfering with the healing of ligaments and cartilage this plan is not rational in the cases of displacement. If, therefore, there is but a slight fracture with no displacement the splints should be retained for three or four weeks, and return to use gradu-



FIG. 6.—Leather and steel wrist support; palmar and dorsal views.

ally made with some protection to the joints either by means of a flannel bandage, adhesive strapping, or other means. The writer uses for this purpose the exceedingly ingenious appliance devised by Dr. A. G. Cook, which is herewith illustrated (see Fig. 6). It is a simple leather wristlet extending from the palm half or two thirds way to the elbow. It is made over a plaster model and is reinforced with a light piece of steel in the palm, and is made to lace so that it may be removed at will, and thus one may gradually lengthen the periods when the wrist is used without protection. This avoids any sudden changes and favors an uninterrupted recovery without delays for traumatic inflammation to subside.

In the more severe cases, however, where there is accompanying injury of the soft parts the immobilization by splints must be continued for a longer period of time, for the reasons we have already studied. It is manifestly impossible to determine the exact amount of ligamentous and cartilaginous destruction in a given case, but in view of the mechanism of this fracture as we have studied it, we may assume that in cases of moderate displacement there

is some ligamentous injury, and in cases of extreme displacement probably some cartilaginous injury as well. Wherefore immobilization should be continued for at least six weeks in the moderate cases and for eight weeks or longer in the more severe cases, as a rule. Early passive motion in these cases is specially contraindicated because the stretching of the torn ligamentous fibres thus induced is particularly injurious. Gentle massage of the skin is indicated, however, where there is the least sign of oedematous swelling and it is, thus, possible to keep up the nutrition of the part and hasten healing.

After the removal of splints the leather and steel wristlet is of the greatest advantage in these cases as a support to the long disused muscles and tendons, for it allows the *gradual* return to full usefulness which is of the utmost importance in securing a perfect result.

The length of time the wristlet must be worn depends upon one guide and that is the period when the wrist can be used painlessly without it. This the patient can decide for himself better than the physician.

CONCLUSIONS.

1. Typical Colles's fracture presents an antero-posterior and lateral deformity of the lower end of the radius with impaction of the upper into the lower fragment.

2. In severe cases this is complicated by fracture of the ulnar styloid and injury of the ligaments and cartilage.

3. Treatment demands efficient reduction of the bony fragments in the beginning. For this an anæsthetic is desirable, because impaction must be broken up to avoid lateral deformity and widening of the wrist.

4. Restoration of the functional and anatomical integrity or the wrist demands immobilization till the bone is united. This period is three to five weeks.

5. Protection of the joint must be continued till healing is completed and all of the original traumatic inflammation has subsided. This period is six to eight weeks when the ligaments are injured and eight to ten weeks when the cartilage is injured.

6. Gradual return to use favors a perfect result and avoids unnecessary complications and sequelæ.

179 ALLYN STREET.

LOOSE BODY vs. SESAMOID BONE IN THE OUTER HEAD OF THE GASTROCNEMIUS.

Differential Diagnosis by Radiograph. Report of Case.

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CASE No. 1169.—Mr. B.; Æt. forty-eight; married; occupation, switchman.

Previous history: In January, 1908, patient fell from the top of a box car, and injured his left knee. The history of this injury was rather indefinite as was also the subsequent history up to the time that he applied to Dr. Allen L. Porter for relief from the following symptoms: He could not walk down stairs or down hill with comfort; at certain times the knee would not move and became locked; sometimes if he moved the leg suddenly he would be unable to move it for a few moments.

Status præsens: He presented a left knee that was somewhat enlarged with a painful area at and to the left of

the patella. He used a cane in walking. His symptoms were practically the same as stated before.

Clinical diagnosis of loose body in joint was made.

Radiographs showed a foreign body in relation to the outer condyle of the femur. The density of the shadow, however, more clearly approximated the density of bone tissue and its fixed position and similar shadows on several different occasions lead me to the conclusion that this was a sesamoid in the outer head of the gastrocnemius rather than a loose body.

In an attempt to find literature upon this subject of sesamoid in the gastrocnemius, I have been dis-



Sesamoid bone in the outer head of the gastrocnemius.

appointed by its meagreness. Salmonson (*Archives of the Röntgen Ray*) says that it is usually possible to distinguish between a foreign body and this sesamoid by making also a skiagraph of the sound knee as usually sesamoids exist bilaterally. He advocates the injection of oxygen into the knee joint as the radiograph taken in this manner would readily show whether the foreign body was within or without the knee. Wildt (*Fortschritte auf dem Gebiete der Röntgenstrahlen*, 1899) reported and presented pictures of several cases of fabella. Pfitzner (*Ibidem*, iv, No. 52) reported a list of sixty-eight names of surgeons who had described this sesamoid bone.

Regarding the frequency of this condition, Orton, of London, asserts that out of several hundred negatives of knee joints of this condition that not more than seven were found. He therefore believes that sesamoid bones do not occur with comparative frequency in the outer head of the gastrocnemius in comparison with the other inconstant sesamoids. Wells (*Archives of the Röntgen Ray*, 1907) insists that it is more than possible for one to mistake this normal radiographic shadow for an operable condition and commit the terrible blunder of cutting into a knee joint to remove a foreign body that did not exist. He mentions the fact that these little bones always occur as planoconvex bodies with the plane side toward the knee joint, and has seen none that

did not follow this rule. *Gray's Anatomy* (p. 295, 1887 edition) speaks of the sesamoid bone that is found in the outer head of the gastrocnemius in referring to sesamoid bones of the tendons of the leg. Cunningham's *Anatomy* quotes Thilenius in referring to the origin and growth of sesamoids as follows: Sesamoid bones are the persistence of cartilaginous elements which have phylogenetic interest. Thomas Dwight in his monograph entitled *Variations of the Hand and Foot*, says: A sesamoid bone under normal circumstances is laid down in cartilage as distinctly as any other bone and deserves to be considered as a regular and typical part of the skeleton. Bones sometimes called sesamoids are beyond question bones to be considered as typical parts of the wrist and ankles, as for instance the tibiale externum of comparative anatomy but more commonly known among us as the sesamoid bone in the tendon of the tibialis posticus. What is a bone of the skeleton in certain animals may be merely a swelling in a tendon in others, apparently represented in some cases merely by an accumulation of fibrous tissue, or again it may be well developed bone. The sesamoid bones of the phalangeal joints and those of the interphalangeal joints and the corresponding ones in the foot are much more frequent in the foetus than in the adult. At least more sesamoid bones have no particular function.

It has been very difficult for me to find any references in the literature at my command regarding the frequency of the sesamoid bone in the outer head of the gastrocnemius. These references of Dwight pertain to his discussion of sesamoid bones in the hand and foot, but may as well apply to sesamoid bones in other parts of the body. I have found only one reference to the treatment of this condition.

Woolf (*Berliner klinische Wochenschrift*, March 3, 1904) tells of a patient who presented all the clinical evidence of loose body in the knee joint. The x ray negatives of the joint seemed to confirm this clinical history. The x ray showed a body of the size of a cherry pit in the joint. On operation this body was not found but the symptoms disappeared and the results were so satisfactory that he recommends the removal of these sesamoid bones. Woolf states that a subsequent study of this case with the x ray revealed the fact that the cherry pit shadow was really a sesamoid bone in the outer head of the gastrocnemius.

621 COMMERCE BUILDING.

THE TEACHING OF TROPICAL MEDICINE OUTSIDE OF THE TROPICS.*

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A few years ago it was my good fortune to be advised by Professor Welch as to an advantageous course of work for one to pursue who desired to

prepare himself for medical work in the tropics; which, expressed in a few words, was to acquire a practical grasp of the problems of clinical bacteriology and to obtain a working knowledge of animal parasitology—the clinical experience to be gained later in the tropics.

The value of such advice must be apparent to those who have been in the tropics where the practitioner versed in laboratory technique not only has a local reputation superior to that of the purely bedside diagnostician but in addition, as regards an international reputation, has the advantage entirely in his favor.

Before outlining the course which appears to me advisable for one to pursue in the study of tropical diseases it would seem best to bring out certain considerations which bear distinctly on the subject under discussion. In the first place it must be recognized that the majority of diseases common to tropical pathology are more or less common to temperate climates, with this distinction, however, that they tend to show anomalous features. Again, that the overshadowing trio, tuberculosis, syphilis, and typhoid fever, must be kept in mind even more prominently than in temperate climates where there are fewer similar diseases to cause confusion.

The most conspicuous feature of tropical pathology is the great incidence of diseases due to animal parasites. These are favored, not only by reason of less inimical temperature environment for the particular parasite, but also because in the tropics insect life flourishes and the opportunities for the transmission of diseases requiring intermediary hosts are greater. As regards bacterial diseases it would seem that the more favorable conditions for the growth of saprophytes should be distinctly of importance in checking the development of the more delicate pathogenic organisms. The greater importance of bacterial diseases in the tropics must, therefore, be a matter of neglect of hygienic principles rather than of a favoring climatic environment.

The work of Strong, Musgrave, and Clegg in the Philippines has shown that symbiosis is a factor to be taken into account in the production of pathogenic manifestations; now, is it not reasonable to conjecture that many of the unexplained phenomena of various diseases are due to this matter of association between animal parasites and bacteria—the resulting clinical signs differing from those usually recognized as belonging to the uncomplicated bacterial or animal parasite infection. With these general considerations in mind it would seem advisable to treat the subject of a suitable course in tropical medicine, when such a course is not given in the tropics, under three general heads: 1, laboratory instruction; 2, clinical teaching; and 3, didactic lectures.

Laboratory Instruction.—This should embrace practical work in bacteriology, pathology, animal parasitology, and chemistry. In bacteriology the training should be in the direction of having the student become familiar with the normal bacterial flora of the parts of the body and the excretions and secretions usually studied in disease. The smearing of agar or glycerin agar plates with the material to be examined gives only superficial colonies which can be easily studied and isolated in pure culture without the confusion due to deep colonies, as is the

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case with poured plates. To those who have not done much work of this kind the limited number and the constant appearance of certain species from material from nose, throat, faeces, pus, skin, etc., is very striking. If the student is familiar with normal findings the abnormal ones give little trouble.

In culturing faeces it is advisable to make use of some special plating medium. Of these lactose litmus agar is very satisfactory and easily prepared or, with a little experience, that of Endo. Both of these media aid in the isolation of colonies by their giving variation in color. The brilliant green medium of Conradi, so useful in the isolation of typhoid colonies, will probably be found of great value in tropical work by reason of its restraining power over cocci and colon bacilli.

It is very important that the making of media be taught in a practical way and, while the methods for making media as prescribed for water analysis are unnecessarily exact, yet, in one respect, equal care is necessary in clinical bacteriology—that is, in adjusting the reaction of media. Experience with students has taught me that variation from optimum reaction is often the basis of failure in culturing bacteria. The use of litmus milk and the simple Durham fermentation tube with glucose and lactose bouillon are of the greatest practical value in determinative bacteriology. Familiarity with the Gram method of staining and the use of the hanging drop preparation should be demanded. Now that animals can be easily immunized and kept at hand to furnish immune sera and when equally easily obtainable are dried immune sera perfect familiarity with the technique of both macroscopical and microscopical methods of agglutination should be required of the student. With a little practice the necessary technique is easily obtained.

With a coccus we can practically gain sufficient information from the smear direct from the material, stained by Gram, followed by culturing on agar or some special serum medium and dispense with the more elaborate outlay of media so necessary for the differentiation of the nonspore bearing bacilli. Hemolytic characteristics and carbohydrate fermentations in the differentiation of cocci are of questionable practical value. Differentiation by gelatin liquefaction is of great value, but difficult of application in the tropics. Bacteriology should appeal to the student as a real factor in diagnosis and not as something more or less theoretical. It were better to simply isolate and become familiar with a streptococcus plated out from the nasal mucus and a colon bacillus from the faeces than to run through fifty organisms in pure culture on a monotonous succession of media.

In pathology the training should start with the proper methods of making and staining blood smears. It is astonishing the frequency with which men presumably well trained fail in this respect. The matter of artefacts and unusual appearances is sufficiently frequent in good preparations and in poor preparations is a frequent explanation of the preliminary note which is not followed by succeeding reports. Differential counts are of great value in tropical work, and differentiation of the normal and pathological blood cells should be thoroughly taught. The differentiation of the large mononuclear

and transitional (the macrophages of Metchnikoff) from the large lymphocyte may not be of peculiar value outside the tropics, but when malaria, trypanosomiasis, and amebiasis are involved such differentiation furnishes a useful diagnostic point. Romanowsky's method of staining is an absolute necessity in tropical work, and checked by the reliable hæmatoxylin and eosin staining gives one adequate means for the study of blood films. Where malarial cases are not at hand to furnish smears for the study of chromatin staining, which, however, are satisfactorily replaced by specimens sent from the tropics, the blood of rats showing *Trypanosoma Lewisii* answers well. This infection is very easy to keep up in the laboratory. As more closely resembling malaria an infection with *halteridium* is a good substitute—more nearly resembling malaria, however, is *proteosoma*, which infection is easily kept going in canaries. The infection with *Spirochaeta Duttoni* is also easy to keep up in a laboratory. Fresh blood preparations are of great importance, but more calculated to lead to errors of observation than stained films. The blood in malarial, trypanosome, and spirochaeta infections should be especially studied with fresh specimens. With spirochaetae the dark ground illumination is a desideratum. It is an easy matter to study amoebæ, ciliates, and intestinal flagellates by means of cultures, but amoebic and flagellate infections are now so common since our occupation of the Philippines that the more satisfactory material from a case can be readily obtained. The student should be taught some simple method of preparing tissues for paraffin imbedding. By affixing sections to cover glasses or slides these may be easily stained in various ways. In the tropics one should be prepared to stain sections not only with hæmatoxylin and eosin, but with thionin, Gram's method, acid fast staining, and Van Gieson's stain. The staining methods of Wright and Giemsa give good results. Now that certain flagellates are of such importance we should understand Levaditi's method.

In animal parasitology training in recognizing intestinal ova is easily accomplished by having formalinized faeces sent from tropical countries. The ova found in the faeces of various animals, especially the dog, cat, and rat, however, provide teaching material which is almost similar. The method of teaching animal parasitology in our laboratory as introduced by Dr. Stiles gives training only inferior to that obtained at human autopsies in the tropics. Dogs and cats after being killed at the municipal pound are autopsied and the parasites studied in the fresh state. The most prolific animal in interesting parasites is the rat. At such an autopsy we are not only able to study the infesting fleas, intestinal parasites, and embryos of trichinella but as well to learn the appearance of the normal rat so that a plague rat would be recognized by the subcutaneous injection, mottled liver, infiltrated neck glands, and pleural effusion. Fleas, bedbugs, and lice are best studied by keeping them in a test tube until the contents of the alimentary canal have been evacuated, and then to drop them into hot seventy per cent. alcohol. They are then transferred to acetone and afterward to xylol and then mounted in balsam. The generic and species characteristics can then be satis-

factorily studied. For ticks it is best to give a preliminary treatment with caustic potash solution before proceeding as stated. For the study of mosquitoes it is best to collect larvæ from the pools, and place them in large aquarium jars covered with gauze. The insects can then be observed and either studied or dissected after they emerge from the pupal state. It is astonishing in how short a time students are able to distinguish larval characteristics. The architecture of mental plates and the syphonic variations are so much easier to recognize than scale characteristics, that it is a satisfaction to demonstrate larvæ to a class.

In the English schools of tropical medicine the chemical side of the laboratory work is less dealt with than the animal parasitology and bacteriological phases. In my opinion, with the development of simple methods for determining nitrogen eliminated as ammonia, of bile pigments, etc., and especially of reactions of the nature of the Cammidge reaction, many valuable diagnostic aids may be obtained. More expeditious methods of determining the digestive functions by microscopical examination of the fæces are more or less at the disposal of one trained in the microscopical appearances of fæces. Schmidt's fermentation apparatus for determining errors in carbohydrate digestion is a method which should prove of value in the intestinal derangements of the tropics.

A feature of laboratory instruction, considered by our students as of peculiar value, is the holding of frequent examinations in microscopical diagnosis. With a series of microscopical preparations, embracing ova of parasites, various intestinal parasites, important insects and arachnoids, stained blood smears, pathological sections, bacterial preparations, and various artefacts, we have material to make one exercise common sense. The consideration of micrometry and the question of the limitations of the findings in certain material make one exercise judgment. The papers with the written diagnoses are handed in—the errors in nomenclature or terminology corrected, and a brief talk given as to justifiable and inexcusable errors in diagnosis.

CLINICAL TEACHING.

The idea prevails generally that ward class work is only practicable in the tropics or in such hospitals as the Seaman's Hospital in London or the one in Hamburg where many cases of tropical disease, among the sailors of the steamship lines going to the tropics, are treated. While it is undoubtedly an advantage to have a class study an actual case of a tropical disease yet, if such cases are not at hand, the lack of such facilities may in great part be compensated for by studying cases common to the temperate climates which are intimately connected with the differential diagnosis of the tropical disease in question.

A case of alcoholic neuritis when studied from the standpoint of the points of difference between it and dry beriberi will give the student almost as much information as the going over of an actual case of beriberi. A case of acute nephritis, when gone over from the standpoint of differential diagnosis, is only little less instructive than where the case is really one of wet beriberi. Various conditions giving en-

larged livers can be used in clinics on liver abscess—large spleens to bring out the points of differential diagnosis in connection with kala azar. Various tuberculous troubles may resemble Malta fever or quotidian types of malaria. A case of venereal adenitis may serve for a plague clinic, and in the various lesions of syphilis we have clinical material to utilize in bringing out the differential diagnostic points between the various tropical infectious granulomata and those of this widespread infection. A case of ptomaine poisoning gives a perfect picture of a mild case of cholera. When we consider that cases of dengue are frequently sent to hospitals by those unacquainted with the disease with diagnoses of influenza, measles, scarlet fever, etc., it will be readily understood that cases with which to demonstrate the clinical picture of dengue are not lacking in the cities of the United States. A case of heat stroke has striking points of resemblance to certain cerebral types of pernicious malaria. In our Southern cities many of the tropical diseases, as dengue, uncinariasis, and malaria may be utilized directly.

DIDACTIC LECTURES.

In didactic lectures great stress should be attached to questions of geographical distribution and epidemiology. As with clinical teaching so in the lectures should points of resemblance of a tropical affection to some ordinary disease be brought out in contrast. Again, instead of detailing innumerable symptoms, the majority of which will more or less answer for any of a number of indispositions or diseases, it would seem advisable to pick out the five or six most characteristic features in the disease to serve as a solid framework for the students' conception of the disease. Let a student fix in his mind the sudden febrile onset, the anxious countenance shortly followed by a clouding of consciousness and thickness of speech similar to that of a drunken man, with the appearance on the second or third day of exquisitely tender lymphatic glands, and he has a picture of plague much more than if the hundred and one various minor features of the disease were detailed out to him in monotonous succession. While the epidiascope and projection apparatus are invaluable in lecturing yet there are such things as word pictures. Bring out the fact of a mouth so sore that the lightest wine burns like brandy, then touch on the ulcerations of the mouth, the burning in the gullet on swallowing, the gastric and intestinal distress, and finally picture the repeated replenishing of the bed pan with a copious, putty colored, pultaceous, fermenting mass of faecal matter, and the most inattentive student grasps the essential features of sprue. Present to the class a picture of a disease commencing with an erythema of skin surfaces exposed to the sun, gradually going on to an ichthyotic condition, of a spruelike condition, and finally of one partaking of the characteristics of a melancholic general paresis, and we have given a conception of the disease pellagra. It is a matter of the greatest importance in lecturing on diseases which, to the one who has not been in the tropics, appear to have rather an abstract value, to bring out amusing incidents or ludicrous contrasts. In lecturing to the class on Malta fever I referred to a conversation I had with Sir Patrick Manson in 1905 relative to a

number of cases of this disease which had appeared in 1804 on the U. S. S. *Chicago*. The discovery of the probable cause in goats' milk had just been announced, and Sir Patrick assured me that if we had looked into the matter of ætiology carefully we should probably have found that goats' milk was at the bottom of the outbreak. It was only necessary to suggest to the class the utter improbability of a lot of sailor men going ashore, in a European seaport, to revel in goats' milk, to thereby ineradicably fix in their minds the most important point in the epidemiology of Malta fever.

That this outline of a course in tropical medicine is entirely practicable is shown by the fact that it represents almost in detail the course in tropical medicine given at the United States Naval Medical School. In the work connected with bacteriology and animal parasitology it is certainly as thorough as that given at the London School of Tropical Medicine. In a recent article on the need for a school of tropical medicine in the United States (*Journal of the American Medical Association*, April 3, 1909, Tobey, Need for a School of Tropical Medicine in the United States) the statement was made that the taking of the course at the London School of Tropical Medicine by surgeons of the army and navy of the United States was because tropical medicine was "not taught in this country with that particularity needed for success." While agreeing with the author in other respects I should prefer to assign as the reasons for the taking of the course at the London School of Tropical Medicine the desire to take advantage of the teaching of that leader in tropical medicine, Sir Patrick Manson, and of the clinical material at the Seaman's Hospital, rather than to those given in the article.

THE TREATMENT OF DISEASES OF THE INTESTINE IN THE GRÆCO-ROMAN PERIOD.

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If one goes over the texts of the ancient writers, it will at once be seen that the physicians of the Græco-Roman period were not far advanced in their knowledge of intestinal diseases. This could not be otherwise on account of their limited knowledge of physiology and anatomy. They did not possess that precious privilege of dissection which was enjoyed by the physicians of the seventeenth and eighteenth centuries. Their medicine was greatly embarrassed by the deceptive aid of philosophy, and even when they attempted careful observation of their patients, they gave themselves up to purely hypothetical theories.

However, one cannot help being interested in the researches that were undertaken by the great practitioners of this time. The school of Hippocrates and its direct successors (particularly Diocles), the school of Alexandria, Asclepiades, Themison, Soranus, Aretæus, and Galen all contained distinguished observers, whose clinical judgment often resulted in the discovery of exact facts. Their descriptions of certain diseases are occasional-

markedly correct, as for example those of cholera, dysentery, and ileus, which have been left us by Aretæus and Cælius Aurelianus. The study of intestinal diseases, which was extremely limited by Hippocrates and his direct followers, became markedly improved by the school of Alexandria and the methodists, among whom I would place Asclepiades, who was the founder of their school. Aretæus and Cælius Aurelianus have extremely well described what their contemporaries knew in this branch of medicine.

Galen, who was the restorer of humorism, has only given a few short pages to diseases of the intestine, and this was only a summing up of the knowledge of his predecessors without adding anything personal to it. But he has the merit of clearly putting forth the principal ideas of the physicians of this time, especially those of the humorists.

After Galen, the study of the diseases of the digestive tract went into decline just as did the rest of medicine. There is, however, a writer that it is quite impossible not to consult; I refer to Aetius, not on account of his personal merit, but because of the fragments he has preserved for us from the writings of Archigenes.

I shall not refer to the anatomical knowledge possessed at this time, and will at once take up what was known of the ætiology of intestinal diseases. Their pathogenic explanations are only based on hypotheses which to-day are contraverted, and varied with each medical sect. Faithful to the ancient humoral theories found in Hippocrates, the dogmatics especially incriminated corruption, the mixture or fluxion of the humors. The methodists believed in a hypothetical dilatation and constriction of the pores of the economy, while the pneumatics incriminated the vital spirit. But, although admitting the fundamental principle of any one of these sects, the question was hardly better elucidated. Take, for example, as a starting point the theory of the humors. Each one of them could engender by its morbid properties all the great types of intestinal affections known at the time, that is to say, typhoid fever, diarrhœa, dysentery, colic, ileus, etc. By becoming mixed, the humors could cause the same effects. It is quite true that with each different ætiological agent, corresponded a clinical variety of the disease. This is the method followed by the physicians of the Decadence, that is to say, by Oribasus, Aetius, Alexander of Tralles, and Paul of Ægina. It is impossible to know whether this theory dates further back, because the works of Praxagoras, Diocles, Carystes, and the school of Alexandria have not come down to us, but these precursors of the restorer of humorism probably admitted very similar ideas, if we are to believe Celsus.

On the other hand, the methodists were not always in accord among themselves, as is shown by Cælius Aurelianus. While some believed in the constriction of the pores, others upheld that there was dilatation, but the majority admitted diseases having a mixed cause, that is to say, dilatation at some portion of the body, and constriction at another.

As to the pneumatics, who held an essentially eclectic doctrine but rather leaning towards humor-

ism, they admitted and confounded together the ideas coming from very different points, and they were well served by their theory of the vital spirit.

The empirics, who completely rejected the primal causes as unintelligible and inaccessible to human observation, only preoccupied themselves with the secondary causes, that is to say the immediate circumstances which appeared to have presided over the development of the disease, without considering the pathogenic mechanism. Now, it must be admitted that in this study of the secondary causes, the ancients were somewhat more fortunate than in the study of the primary causes, because in this case they could base themselves on observation, and it is an undoubted fact that many of the most celebrated physicians of antiquity were very great clinicians. Thus, in the writings of Hippocrates one finds this important notion that the warm seasons, principally summer, are very favorable for the development of gastrointestinal disturbances. Likewise in the books on the epidemics it is pointed out that dysentery develops suddenly and at once in a very large number of subjects. The father of medicine who was, as is well known, a distinguished hygienist, incriminated drinking water of bad quality, too much fruit in summer, particularly when green, as the factors in the production of this disease. Overeating is also distinctly mentioned as a cause of indigestion and typhoid by Celsus, Cælius Aurelianus, Aretæus, and others. Galen explains the production of typhoid in a very rational way by admitting that the digestive functions are in a poor condition, so that the food taken leaves the body almost unchanged. Cælius Aurelianus and Aretæus also mention a form of typhoid due to chronic and very generalized changes produced by dysentery, on account of which the intestinal tract is transformed into a kind of inert canal, quite incapable of absorbing the food.

The influence of age was not neglected by the ancients, and the physicians of this epoch were well aware that children are very much subject to diarrhœa, and many endeavored to explain this peculiarity by errors in diet in early life. As to old age the school of Hippocrates recognized that at this period of life gastrointestinal disturbances are particularly serious. Cælius Aurelianus, Aretæus, Galen, and Celsus also attribute iced drinks containing too much honey or too astringent, as favoring the production of an intestinal flux. They consider the use of cold water as pernicious when the body is heated, and it was supposed that the deprivation of the external heat might even result in the production of inflammatory processes.

Finally, the followers of Hippocrates and their successors of the Græco-Roman period knew that very frequently intestinal disturbances are merely a complication or a symptom arising in some other disease, and they admitted this doctrine, not only in the case of constipation and diarrhœa, but also for dysentery. Modern researches have confirmed these very ancient theories fully. At the present time the primary phenomena of dysentery are more distinctly distinguished from the secondary phenomena, the former being at present termed dysentery, while the latter is called by such names as dysenteriform enteritis, etc.

The ancients even went so far as to look upon dysentery as a favorable critical phenomenon and this idea was accepted, not only by the dogmatics, but also by the pneumatists. In a passage that Oribæus has preserved, Rufus expresses himself as follows: "I propose to show what inconveniences occurring uselessly force out old diseases without the interferences of the physician. I do this so that the physician may not put himself out when these accidents declare themselves advantageously in such or such a sense. In reality, a pain, a tumefaction of the hip or some other joint, a dysentery, a jaundice, or various other affections of which we shall speak anon, becoming added to already existing symptoms, certain unforeseeing physicians have dared, as if some danger had occurred, not to favor these transformations, endeavoring to hinder them before they have replaced the body in a stable condition, and they have thus given rise to very serious diseases."

Further on the same writer adds: "It is not bad when an abdominal flux occurs in a case of fever; dysentery is something more serious, it is true; however fevers of long duration exist in which this complication has been the means of salvation." In this respect, speaking of dysentery, unaware of the hepatic complications which so frequently occur during the progress of this disease in warm countries, the dogmatic physicians admitted a form having a bilious origin.

The physicians of the Græco-Roman period were possessed of more complete and exact ideas on the morbid manifestations of the intestine than of those of the stomach. This is readily explained when we take into consideration the distinct symptomatology of dysentery, cholera, cholera nostras, and ileus. But beside these distinct morbid entities, the ancients admitted others which are merely symptoms, such as colic and diarrhœa. But the ancients exactly described the marked nutritive disturbances that diseases of the intestine give rise to and they have given a very good study of the changes arising in the stools in these diseases and the suffering which to-day is still called colic. They gave it this name because they believed that the principal seat of the pain was in the colon. They have described the sensations that the patient feels when tormented with colic and insisted on its tormenting character. As to melæna, they knew that a patient might pass blood from the anus, sometimes pure, at others black and coagulated. They even attempted to distinguish the true seat of the trouble by applying theoretical ideas, all of which were not inexact. Thus they said that when the blood came from the upper part of the bowel it was intimately mixed with the fæces, and that when it was derived from the lower portions, the colon and rectum, the blood only covered the stools passed by the patient.

The ancients also pointed out the marked loss of strength produced by certain intestinal diseases, a fact well known to-day, particularly in cholera, ileus, and the serious form of dysentery, and resulting from the involvement of the abdominal sympathetic.

The course of intestinal diseases had been carefully studied at this epoch, at least from the time of the early methodists, who distinctly divided the various affections into acute and chronic. Cholera and

ileus were considered as affections having an essentially rapid evolution. As to dysentery and diarrhoea they stated that they sometimes had a rapid progress, but that more frequently they appeared to develop slowly in the organism and persisted for a long time in certain subjects. The prognosis of ileus was considered extremely serious, and the intense types of dysentery and cholera were also greatly feared. Tenesmus, diarrhoea, and typhoid were less feared, but nevertheless Hippocrates, Celsus, Cælius Aurelianus, and Aretæus considered it as a bad sign when the patient became weak and lost his strength. Aretæus had remarked that in phthisis a severe diarrhoea not infrequently preceded the death of a patient.

The diagnosis was based principally on the nature of the fæces and also somewhat on the local and general symptoms, other than the stools, such as colic, general weakness, nervous disturbances, etc. In this respect I would point out that Galen and other writers carefully insisted on the fact that the kidneys and liver could also give rise to colic, and these writers endeavored to distinguish the latter from intestinal colic. Cælius Aurelianus and Aretæus were the two writers who particularly considered the diagnosis of intestinal diseases, but other writers, particularly Galen and Archigenes, also endeavored to make a differential diagnosis.

Although their resources were limited the ancients were not weaponless in the treatment of intestinal disease. They had in the first place fasting, which naturally gives excellent results in the case of large eaters when they are afflicted with an attack of indigestion. As at this time the physicians were not ignorant as to the bad effect of errors in diet and as they were even given to exaggerate the importance of this, a light, appropriate and easily digestible diet was ordered excepting in those instances when the patient was considered of a phlegmatic temperament, that is to say a cold and humid affection. In these cases they were apt to prescribe rather heavy, astringent, and constipating foods. Moderately cold water was also prescribed in cases of vomiting. Purgatives and emetics were frequently used and must have given good results in simple gastrointestinal disturbances, but the methodists had already insisted on the danger of acrid purgatives and they rejected emetics, excepting tepid water and tickling the back of the throat.

In cases of persistent diarrhoea astringents were resorted to *intus et extra*. It should not be forgotten that the ancients attributed to medicines applied on the skin an efficacy that to-day causes us to smile. For this reason they employed ointments containing oil of rose and powdered gall. It is quite possible that these ointments when frequently repeated in inunction may have had a good effect, but the result was obtained not from the ointment, but from the intestinal massage.

Besides the astringents they began to use preparations of opium, but to a far less great extent than at the present time and in doses which were much too small. In reading Oribasius, I have found satisfactory teachings on the use of an infusion of opium in cases of intestinal disturbances. Philagrius, the brother of Poseidonius, who has left us such interesting descriptions of the principal nervous diseases

and who is especially known for his great surgical skill, employed a decoction of poppy heads in order to diminish the liquid discharges and to calm the pain. Aretæus also prescribed various opium preparations in persistent diarrhoea.

In what I am now about to say, I shall especially endeavor to point out the discoveries that the physicians of these remote days made, but I shall slip over their errors which were those of their times and only accord a very limited space to their humoral and solidist pathogenic ideas, because they present only a limited historical interest for the reason that they are based on purely imaginary conceptions. I would here say that, as far as I am aware, I am the first medical historian who has found in the writings of the ancients a description of appendicitis, although they gave it no particular place in their classifications. In one of my historical letters written recently to the *Boston Medical and Surgical Journal* it is, I believe, conclusively shown that appendicitis has been described by two of them, although it is dealt with in a few words. I will here quote the part dealing with this question.

"Celsus appears to have been familiar with appendicitis, because in speaking of colitis he says that '*the disease of the large intestine is principally situated in the caecal portion. Considerable swelling and violent pain are observed particularly on the right.*' He advises the application of hot, dry fomentations. Of the writers during the period of the Decadence I have consulted Aetius, Oribasius, Paul of Ægina, and Alexander of Tralles. Most of their writings are of secondary importance historically, but in Aetius's *Tetrabiblion*, lib. IX, cap. xlii, the following remarks are to be found, which undoubtedly refer to suppurating appendicitis. '*Occasionally abscess of the intestine occurs, whose rupture gives rise to purulent stools.*' After stating that this condition is often erroneously diagnosed as dysentery, he goes on to say '*that in abscess of the intestine there is a localized pulsating pain. There are no colics such as are observed as forerunners of an attack of dysentery. When the abscess has matured, the temperature goes up and is more marked in the evening. When the fluid has collected the morbid phenomena diminish and the pain becomes less acute, only to recur when rupture of the abscess takes place. Sometimes there is obstinate constipation. Nothing like this is encountered in dysentery.*' He advises the use of linseed meal poitices, to which is added some astringent such as blackberry wine, etc. Appendicitis was apparently unknown to Soranus of Ephesus, because Cælius Aurelianus, whose writings are merely an abbreviated translation of the works of the former, gives no description of the affection."

I shall now consider cholera both on account of its importance and because it has been well described by the ancients, after which I will outline their treatment of ileus, diarrhoea; typhoid, and dysentery. I would point out, however, that cholera nostras will alone be considered because the ancients never had to deal with Asiatic cholera. It is quite true that the Egyptians carried on an important commerce with Hindustan, but Ptolemy's ships did not go directly for their precious cargoes to India, but received them through the interme-

diary of Arabian merchants. Now, not only the route gone over from India to Egypt was tremendous, but at the same time the means of locomotion were extremely slow. The Arabian sailors with their miserable little ships never dared to lose sight of the coast. The Egyptian ships were somewhat better in construction and very much larger, but they sailed with extreme slowness because they were obliged to navigate on the Red Sea, a piece of very dangerous water on account of its severe storms and shallow spots. Now, the duration of the voyage appears to be a principal element in the greater or lesser possibility of contagion by maritime routes. At the present time, it is because the English vessels coming from India remain so long at sea before reaching home, that England is rarely attacked by Asiatic cholera. Then, on the other hand, at the period that we are considering, there was still another guarantee against contagion, namely, the multiplicity of the intermediaries through which the Indian merchandise passed before reaching the Mediterranean. The sailors and the ships changed very frequently during the voyage.

It may be asked whether the overland voyage might not have been at this time the same as it was to Europe in 1830, but at the epoch of which we are speaking, this is quite improbable. It should not be forgotten that by the overland route the merchandise from India passed through a larger number of hands than by sea. The incessant wars, the difference in religion, the enormous deserts separating India from Persia, the tremendous distances of the routes followed, and the very slow progress made with camels and horses must of necessity have limited the transactions and enormously lengthened the duration of the voyage. On the other hand, it is absolutely certain that the writers of the Græco-Roman period do not refer to any of these numerous epidemics which killed off thousands of victims, as they have done in the case of the plague. Hippocrates speaks of frequent cases of cholera during the summer, but the influence of the season explains perfectly this recrudescence of cholera nostras.

I would like to say a few words as to the etymology of the word serving to characterize this disease. The ancients were far from being unanimous on this subject; some believed it was derived from the word *cholē*, meaning bile, pretending that the stools were of a bilious nature. Other writers remarked that this was merely an appearance which was not even constant, and believed that it was derived from the word *gastroenteritis*, which in ancient Greek meant intestines.

However this may be, and leaving aside the humoral and solidist theories which have only an historical interest, it may be said that the physicians of the Græco-Roman period possessed very correct ideas on the aetiology of cholera nostras. They attributed it to the influence of the heat of summer, the bad quality or a too low temperature of the waters, a poor alimentation, and principally the use of green fruit. They also mention the employment of acid and irritating medicines and indigestion, which when frequently repeated were considered the most powerful causes of cholera. It is quite true that a diseased digestive tract is particularly susceptible to this disease.

It is quite useless to speak of the pathology at a time when popular prejudice prevented autopsies from being made. On the other hand, however, I would insist on the morbid picture that the writers of this time have left us of cholera nostras. They have perfectly described the continued vomiting and the severe diarrhoea, the depression of strength, the cold clammy sweat, the small rapid pulse, and the cramps arising in the limbs, principally in the calves of the legs. They correctly considered the progress of the affection as essentially rapid and acute. They were extremely fearful of cholera and divided it into a hyperacute form, a serious form, and a mild form.

The intensity of the intestinal symptoms, the vomiting which proved that the stomach was also involved, and the severity of the symptoms were sufficient to differentiate cholera from diarrhoea properly speaking. The ancients were not as well armed for the treatment of cholera nostras as is the profession to-day. But, nevertheless, at this period a certain number of effective medications were proposed. In the mild cases and at the commencement of the symptoms, emetics and purgatives were administered in order to evacuate the acrid humors and to relieve the intestinal tract of food, whose corruption was a source of irritation. If these means were not sufficient, an endeavor to control the vomiting was made by giving moderately cold water to drink. For the diarrhoea, astringents were administered by the mouth or by the rectum. Plasters were placed on the abdomen in order to arrest the flux of the humors. The following plaster, due to Alexander of Tralles, appears to have been much used.

Flowers of virgin vines,	2 drachms;
Oil of quince,	2 drachms;
Storax,	4 drachms;
Gum acacia,	8 drachms;
Green gall nuts,	4 drachms;
Dates,	6 drachms;
Sour wine,	16 drachms;
Oil of myrtle,	16 drachms;
Pitch,	16 drachms.

When the acute period was passed and there only remained an intestinal susceptibility and a considerable depression of strength, a light but tonic alimentation was prescribed. The use of astringent wines was to still be continued until complete recovery.

Under the name of *ileus*, the ancients usually designated what we at the present time term intestinal occlusion, but the distinction was not complete from that of peritonitis and certain cases of poisoning by acrid and irritating substances which produce a severe irritation of the intestines. Hippocrates mentions this affection on several occasions, likewise its symptomatology and its serious prognosis. Euriphom and Praxagoras did not distinguish between ileus and the violent colics to which it gives rise, but Dioscorides in his treatise on the causes and treatment of disease, distinctly separates ileus from other intestinal diseases, giving it the significant name of *choradapos*, that is to say, a knotting of the gut. To make this distinction he took into consideration the distention and hardness of the intestine, which are so marked that enemata cannot penetrate into the lumen for the rejection of faecal matter, etc.

However, before his time certain Sicilian physicians belonging to the sect of Pythagoras had described this kind of obstruction or intestinal strangulation by calling it *phragmos*, that is to say, obliteration or contraction of natural tissues. Asclepiades referred to it in the third book of his treatise on acute diseases and defined *ileus* as an extremely persistent contraction of the intestine. Heraclides, of Tarentum, a celebrated empirical physician, had remarked that in the severe cases one could feel the distended intestinal loops under the abdominal wall, as if they had escaped from the peritoneal cavity.

In the second century of our era these notions, which were so complete, became more precise at the hands of Soranus, Aretæus, and Archigenes, whose writings on *ileus* have been handed down to us by Aetius.

I will now indicate the causes of this disease as exposed by the principal writers of the Græco-Roman period. It is evident that neither traumatism nor poisons could produce a true *ileus*, but the same cannot be said of sudden movements, the ingestion of iced drinks, or the accumulation of hardened fecal matter. The ancients were well aware that the phenomena of intestinal obstruction are quite frequent in subjects having a hernia. But as they did not know anything about strangulation of the gut in the neck of the sac, they supposed that the phenomena observed were due to the prolapse of a loop of gut filled with fecal matter, into the scrotum.

The symptoms of intestinal obstruction were quite well described, although the ancients were ignorant as to the multiple mechanisms by which this serious condition is produced. They mentioned the extreme distention of the abdomen, the difficulty in respiration, the vomiting of food, followed by fecal vomiting, the severe pain, and the ardent thirst which these patients are afflicted with. They said that the majority of patients were subject to constipation, and possessed intestines so narrow that an enema could not be introduced.

The majority of cases of *ileus* ended in death. However, a few escaped and presented at the end of the affection a severe diarrhoea or even dysentery. The ancients distinguished two types, the slight and the serious.

Little can be said as to their treatment, as we know that medication is for the most part followed by disaster in cases of intestinal occlusion. Other than in those cases where the gut is obstructed by fecal matter, or from an invagination, acrid purgatives and enemata have hardly any chance of success. In cases of strangulated hernia, Archigenes recommended reducing by force if necessary the loop of intestine which was the cause of the accident.

Dysentery is without doubt one of the intestinal diseases with which the ancients were most familiar. This disease is of extreme frequency in the Oriental basin of the Mediterranean, and there takes on an acuity which is rarely observed in the more temperate regions. On the other hand its very distinct characters usually make the diagnosis easy. As to the aetiology, the humorists particularly incriminated the fluxion of the humors, fermentation and changes

in them, principally of the bile and atrabile, while the methodists rejected the theory of the humors and incriminated the dilatation or marked contraction of the pores of the organism.

Among the secondary causes, that is to say, the circumstances in the midst of which the disease appeared to develop, Hippocrates included the use of bad water, while his successors also accused astringent drinks, such as sour wine. Great importance was attributed to the ingesta in the production of dysentery, such for example as uncooked food, green fruit, and irritating dishes containing too much garum and leek. Cold water and chilling of the body were also considered important aetiological factors.

Besides a primary type, a secondary type was also admitted, following not only affections of the intestine such as *ileus*, cholera, and diarrhoea, but also serious fevers and diseases of the liver. The majority of writers of this period, who certainly must have had considerable opportunity of observing the hepatic complications of dysentery, insisted on this clinical variety which they considered as very serious.

When one reads the detailed descriptions that the ancients have left us, particularly Aretæus, on ulcers of the intestine with their location, shape, and aspect, it may rightly be asked whether or not they had not observed these lesions in the cadaver. This, however, is not very probable as the school of Alexandria alone appears to have performed autopsies during antiquity. It is possible that Erasistratus left observations on intestinal ulceration found in those dying from dysentery, which have not been handed down to us. But this is hardly admissible, because neither Celsus, Galen, Cælius Aurelianus, nor the writers of the *Decadence* have made the slightest allusion to them. Consequently, the description left us by the ancients must simply be derived from their imagination, according to the nature of the faeces and also ulcers of the skin whose evolution and characters they were familiar with. What seems to confirm this is that several of the details furnished us by the Græco-Roman authors on ulcers of the intestine are manifestly fictitious.

It should be pointed out that the ancients held the location of the intestinal ulcer in great importance. They even often separated ulcers of the rectum from abscess of the large and small intestine, considering the latter as a special disease which they called *tenesmus*. But this distinction was not admitted by the principal writers, who regarded *tenesmus* as a mild form of dysentery. The clinical picture which the ancients have left us of dysentery is very complete and is full of animation and detail in the treatises of Aretæus and Cælius Aurelianus. The stools of dysentery, say these writers, are bilious, dirty, and finally become bloody; they contain quite large clots and membranes which are similar to flesh, while in severe cases this flesh is in a gangrenous state and gives rise to a very bad smell. The patient constantly desires to go to stool and when this takes place he is seized with violent pain and with a sensation of internal burning. There is loss of appetite, but thirst is only moderate. There is restlessness and insomnia; the abdomen is distended

and painful, the patient loses flesh and strength. The tongue is sometimes moist, but usually it is dry. Sometimes there is vomiting. In severe cases the patient becomes torpid. This disease is rarely acute and according to Cælius Aurelianus, Aretæus, and others, it is usually chronic. It may end by recovery, but in other cases the patient dies worn out by pain and intestinal symptoms. It was noted that in typhoid the intestine was incapable of digesting food, and the ancients believed that it often followed dysentery.

However, dysentery was considered favorable when it occurred as a critical symptom during a severe fever.

The ancients not only separated dysentery from typhoid, diarrhœa, and colic, but they also endeavored to locate the real seat of the intestinal ulcers. For them this question was of importance, because they believed that ulcers of the small intestine were particularly proper to be treated by remedies administered by mouth, while ulcers of the large intestine should be treated by enemata. Cælius Aurelianus, but especially Galen and Aretæus, were especially occupied in solving this question, and the following are the principal distinguishing symptoms that they evoked. In the first place, the pain was not the same in each disease. When the seat of the ulcer was in the small intestine the pain was located in the upper part of the abdomen, particularly above the umbilicus, while the contrary was true when the ulcer was in the large intestine. When the small intestine was diseased they believed that the stomach was frequently functionally involved, a condition which did not occur when the large intestine was the seat of the trouble. The nature of the stools was quite different when the ulcer was seated in the small intestine. Here the feces were believed to be more liquid and more intimately mixed with blood, and that they likewise contained fat. This fat was absent when the large intestine or the rectum were alone ulcerated.

We will now consider the various treatments that the ancients employed in dysentery. When the bile was incriminated, a refreshing diet was ordered, which principally consisted of lettuce, chicory, and cooked marshmallow with a little salt. In order to facilitate the stools, Alexander of Tralles recommended Damascus prunes. Cucumbers, light meats, boiled eggs, and certain kinds of fish were also allowed to be eaten. Inunctions over the abdomen were made with certain oils. When phlegm was supposed to be the cause of the symptoms, a heavier and more heating diet was ordered, such as beef and pork. Hoth baths were particularly prescribed in these cases. At the same time the wines of Sarephtha, Tyrus, Campania, Bruttium, and even palm wine were ordered, the latter on account of its astringent action. Irrigation of the rectum was largely resorted to. At the commencement of the disease a honey enema was perhaps all that was prescribed, while later on in the affection an infusion of rose leaves and other plants was used. When the ulcer was believed to be cured a decoction of acacia or plantain was used; to calm the tenesmus suppositories were employed. Alexander of Tralles frequently employed suppositories composed as follows:

Saffron,	1 ounce;
Olibanum,	1 ounce;
Gum of myrrh,	1 ounce;
Glaucium,	1 ounce;
Gum acacia,	2 ounces;
Wine,	q. s.

To lessen the suffering of the patient opium was employed, and in the work of Alexander of Tralles the following pastilles are given, composed as follows:

Opium,	1 drachm;
Powdered lime,	12 drachms;
Conserve of roses,	10 drachms;
Extract of hypocyst,	10 drachms;
Ashes of papyrus,	10 drachms.

These pastilles weighed three drachms for a man, two for a woman, and one for a child, and were to be dissolved in myrtle or date wine. Galen, Oribasius, Aetius, Alexander of Tralles, and Paul of Ægina warmly recommended pastilles containing the red or yellow sulphide of arsenic, to which was added some powdered carbonate of lime. When the small intestine was suspected of being involved, the patients were ordered to take a compot of cooked fruit which had been mashed so as to give it the consistency of honey, and Alexander of Tralles has given us the prescription. The medicament owed its virtue to its astringent qualities. The formula being as follows:

Pomegranate,	20 pieces;
Quince,	20 pieces;
Rose petals,	1 pint;
Wild prunes,	2 pints;
Apples and pears,	30 pieces;
Fruit of sorb tree,	2 pints;
Fruit of sumac,	3 pints;
Black myrtle berries,	1 pint.

To combat the liquid stools the following pastille was employed:

Anise,	2 drachms;
Hyoscyamus,	4 drachms;
Fruit of opium,	4 drachms;
Opium,	2 drachms.

In chronic cases astringent and carminative ointments were used. The following is a specimen found in Alexander of Tralles:

Seeds of hyoscyamus,	2 ounces;
Seeds of anise,	2 ounces;
Rose petals,	2 ounces;
Fruit of sumac,	2 ounces;
Extract of hypocyst,	2 ounces;
Conserve of roses,	2 ounces;
Opium,	1 ounce;
Saffron,	1 ounce.

This was mixed in myrtle wine.

We now come to colic, diarrhœa, and typhoid, the intestinal symptoms of which I will not discuss. The two former were considered by the ancients as distinct diseases of the intestine, but the writers of the first and second centuries of our era vaguely felt that this was not the case, because they say that diarrhœa, colic, and dysentery are very frequently secondary conditions, such, for example, as the diarrhœa occurring in diseases of the stomach and pulmonary phthisis. I would only recall that Cælius Aurelianus, Aretæus, and especially Galen, made it a point to distinguish between hepatic and nephritic colic and intestinal colic. I have thought that it might be interesting to give here a few formulæ of certain medicaments prescribed by the ancients, as they will give a more complete idea of the manner

in which they utilized the very numerous medical substances that they had at their disposal, only a few of which are really efficacious, and I will begin by the remedies employed in colic. When it was believed that viscous and cold humors were the cause of the trouble, Alexander of Tralles recommended the following formula:

Resin of turpentine,	6 ounces;
Juice of turpentine,	6 ounces;
Butter,	6 ounces;
Castoreum,	6 ounces;
Large caraway seed,	6 ounces;
Unguentum basilicum,	2 to 6 ounces;
Powdered laurel berries,	100 pieces,
Seeds of leek,	3 ounces;
Rue,	one handful;
Oil of alcaea,	5 pounds.

The oil was heated in a large recipient, one pint of wine was then mixed with it, and then the berries and castoreum were added, and allowed to infuse for three days. It was then gently heated until all the wine had become evaporated, was removed from the fire, the turpentine, butter, and unguentum basilicum were added, and it was then allowed to cool. From two to three spoonfuls were used for an enema, the medicine calming the pains without having any soporific effect.

By the mouth they administered powdered laurel berries mixed in two cyathi (twenty drachms) of wine, or a kind of extract of the leaves of lycium europæum was made to which was added nine grains of pepper and two drachms of honey; this medicine was given to patients before the bath. Castoreum taken in wine was considered useful or the following mixture was ordered:

Fœniculum officinale,	1 ounce;
Pimpinella anisum,	1 ounce;
Pointed nard,	1 ounce;
Seeds of opium,	half an ounce;
Amomum,	half an ounce;
Cinnamon bark,	half an ounce.

More frequently the following prescription was employed:

Seeds of cardamom,	4 ounces;
Seeds of amomum,	1 ounce;
Pointed nard,	1 ounce;
Bark of fennel,	1 ounce;
Capsules of poppy,	1 ounce;
Costus speciosus,	1 ounce;
Valerian,	1 ounce;
White pepper,	1 ounce;
Caraway of Ethiopia,	1 ounce;
Dry mentha piperita,	1 ounce;
Fruit of asarum europæum,	1 ounce;
Myrrh of the Troglydites,	4 drachms;
Scammony,	4 drachms;
Skimmed honey,	q. s.

And lastly, Marcellus has given the formula of a composite medicament which enjoyed a great reputation in antiquity. It is as follows,—

Saffron,	8 drachms;
Sulphur,	2 drachms;
Opium,	6 drachms;
Cinnamon,	1 drachm;
White pepper,	20 drachms;
Honey of Attica,	q. s.

The dose was a piece of about the size of a nut, dissolved in hot water.

For diarrhœa the ancients prescribed a constipating and astringent diet, decoctions of polygala and other plants, but principally infusions of gall nuts and quince. As drinks they prescribed acid wines,

rice water, etc. Certain writers also prescribed preparations which appear to have acted principally by the opium they contained. In typhoid they were particularly careful as to the stomach, whose functions they carefully looked after, while the remainder of the treatment was very similar to that employed in the so called cœliac disease.

871 BEACON STREET.

THE HUMAN BODY VIEWED AS A MACHINE.

Suggestions for the Promotion of Longevity.

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It is said that a sure way to prolong one's life is to contract an incurable disease. There is a germ of truth in this jest, for it has been observed that a person affected with one of the diseases commonly believed to be incurable, is so concerned for his safety that he follows without hesitation the strict rules of health and thus unexpectedly prolongs his life. It is fair to infer from this that if one in good health will observe voluntarily the restrictions which he involuntarily submits to through fear of being untimely cut off, he will be almost sure to achieve extreme longevity.

The average duration of human life is said to be lengthening. Methods of still further prolonging it may perhaps be suggested by viewing the body as an ingenious piece of mechanism more or less under our control. The body and the machine consume material known respectively as food and fuel. The fuel used must be that which produces the most power with the least wear and tear, but there is no very strict rule in regard to food. The fuel of an engine is simple in its composition and it varies little from day to day, from hour to hour. Simplicity and monotony are also seen in the diet of the first months of life, but after infancy the selection of food depends on mistaken ideas of economy, the customs of the country, the whims of an educated palate, or the dictates of fashion. It is certainly not the part of wisdom to feed the body in this haphazard way, to strive for great variety, to levy tribute on beasts, birds, and fishes at every meal, and to gather condiments and stimulants from the ends of the earth. If the old proverb is true that hunger is the best sauce, then the pleasures of the table are by no means absent from the board abundantly spread with simple food. The columns of profit and loss are cited to prove that the engine requires simple fuel. Why not calculate as closely when providing for the wants of the body? The care given to the locomotive or the marine engine may well be extended to that other incomparable machine, of which it was said: "What a piece of work is man! how noble in reason! how infinite in faculty! in form and moving how express and admirable!"

A competent continuous diet might include starchy vegetables, fat meat, bread and other cereals, milk, plain cake or pudding, fruit, and the customary liquids. Such food should carry one a long way toward the desired goal of a late and happy old age. Striking a just balance, the vain delights of ext. vagant variety may be set over against recurring bilious attacks, dyspepsia, abnormal intro-

spection, ill temper, a blighted complexion, rheumatism, and other complaints due, in part at least, to the dietetic follies of mankind.

Fuel is prepared for the engine with the greatest care. It is broken up and screened till the size of its particles is adapted to the wants of the machine. If the same careful attention were paid to the preparation of food there would be less trouble from the early decay and loss of the teeth. A man of middle age said that he had arrested purulent Riggs's disease by ceasing to chew his meals. When asked if he did not think it was necessary to grind his food he replied that he had it ground at Minneapolis, and that it was further sufficiently cut up and softened in the kitchen before it reached the table. Beautiful teeth are to be admired, but they remind us of the rude days when molars and incisors were used by the primitive man for crushing grain and cutting up meat and fruits. As the grindstone suffers attrition as well as the grist, he doubtless lost his teeth early and endured much inconvenience and pain. The mouth is a cavity in which the food, skillfully compounded with the aid of heat and water, is still further moistened by the salivary secretion and thoroughly mixed and moulded by the action of the jaws and tongue till it is ready to be passed, in suitable morsels, into the cavity of the stomach. In this process the teeth should be treated gently and prized as specimens of destructive weapons illustrating the necessities of a bygone age. That digestion may be perfectly performed without the use of the teeth is evident from the growth of infants and the health of many elderly persons who have lost theirs, and whose comfort in the latter years of life would have been greatly increased by their presence and good condition.

The engine receives frequent additions of fuel, but the body is fed only at long intervals. An old custom of the navy called for the "meal pennant" at "8 bells." Thus the men had breakfast at 8 o'clock, dinner at 12, and supper at 4. Three meals within eight hours were followed by a fast of sixteen hours. Rations would have been better served according to the rules of the fire room, where efficiency is secured by bright and clean fires and small additions of fuel at short intervals. At the beginning of life the occupant of the cradle is naturally fed very often, but presently his meals are prepared at the convenience of the household. Throughout boyhood he alternates between hunger and the sensation of being overfed. Later he is engrossed in business and accepts the customary rotation of breakfast, luncheon, and dinner, with perchance a late supper.

These formal and substantial entertainments come at such long intervals that each repast is approached with a feeling of hunger, and then devoured so eagerly as to create a feeling of distention. By leaving the tale when hungry, in obedience to advice so often given without due consideration, we escape repletion, but are long encounter a worse enemy in untimely appetite soon followed by hunger with its accompaniments of mental irritation and bodily weakness. We are cautioned against eating between meals. It is said that even a few mouthfuls will destroy relish for the coming meal. It is probable, however, that health and longevity would be promoted by resorting to occasional

moderate repasts, preventing surfeit on the one hand and hunger on the other. It often happens that so much time elapses before the advent of the regular meal that when it comes it is converted into an inordinate feast which temporarily clogs the digestive machinery. If agreeable alternations of moderate indulgence and returning appetite were to become the rule, then feasting prompted by hunger would be banished, and continuous digestion might join other uninterrupted vital functions in promoting longevity. Digestion appears to be continuous in insects, fishes, birds, and animals. They spend most of their lives taking in food, and probably escape indigestion. Man should perhaps seek similar exemption by keeping his digestive machinery in constant motion and declining to subordinate the routine of his daily meals to the conventions of housekeeping and business. It is said that an idle locomotive deteriorates faster than one in use, and constant activity is probably essential to the well being of the natural as well as the artificial machine.

It were almost a sacrilege to try to discredit the family table. In a well ordered household, where the day's routine is controlled by the conventional succession of meals, it would be impossible to serve more than the customary three or four daily meals at the family table. It may, however, be fairly questioned whether the prevailing routine provides accurately for the gross wants of the body. It is related that the dining room was wanting in the home of a certain family whose members were in the habit of satisfying their appetites by occasional visits to the pantry stored with cooked viands and furnished with appliances for warming food. In place of this Bohemian scheme, it may be suggested that the fast which goes with sleep be broken at the hour of waking by a small repast prearranged in anticipation of the formal breakfast. Another slight repast may intervene between breakfast and luncheon. The afternoon hours may be interrupted in a similar manner without interfering with dinner, which in turn should not forestall a supper before retiring. Finally, if sleep is unduly broken it may be invited to return by levying on the food provided for the hour of waking. The frequency of these meals would prevent any one of them from exceeding the bounds of moderation, and the day would end without the uncomfortable sensations which so often precede and follow customary ingestion. The extra meals here suggested would not, as a rule, be eaten at home. Some of them, if desired, may be made very formal and elaborate, but many are likely to be informal and eaten from the hand and standing. Good food and sufficient variety may be found in the dinner pail, a bottle of milk may be left at the door of the office, crackers and cheese may be uncovered in the office desk, a sandwich may be extracted from a coat pocket, luncheon may be ordered in a tray, a visit may be made to a "dairy," or fruit and nuts may be purchased from a convenient vendor. In the uncertain future tabloid food may cease to be a cause of merriment.

It is sometimes said that the stomach requires rest after a meal. This statement is open to question. If digestion were begun and finished by the unaided action of a single organ like the stomach, then the result might well be fatigue and the necessity of rest. It is, however, a slow process of me-

chanical and chemical reduction, in which the stomach, the pancreas, the liver, the different divisions of the intestinal canal and other organs take part without remission of activity. As in a well ordered factory, various substances are elaborated by one ingenious device after another till the finished product issues in a continuous supply to enter the current of the blood and be carried where it is required. A complicated machine depends on the harmonious action of its related parts. In like manner the body maintains its existence by the cooperation of its vital organs, no one of which is allowed to be idle. If any one of them seeks rest it is by momentary alternations of action and inaction, as is seen in the movements of the heart, and not by ceasing to work or taking a vacation. It is more than probable that digestion, in order to be properly performed, should, like the circulation and respiration, be uninterrupted. If circulation were to cease, depriving the tissues of the body of new material and leaving waste matter to accumulate; if air were kept from the lungs, arresting the exchanges which are carried on in the air cells and preventing reinforcement of the blood; if food were withdrawn, setting peristalsis and secretion at naught, and withholding fresh material from the blood current; if any one of these vital departments were to falter, there would be immediate distress and ill health.

The dyspeptic says that he cannot eat, has not the slightest appetite, even loathes the sight of food. It may be that his timely appetite has suffered so often from capricious postponement of meals and subsequent engorgement that it has forgotten its cue and lost its place in the programme. The remedy lies in taking very small meals at very short intervals, with the expectation that appetite and hunger, which cannot be said to have abdicated entirely, will resume their places in the economy. An old prescription for nervous dyspepsia, said to be from Dr. Brown-Séquard, was: "Sixty meals a day." These "divided doses" would of course be extremely small and very simple. The confirmed dyspeptic may not hope to be restored at once. He should know that he has been in the wrong path for a number of years and that the downward road is easy, while returning is far from easy and requires considerable time. Different preparations of food may be tried at varying intervals, and always in small portions, till the patient learns his true dietary and the proper frequency of his meals. Making many experiments he will surely beguile his truant appetite and find himself, after a few weeks, enjoying his food with the assurance that his trouble was functional and not organic.

An obvious difference between the machine and the body is that one remains of the same size and retains its pristine brave appearance and ability, while the other exhibits the miracle of growth, and in time weakens, shrivels, and fades. It is noticeable that in many particulars the condition of the body at its beginning is repeated at its close. The helplessness of infancy is followed by the strength of manhood, and that in turn by the debility of old age. The absence of hair and the lack of mental and physical power are the common lot of infancy and age. The absence of teeth at the two extremes of life suggests, not necessarily, a return to a diet of milk, but at least a distinct departure from the food

required in the period of enterprise and activity. The feeble gait of the old man duplicates the uncertain footstep of the child learning to walk. The ancient riddle of the sphinx is ever new: "What animal goes on four legs in the morning, on two at noon, on three in the afternoon, and again on four at night?" At the beginning the organs are deficient, or below par, not from error, but from not having yet reached full development. At the other end of the span of life they take on deficiency from being, in part at least, worn out. As the deficiencies of the early period are met by frequent meals and the simplest food, so those of the later and more critical period may perhaps be offset by experimenting with the diet of early childhood.

The machine and the body have widely different ways of beginning and ending. The former begins suddenly, with the assembly of its parts, while the latter comes into view with the slow steps of natural growth. The artificial machine is discarded and broken up when a better one is invented. Having served its purpose it is forgotten, while the natural machine ends quietly by uneventful decay and extinction, to reappear, it is believed, as a spiritual body.

We all hope to reach old age, are rather expecting to do so, and some are willing to enter second childhood, which is sadly wanting in the tender regard which hovers over the cradle of infancy. Sentiment aside, let us inquire as to what may be called the normal process of decess. An infant at the beginning sleeps all the time except when he is nursing. At the end of a month he is awake fifteen minutes in the twenty-four hours in addition to the time given to feeding. At the end of another month he is awake half an hour; at the end of three months, three hours, and at the end of a year he is awake one half of the time, and his development is well advanced. In the coming days, when diseases are no more, and patriarchal longevity is resumed, the pilgrim of 150 years, overtaken by the desire to rest, goes back, step by step, over the road by which he came into the world. He sleeps all night and part of the day. A few months later, he sleeps, undisturbed by the sunlight and noise, more than half of the day. In a few months more, he is awake but a few minutes in the twenty-four hours, and presently he does not wake at all, and ceases to breathe. He closes the game of life by making, in backward order, the moves with which he opened it.

53 WASHINGTON SQUARE.

THE DIAGNOSIS OF CONGENITAL SYPHILIS IN THE FIRST WEEKS OF LIFE.*

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The interest of the general practitioner as well as the specialist centres largely about the possibility of making an early diagnosis of this disease. There are several factors which must be considered in this particular:—the family history; the type of the disease, the appearance of the infant at birth, and the appearance of symptoms some time after birth.

*Read at the Richmond Borough Meeting of the Medical Association of the Greater City of New York, June 2, 1909.

THE FAMILY HISTORY.

This is most important and yet difficult to obtain unless the examiner has a clearcut idea of what he should elicit and has the ability to do it skillfully. Because of the attitude which the laity assume in regard to the matter, the question, "Have any of the family ever had syphilis?" should never be asked. A denial means nothing, and by placing the questioned one upon guard it detracts from the honesty and value of subsequent answers to other questions. It is far better and much more certain to obtain a history of events which will establish a strong presumptive evidence as to the existence of the disease. The several events to be considered are these:

(a) The tendency of the children of a given family to suffer from unaccountable anemias and malnutrition during the earlier periods of life, despite the fact that the hygienic surroundings and the dietetic care are both excellent.

(b) The occurrence of anomalous types of disease in two or more children of the same family, or the unusual course of a disease under similar circumstances.

(c) Tardy development without a recognized cause or occurring as the result of a recognized ætiology, but out of all proportion to that cause and occurring in two or more children of the same family.

(d) The occurrence of a rachitic type of skull without the other evidences of rachitis being proportionately marked.

(e) History of the disease, direct or presumptive, in one or both parents.

(f) A history of the abortive habit in the mother without definite cause.

Let us consider this latter first, as the other events can be more properly discussed together under the heading of types of the disease.

The death of the fetus may occur at any period of intrauterine life. But the most common occurrence of the event is between the fourth and the seventh month. In those pregnancies which are terminated early (first five months) the fetus may show no evidences of the disease which are clearly demonstrable. Histological sections may be compared with those of the normal fetus, but is not always feasible. During the last four months of pregnancy if the fetus is expelled the evidences of disease are usually unmistakable. This is particularly true of changes in the placenta. Not infrequently the placental changes cause a phlebitis of the cord (veins), and the premature expulsion and death of the fetus is found in hydramnios.

The gross appearance of the specific placenta is usually as follows: It is larger and heavier than normal and its lobes are deformed. It is pale and often yellowish in hue with a much thickened and hardened cord.

THE TYPES OF DISEASE.

Ordinarily we think of congenital syphilis only as it shows in a more or less virulent infection in the offspring. But, on the other hand, there may be the hereditary transmission of constitutional changes which are the result of the specific poison in the parent. The manifestation of these changes in the offspring are in more or less marked general dis-

turbances which are not traceable to other sources. If we consider only the first type of cases we are taking a very narrow view of the disease. In this type we study changes which are brought about through the influence of the direct hereditary transmission of germs. In the other type we are not of necessity dealing with that situation but with a constitutional transmission which is resulting in the various anomalies as stated.

These are dependent upon and connected with the destructive effect of the disease upon the general health and condition of the parents. In other words, we frequently see infants exhibiting tissue changes which are attributable to syphilitic infection, but without any evidences of the usual syphilitic lesions.

THE APPEARANCE OF THE INFANT AT BIRTH.

The appearance of the infant at birth will depend upon several factors—virulence of the infection, and the stage at which the infant is born. The infant may be born without giving any evidences of the disease, and it is only after a period of careful watching that we are enabled to detect evidence of the infection. If there is a premature birth the usual evidences of such immaturity are more or less marked. The dusky color which many of these infants have is due to the general vascular tone being defective. Rarely, we see the birth of a premature infant with well marked evidences of the disease in the skin and mucous membranes.

If symptoms are present at birth it indicates the severity of the infection, and such infants usually live but a few days. The shriveled appearance of such an infant is due to the lack of fatty tissue in the body. The skin lesions are more or less tense bullæ set upon a deep red base or surrounded with a dark or brownish red ring. These bullæ contain serum, blood, or pus. In much smaller numbers are seen less tense bullæ which dry rapidly into areas of a dusky red hue, and upon which the epidermis lies in a brown crust. Frequently the epidermis slips from these areas, leaving moist and denuded surfaces. The soles and palms are the parts most effected, although there may be an affection of other parts. In the severe cases, there is usually a general distribution. There is, however, one marked characteristic; if they appear at all they are always present upon the palms and soles.

THE APPEARANCE OF SYMPTOMS AFTER BIRTH.

However, it is the appearance of symptoms sometime after birth that especially interests us because this constitutes the much larger number of cases.

Probably the most important symptom is found in a persistent rhinitis. It occurs as a rule early and for a long time may be the single prominent evidence of the disease. Although there may be absence of discharge, it is generally quite profuse and may be blood tinged. But whatever the character of the discharge it is persistent. I recall no instance where this rhinitis was absent. In all of the cases of which I have a record it occurred during the first four weeks of life. In most instances the snuffling noise produced by breathing is quite characteristic. Naturally, nursing and respiration are interfered with. Sometimes the discharge is very irritating, but this must not mislead one into attributing any sores about the mouth or lips as due solely to

the discharge. This has been done, and the true cause of the fissure therefore overlooked. If the rhinitis goes on to ulceration there may be resultant changes in the cartilages and the destruction and cicatrization consequent upon that may cause permanent deformity.

Apart from this involvement of the nasal mucous membranes there is usually no other involvement except just at the regions about the openings of the body, and here fissures may occur. Rarely, there is a hoarseness or aphonia which indicates involvement of the mucous membranes about the larynx but this is very uncommon. It must always be borne in mind that involvement of the mucous membranes and lesions of the skin may be quite insignificant in early hereditary syphilis, and therefore too much reliance must not be placed upon these alone. When fissures or mucous patches are demonstrable they constitute the most valued features for diagnostic purposes. The lip fissures are usually linear and are persistent. Those at the angles of the mouth may be particularly persistent because they bleed easily and are deep and painful.

During the first few days of life if we can demonstrate a swelling of the nasal mucous membrane, particularly that of the inferior turbinate bone, and this is unaccounted for by a definite etiology and the infant exhibits the constitutional symptoms as wasting, cachexia, etc., our suspicions of syphilis should be aroused without waiting for later symptoms. It has been my experience that when the local symptoms are well developed the constitutional ones are less so and on the other hand when the local symptoms are slight, the constitutional ones are severe.

Hæmorrhages are not uncommon from the local lesions. They are particularly apt to occur from the rhinitis but may also occur from the skin lesions, or the fissures about the orifices.

The nails of the syphilitic infant are usually involved and ordinarily show suppuration about the matrix with consequent nail destruction. But previous to this there may be simple arching of the dorsum of the nail, and this has considerable diagnostic import.

From a clinical standpoint in the earlier periods, few bony changes can be demonstrated. The less prominent changes of the cartilaginous borders of the bone can, however, be demonstrated radioscopically.

The most prominent clinical feature is swelling in the region of the epiphysis of the long bones and especially the tibia. The appearance of the tibia may be sabrelike for the bone appears as though compressed at the sides and has an apparent arch forward. This arch, however, is only apparent, for there is no actual curve, the appearance being entirely due to newly formed osseous tissue on the anterior surface. Thus it is easily distinguishable from a rachitic curvature. The new bone deposit is the result of a specific periostitis and therefore it is painful in the beginning, the pain being prominent long before the swellings appear and being worse at night. This pain may be evidenced by the infant's rebellion against motion.

As a consequence of bone involvement two types of motor disturbance may be noticed—the paralytic

and the spastic. There may be inability to move a limb because of the acute epiphysitis present, and it is not uncommon to find that this disability is the first prominent feature. Usually it is one or both arms that are affected, and the infant cries with pain if the arms are handled. It is of interest to recall that in specific bone disease of the arms there is flaccidity, while in the lower limbs there is contracture or spasticity. The explanation of this difference is found in the anatomical relations of the musculature to the joints.

With widespread involvement, we may have crepitation.

The changes in the skull may be manifested in several ways; there may be changes which are not distinguishable from those due to rachitis; there may be abnormal protuberance of the frontal and parietal eminences with early ossification of the sutures; periosteal swelling in isolated areas (rare); or hydrocephalus.

The only important visceral change which is prominent in the early period of the disease is an enlargement of the spleen.

The most common type of skin lesion is an eruption in the form of flat, disclike, reddened areas which later change to a brownish tinge and the eruption situated about the thighs, the lower abdomen, and buttocks. These may also appear on the face or upon the soles and palms. These may be described variously as erythematous, papular, vesicular, macular, or pustular, but this division is confusing and unnecessary because the essential feature of the eruption is the flat, disclike, circumscribed character with its peculiar color. A difference in the intensity of the inflammation is really what accounts for the difference in the descriptions of the character of the lesion. The tendency of coalescence is not a marked feature of congenital syphilis. On the soles and the palms which are favorite sites for the eruption, the lesions are seen as smooth, shiny dark red or brown areas and perhaps an occasional bulla. It is only necessary to remember the main features of the eruption to avoid being led into error. There is a variation in intensity and in distribution, and this variation has led to the description of almost innumerable forms of eruption. The main point is to have a clear idea of the main features of the eruption of congenital syphilis, and this is of value only as it is associated with other clinical features or a history which will warrant us in making a diagnosis.

It is easy to discern the importance of visceral changes which come late in the course of the disease, for the processes of growth and nutrition in the infant are most active and this favors constructive change. Therefore the proliferation of new connective tissue about the parenchyma of any viscus is favored.

In its influence upon the nervous system congenital syphilis frequently shows early effects. It may so affect the nervous system of the fetus as to markedly interfere with normal development. This is usually evidenced by an arrest of brain development which is the cause of many of the cases of idiocy which occur. Or lesions which are apparently identical with those of the acquired form of the disease may be present in the newborn or shortly after

birth. The symptoms which may depend upon this involvement may be varied and innumerable. But evidences of an anomalous or unusual involvement of the nervous system should stimulate a search for evidences of syphilis in the infant.

It is now very generally believed that the *Spirochaeta pallida* is the cause of syphilis. Of course most of the work along this line has been among adults and in the acquired form of the disease. But there is enough evidence to warrant us in conceding that the cause of syphilis has been discovered, although the technique necessary to demonstrate this readily is undergoing rapid change and advancement.

There is every reason to believe that in congenital syphilis the Wassermann reaction will prove and is proving as reliable and valuable as it does in the acquired form. It is freely admitted by the investigators that its value is as proportionately great in the diagnosis of the late hereditary type as in the acquired. So far as I have had an experience with its value in early congenital cases, it has been confirmatory, but the experience along this line has been too limited to give it much value. With the marked improvements which H. Noguchi, of the Rockefeller Institute, has made in the technique there is a stimulus to a wider use of the reaction. It involves but little effort upon the part of the attending physician. Ten or fifteen good sized drops of blood from the ear, passed into a sterile tube (similar to that used for the swabs in diphtheria cultures) and tightly sealed is the material necessary. If this is kept cool, the pathologist has a workable material and it will keep for forty-eight hours. Personally, I feel that this method of examination is on the same plane as many of our other methods (as, for instance, diphtheria cultures) a positive reaction from a case accompanied by suspicious symptoms means the presence of syphilis; a negative reaction means nothing.

42 GATES AVENUE.

THE X RAY FOR THE GENERAL PRACTITIONER.

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A general practitioner has no right to use a drug until he knows its strength, the dosage, and effect to be expected. He must regard x rays in like manner, and I advise a general practitioner not to use x rays until he receives considerable instruction from a competent person, preferably a physician, who has had a large experience. There are many high frequency x ray coils on the market, which the makers sell and give the physician an idea that they can start right in at x ray work, and produce miraculous results with no danger to themselves or the patient. This is not true, and many physicians and patients have suffered severe burns and some even have lost their lives. As I have said before do not attempt to use x rays until you have had instruction from an expert, then start very cautiously. We have no exact method of measuring the dosage, the conditions are so variable, some people are more susceptible to the rays than others. The amount of the

rays given off vary, and the quality of the rays vary. Meters, pentometers, and numerous schemes are on the market, which lead the operator to believe he can have a definite idea of what he is doing, but none are accurate, and they cannot positively be relied upon. Experience and judgment are in my opinion the best methods of measuring x ray dosage to-day. I believe these mechanical measures, such as meters, pentometers, pastiles, etc., are useful, but we must not rely on them alone. To see the average x ray operator among the general practitioner, is to see an individual who has been unthoughtful or careless, one who will bear the marks of his enthusiasm to the grave. They are dying with cancer from chronic irritation, amputations of arms, legs, fingers, etc., as a result of too much exposure.

This subject has occupied much thought from all of us who live within the influence of an x ray field. The operator must protect himself as well as his patients, and he must do so to the greatest possible extent, or he will experience direful results. Sterility is frequent among x ray workers; burns are common, and they heal very slowly if at all. It is but a short time ago that a radiographer from Chicago came to me for advice. He was a wreck, his right hand was burned to the bones, the chronic irritation had set up a malignant growth, and in six months he was dead. The only way to avoid its destructive effects is to keep away from it. Lead screens, gloves, aprons, etc., are only makeshifts that will postpone the evil day, but do not give protection from the charged atmosphere; which is very harmful. The best protection is to shield the tube, use a lead screen, and whenever possible to leave the room while the machine is at work. Many operators have a system of mirrors so they can be in another room and still watch the tube at work.

Now, I have gone into the dangers at some length, and yet I have not given them enough emphasis. You study four years to practise medicine. Do not buy an x ray machine and spend four minutes watching a demonstration by the salesman and then think you know all about it.

The general practitioner may use an x ray machine in a great many cases, such as fractures, foreign bodies, malignant disease, skin diseases, tuberculous glands and sinuses, to outline organs, such as the stomach, and to locate unerupted teeth.

I will first give a few general suggestions: 1. Operators should always keep back of the active hemisphere of the tube and never use the hand fluoroscope. 2. Use a protective shield on the tube and protect the other parts of the body that it is not necessary to expose to the rays. 3. Burns are more easily produced where the circulation is the poorest. 4. When reaction is set up, stop treatment until it subsides, as you may burn the patient badly. 5. A new tube should be used very cautiously until its characteristics are known. 6. Be careful of both yourself and the patient.

Foreign bodies. Metal and glass are easily located. Expose the part twice, and at right angles to each other.

Fractures. Expose same as for a foreign body, that is take two plates, at a right angle to each other; it is also a good plan after setting a fracture

to make radiographs to see that it is in good position.

Outline of organs. The stomach may be outlined by first giving one or two ounces of bismuth subnitrate in oatmeal or milk. The lungs may be radiographed and the early signs of tuberculosis may be easily detected. But this is impossible with the ordinary coil. It requires a heavy coil and an extremely rapid exposure.

Skin diseases. Acne, eczema, lupus, and sycosis respond frequently when all other measures fail. Start in with a small amount of current, a low tube, and short exposures, and watch carefully for reaction, the low tube is quite destructive, and we must be very careful not to overdo, especially in facial acne as the patients will have a wrinkled and aged appearance.

Tuberculous glands and sinuses. These respond readily to x ray treatment. Use a medium tube. I have seen glands disappear that were as large as a walnut, they sometimes break down, but the sinuses quickly heal. When there are a number of large glands, I first remove them by the knife, then give x rays, otherwise there is generally a recurrence. The x ray causes an increase in fibrous tissue and a constriction in the capsules of the glands, thus giving us the best possible results. I am very enthusiastic over this treatment in tuberculous glands, and have had good results in tuberculous joint disease.

Malignant disease. Superficial epitheliomata nearly always respond to x ray treatment, but it requires great care. We must give enough to cause a sharp reaction. Carcinoma does not respond as well as epithelioma, but the ray cures some cases and in inoperable cases certainly does hold it down for quite a time. I believe that it is advisable to have every case of mammary carcinoma x rayed after operation. I am positive that it often prevents a recurrence that would otherwise occur.

Sarcomata. Sarcoma often responds to active x ray treatment; in these cases we use a medium tube, and if the disease does not diminish in vitality in a short time, good results are sometimes obtained by using enough x ray to burn deeply.

Unruptured teeth are easily located by placing a piece of photographic film in black, then ruby paper, and placing it in the mouth and exposing it. Abscesses at the roots of teeth are easily demonstrated, also, and the cause of many cases of obstinate neuralgia may be demonstrated and removed.

Making plates. 1. Have the diseased part as near the plate as possible. 2. The axis of the tube must be at right angles to the plate. 3. The distance from the tube to the plate varies with the thickness of the part to be exposed; a good general rule is to have the anode of the tube at least as far away from the plate as the greatest dimension of the plate. 4. Place the focus of your tube (the source of the most efficient rays) directly above the part to be radiographed. 5. Low tubes do not cause great penetration but with a large amount of current the details are better, but they burn sooner than high tubes. 6. When developing use rubber gloves. I believe the x ray dermatitis on operators' hands is excited by the combination of the developer and the x ray influence on the hands.

I believe the radiographer gets the best results who develops his own plates, as a stranger does not know what he wants brought out, and when one develops his plates he can come to a conclusion as to the fracture or foreign body within a few minutes after making the plate.

308 SOUTH FIFTY-SECOND STREET.

CICATRICAL STENOSIS OF THE PYLORUS.

With Report of a Case.

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and REUBEN CRONSON, M. D.,

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Interference with the proper drainage of the stomach may be caused by functional disturbances, and by a variety of pathological conditions, embracing organic and inflammatory lesions within or without the pylorus. Of the organic lesions within the pylorus, a cicatrix on the site of an old healed ulcer is probably the most frequent cause of constriction. Narrowing of some portion of the duodenum above or below the ampulla, due to an ulceration of the duodenal mucous membrane and consequent cicatrization, not infrequently gives rise to obstruction. Within the pylorus and upper duodenum obstruction may be caused by benign or malignant growths, and externally by pressure from gallstones, inflammatory exudates, and adhesions. Of the functional disturbances pyloric spasm is the most frequent cause, although it is not certain whether such spasm is not based upon some lesion in the pyloric ostium, as a fissure or some other defect in the mucosa. Kinking of the pylorus in extreme gastropsis causes obstruction by the formation of a sharp angle, and in the absence of adhesions may be corrected by mechanical means. The very nature of the disease, when due to mechanical obstruction, argues against the possibility of cure by medical means of whatever nature. The ordinary treatment, gastric lavage, dieting, massage, electricity, and appropriate medication, is efficacious and of permanent benefit in functional pyloric stenosis. In mechanical obstruction, however, all medical treatment is of no permanent benefit, temporary improvement occurring merely during the stage of gastric compensation, and in nonprogressive cases. A realization of these facts should act as a deterrent against useless medical treatment in cases of mechanical obstruction, in which surgical intervention is clearly indicated. Nor is it wise to be misled by temporary improvement, as such does occur during the stage of muscular compensation, but sooner or later dilatation supervenes, and the patient is ultimately, *nolens volens*, referred to the surgeon in an undernourished and weakened condition. It is certainly better practice to have the sufferer operated upon before permanent pathological changes have taken place in the various tissues of the stomach, superinduced by fermentation of stagnant material and by dilatation.

The object of this paper is to emphasize the im-

portance of early surgical intervention in these cases, and to report a case of unusually long duration before the patient was finally relieved by operative interference.

CASE.—Mrs. A., twenty-seven years of age, suffered with dyspeptic symptoms since early childhood. As far back as her recollection went, she suffered with periodical attacks of epigastric pain, nausea, and vomiting. She always ascribed the attacks to some dietary indiscretion. Her general health had always been poor, being thin and pale, and suffering on and off with headaches. There was never any blood in the vomit. For a period of two years her health was quite fair, although she had, even during that period, several mild attacks. During the last fourteen months the attacks had been coming on almost every few days, the vomiting was copious and projectile in character, almost constant epigastric distress, and pain radiating to the right side and the back. Constipation was stubborn and thirst extreme. Physical examination revealed a distended epigastrium slightly tender on pressure. Careful inspection brought to light peristaltic movements in that region. The fasting stomach contained about 100 c.c. of active gastric juice, food material ingested the day previous, fat globules, fatty acid crystals, numerous bacteria, germinating yeast cells, and sarcinae. On aspiration after an Ewald test breakfast 360 c.c. of material was recovered having a strong odor of sulphuretted hydrogen, a total acidity of 70, free hydrochloric acid 30, sarcinae, germinating yeast cells, and muscle fibres. There was no blood found, at any time on examination of the gastric contents or stool.

I concluded from these findings that the motor insufficiency was due to an obstruction at the pylorus. In the light of her previous history it was considered probable that she had suffered in early childhood with a gastric ulcer. During the two years of comparative good health, muscular compensation appeared to have become established until fourteen months ago, when final rupture of compensation occurred, and during that period she suffered from a fully developed gastrectasia.

I lost no time in referring her to my colleague, Dr. Cronson, for operation, who will report the findings on section.

Dr. Cronson's Report.

The patient was referred to me by Dr. Weinstein for surgical intervention. A strictured pylorus due to cicatricial contraction of a healed ulcer located at the pylorus, with consequent dilatation of the stomach, was the indication given by Dr. Weinstein for operative interference.

On opening the abdomen in the midepigastrie region the stomach was found greatly distended, and at the lower anterior part of the pylorus two cicatrices were discovered. The cicatrices were in the circumference of the pylorus, greatly constricting the pyloric orifice. A posterior gastroenterostomy was performed with a short loop of the jejunum so as to avoid the vicious circle. The convalescence was smooth and uninterrupted.

Since then the patient has exhibited no stomach symptoms, and has been steadily gaining in flesh and strength.

Correct diagnosis and appropriate surgical procedure will bring relief to many patients suffering with obscure stomach symptoms of long duration.

825 LEXINGTON AVENUE—133 WEST ONE HUNDRED AND TWENTY-SECOND STREET.

Therapeutical Notes.

The Hypodermic Use of Iron.—According to J. L. Morse (*Journal of the American Medical Association*, July 10, 1909) an aqueous solution of ferric citrate is a very serviceable form of iron for subcutaneous use. It can, he says, be put up in pearls [ampoules] and sterilized, each pearl containing a single dose. The average dose during infancy is $\frac{3}{4}$ of a grain every other day. The solution is said to be nonirritating and its administration is

never followed by induration or abscess if the injection is properly given. A little pain is felt sometimes which may last from a few minutes to an hour. The syringe should be of glass with asbestos packing, capable of being sterilized. The needle must be of platinum as the solution corrodes the ordinary steel needle.

Poisoning from Resorcin Applied Externally.—It is noted in *La Quinzaine thérapeutique* for June 25, 1909, that resorcin occasionally gives rise to grave symptoms of intoxication when applied externally, the symptoms being the same as those observed after a poisonous dose has been taken internally. Attention was first called to this by Kaiser in 1905, and now H. Nothen reports two cases of this form of poisoning. The first case was that of a young man nineteen years old who was treated for eczema with an ointment of ichthyol and zinc oxide. To accelerate the action of the ointment a paste was prescribed to be rubbed in with friction, of the following composition:

Resorcin,	75 grammes;
Precipitated sulphur,	75 grammes;
Zinc ointment,	500 grammes.

Of this ointment 220 grammes were rubbed in at one time. Before the entire amount was used the patient began to complain of feeling ill and showed signs of vertigo. He lay down and lost consciousness. Cyanosis rapidly supervened and the skin became cold and covered with perspiration. The respiration was feeble and rapid; the pulse very rapid; the pupils of the eye contracted and became fixed. Thinking the symptoms were caused by an attack of uræmia, but having an idea that the ointment might have had something to do with them, the latter was quickly removed with ether. The patient regained consciousness for a moment or two and then fell into a deep sleep from which it was impossible to awaken him, notwithstanding the application of hot cataplasms to the extremities, injections of camphor and blood letting. Four hours after the application of the ointment, the patient awoke very sleepy and suffering from a violent headache. He again went to sleep and slept profoundly until the following morning when he awoke in good condition without fever and with a pulse rate of 120. The morning urine contained no albumen or sugar but was colored a dark greenish tint. It contained some phenol and blood pigment. After a few days the patient recovered entirely.

The second case concerned an infant eleven days old who had pemphigus of the head, chest and arms. The general condition of the child was good. In the evening a three per cent. ointment of resorcin was applied. At ten o'clock at night the nurse found the child dead. At the autopsy the pleura and the pericardium were found to be colored a greenish brown, the other organs being also discolored. Phenol was found in the blood and in the urine.

These two cases should point to caution in the external use of resorcin, especially where there is any lesion of the epidermis. By the administration internally of hydrochloric acid simultaneously with the external use of resorcin, the danger of poisoning is lessened.

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NEW YORK, SATURDAY, JULY 24, 1909.

BACILLUS CARRIERS.

The decision recently handed down by Justice Erlanger, of the Supreme Court, denying the application of Mary Mallon for liberation from the isolation hospital on North Brother Island, marks an important step in the administrative control of infectious diseases. Mary Mallon, as most of our readers probably know, is the cook whose status as a probable chronic bacillus carrier was called to the attention of the health authorities by the interesting investigations of Soper. Stool examinations made in the Research Laboratory of the Department of Health showed that this cook, though herself entirely well, was daily discharging enormous numbers of typhoid bacilli. She was therefore forcibly detained at the department's hospital on North Brother Island. The investigations of the past few years have shown that this condition is not uncommon, and an extensive literature has grown up dealing with the subject of chronic germ carriers. The discovery of these carriers has explained many heretofore obscure outbreaks of typhoid fever in asylums, homes, camps, etc. In view of the conclusive evidence that this cook had been associated with some twenty-five cases of typhoid fever in seven out of eight families in which she had worked, and considering also the enormous danger threatening the community, we cannot see how the Department of Health could have acted otherwise than as it did.

According to statistics now available, it appears that about two or three per cent. of persons who have recovered from typhoid fever harbor typhoid bacilli in their intestinal canal for months after the attack. It does not seem reasonable to detain all these individuals in isolation hospitals. What, then, should be done to protect the community? As we view the problem, it would appear feasible to exercise a close supervision of cases of typhoid fever occurring in persons following certain occupations. After all, the danger to the community is largely determined by the likelihood of the typhoid carrier coming into close contact with articles of food and drink supplied to others. Among the instances reported where such carriers have been responsible for outbreaks of typhoid fever, an unusually large proportion of carriers were kitchen and dairy workers. One of the best known instances was that of a baker woman in Strassburg.

At the present time the control exercised over the contagious diseases by the health authorities is influenced to some extent by the character of the premises and the occupation of the family. When a case of contagious disease occurs in an apartment connected with a small store, the family is given the alternative of closing the store or having the patient removed to the isolation hospital. Where a case of advanced pulmonary tuberculosis occurs in a homeless individual living in a lodging house, removal to the hospital is also resorted to. Furthermore, in all cases of diphtheria the patient remains quarantined until a culture has shown him to be free from Klebs Loeffler bacilli. In the case of typhoid bacillus carriers, a combination of these procedures might be carried out. Whenever a case of typhoid fever occurred in a cook, kitchen helper, waiter, or other person coming in close contact with food supplied to others (milkmen, fruit peddlers, oyster dealers, and the like), the patient could be quarantined until stool examinations had shown that no typhoid bacilli were present. With the recent advances in bacteriological technique, such examinations are easily carried out.

It may be said that the treatment of this condition is very unsatisfactory. In some instances the bacilli have come from a chronic inflammation of the gallbladder, and recovery has followed on removal of this organ. A few cases seem to have been favorably influenced by bacterial vaccines, and some appear to have been benefited by the administration of hexamethylenamine. In many cases, however, no form of treatment has availed. In his decision Justice Erlanger said: "While the court deeply sympathizes with this unfortunate woman, it must protect the community against a recurrence of spread-

ing the disease. Every opportunity should, however, be afforded her to establish, if she can, that she has been fully cured, and she may, after further examination, renew the application, or, if she prefers, the matter may be sent to a referee."

WESTON'S WALK ACROSS THE CONTINENT.

When a man of seventy deliberately states his intention of taking a walk across our continent, the mere announcement causes smiles. When he announces at the end of 105 days that the walk is accomplished—and it matters little whether the time actually consumed is 100 or 105 days—incredulity gives way to admiration. An average of nearly forty miles a day, a burden of seventy years, heat, storms, desert, mountains, insufficient sleep, often insufficient food, travel in the darkness of the night, travel on railway ties—what a collocation of unfavorable conditions thus bravely and triumphantly overcome!

This is a performance well worth a few moments of careful reflection. The fuel which kept this engine in such successful operation was not remarkable, for we are told that it consisted principally of eggs and milk, and plenty of both. Easy shoes, probably renewed occasionally, and loose, easy fitting garments formed another necessary portion of the equipment. We do not learn that there was any particular resort to alcohol or tobacco, if any. There were intermissions for fifteen Sundays, and there was such sleep as could be had in the intervals of walking. As a result of this effort, we are told, Weston is in good spirits, in good physical trim, and thinks, at least for the moment, that he could make the return journey in ninety days, with good weather and good luck. Here is another demonstration that it is neither fair nor just to say, as a generalization, that a man's best work has been accomplished when he reaches the age of fifty.

With the one exception of those who devote themselves to severe physical exertion in their daily occupation, what class of men are not better, and in very many instances more productive, after than before fifty? The attempted shelving of a vast number of most useful workers is one of the unfortunate sequels of the misinterpretation of Osler's injudicious statement of a few years ago, and the effort of the *New York Times* to encourage to renewed energy those who have been discarded because of their gray hairs is most praiseworthy. What have we at fifty, assuming that there have been good inheritance, good habits, and a reasonable record for industry and correct living? Ex-

perience, which ought to be valuable, maturity of judgment, steadiness and persistency of effort, and, if not the physical endurance of youth, a greater husbanding of the physical resources and a lessened susceptibility to certain ills to which youth is particularly exposed.

Certainly, in the region of mind, if we call the roll of those who are doing the most conspicuous work at the present time, sustained work, we cannot fail to be impressed with the fact that there are very few who have not passed the age of fifty, and many of the most active among them passed it long ago. The lesson of Weston's accomplishment need not stimulate to any similar or analogous test of physical endurance. It does suggest that with proper regard for sanitary conditions we may reasonably hope for a prolonged period of physical and mental effort, far beyond the arbitrary period of the fiftieth year. If physical and mental force persist, therefore, let these be the criteria, and not an arbitrary one of a certain number of years which shall determine the privilege of an individual to work and enjoy the fruit of such work.

THE IMPENDING TARIFF.

In some of its aspects the tariff bill now before Congress is of particular interest to medical men. Among other provisions there is one for raising the duty on mosquito netting from sixty to a hundred and fifty per cent. Some of the southern newspapers are properly indignant over this proposal. The *New Orleans Times-Democrat* says: "As the mosquitoes are the transmitters of disease, and especially of malarial fever, one of the greatest scourges of the South and West, claiming over twenty thousand victims annually, the Senate is asked to vote to double the number of these victims, to double the amount of sickness and suffering, to swell the mortality lists that a few persons may double their profits."

The *Charleston News-Courier* quotes the foregoing and adds: "The mosquito net is the sole preventive of yellow fever. To some sections of this country it is more important than any medicine. The death beds of medical martyrs have made a necessity of this former luxury. Mosquito netting is more deserving of a bounty than a duty. Any attempt to make its cost prohibitive is well nigh criminal. Will the President sign such a measure?" We quite agree with both the newspapers mentioned and we believe that they voice the feeling of the medical profession in general. Safeguards against disease must not be arbitrarily placed beyond the reach of the poor.

We understand that some of our manufacturers are urging the establishment of a duty on scientific instruments, such as microscopes, imported for the use of benevolent and educational institutions, those instruments being now on the free list. But these same manufacturers have prospered under the restricted free importation, and we cannot see that they are justified in their demand for a measure which is sure to cripple the efficiency of many a teaching institution. Microscopes employed in colleges are not appliances by means of which men make money; they are simply indispensable means of instruction. And the same is true of other scientific instruments.

THE "TYPHOID FLY."

It seems that this apt appellation is to be credited to L. O. Howard, Ph. D., chief of the Bureau of Entomology of the Department of Agriculture, for in a recent pamphlet issued by the bureau, entitled *Economic Loss to the People of the United States through Insects that Carry Disease*, he says: "The name 'typhoid fly' is here proposed as a substitute for the name 'house fly,' now in general use." The term may appear to savor of excitement, and it is of course quite true that typhoid fever is not by any means the only disease conveyed by flies. Nevertheless, to stigmatize the fly as the carrier of that disease, one that figures largely in our mortality lists, is to stimulate popular effort for the extermination of the plague of flies, and thus at least help to rid us of an unmitigated nuisance.

Dr. Howard has provided the community with a graphic account of the pathogenic activities of flies, mosquitoes, fleas, and ticks, and the result ought to be a more vigorous campaign against such insects. There is all the more ground to hope for such an outcome when we reflect that the damage to property as well as to the public health is convincingly set forth in the pamphlet, for the mighty dollar is still as potent as ever in the popular estimation.

THE LATE M. ERNEST BESNIER.

M. Besnier, who died on May 15th, in his seventy-ninth year, had for more than thirty years been one of the physicians of the hôpital Saint-Louis. At the time of his death he was the president of the editorial corps of the *Annales de dermatologie et de syphiligraphie*, with which, ten years after the establishment of that journal by M. Doyon, he had become connected in compliance with M. Doyon's wish. He contributed largely and most luminously to its pages. By his writings and

by his teaching in the Saint-Louis he was known throughout the world as a dermatologist of the highest worth. He did not produce a treatise on dermatology, but contented himself with translating and annotating Kaposi's work. The notes, though generally signed by both Doyon and Besnier, were almost wholly of Besnier's production, as we learn from M. Georges Thibierge's obituary of Besnier, published in the June number of the *Annales*.

M. Thibierge tells us that Besnier had for several years been a general practitioner of established reputation, had served for a considerable period as a physician to the Paris hospitals, and had demonstrated his exceptional powers of observation and interpretation when he succeeded Bazin at the Saint-Louis; but such was his modesty that he actually took lessons in dermatology of Doyon before he esteemed himself competent to conduct his service, although he had previously attained to a fair familiarity with skin diseases. His exceeding conscientiousness, according to M. Thibierge, was shown also in all his professional work and in every relation of his life. In his death the world of dermatology has lost a brilliant worker.

CHRONIC INTERMITTENT PRIAPISM.

At a recent meeting of the National Medical Society of France (*Presse médicale*, July 3d) Dr. Bouveyran reported two cases which seem to have been somewhat remarkable. The first was that of a man who had been troubled with priapism for fifteen years. It had first shown itself after an attack of gonorrhoea. For all those years, every night, he had had erections which were extremely painful and long continued, and they were not relieved by coitus. He had no sexual desire, and for him copulation was "a terror." A "therapeutic arsenal" had been tried upon him, but everything had failed. Local treatment, including instillations, cauterizations, and massage, had proved as fruitless as internal medication with bromides and the employment of prolonged warm baths. Lumbar punctures were performed, followed by "injections" of electrical currents. Absolutely no mode of treatment was neglected, but all measures proved alike ineffective. Finally division of the dorsal nerve of the penis was proposed, and it was explained to the patient that such an operation would forever do away with the possibility of an erection under any circumstances. The man gladly accepted the proposal, but his wife vetoed it; consequently to this day the patient is tormented with his erections. The second case was similar, though the trouble did not date back quite so far. It had proved equally rebellious.

THE ANNALS OF SURGERY.

The July number of this excellent journal is expanded to 366 pages of reading matter, with copious illustrations, consisting chiefly of the papers presented at the recent annual meeting of the American Surgical Association and the discussions which followed their reading—constituting, in fact, a volume of transactions. For many years the *Annals* has been advancing in the importance of its contents, and it is safe to say that it is one of the most valuable of the surgical journals of the world. That it should find itself able to afford such an issue as we have specified is only one indication of its prosperity.

News Items.

A Tuberculosis Clinic at the Elizabeth, N. J., General Hospital was opened on July 15th. This clinic will be held at the hospital every Thursday afternoon at four o'clock.

The Oregon State Board of Medical Examiners held a business meeting on July 7th and elected the following officers for the ensuing year: President, Dr. E. B. McDaniel; treasurer, Dr. A. F. Watson; secretary, Dr. R. C. Colley.

The Franklin District, Mass., Medical Society held a regular meeting on Tuesday, July 13th, in Greenfield. Dr. L. A. Newton, of Greenfield, read a paper on Rheumatism and its Treatment, and Dr. C. M. Greenough, of Greenfield, presented a paper entitled *The Feeding of Children*.

The Eighth International Conference on Tuberculosis was opened in the Riksdag Chamber, Stockholm, Sweden, on July 8th. The discussions covered a wide field of preventive measures, fresh air treatment, and other modes of treating the disease. The compulsory registration and segregation of tuberculous patients was advocated.

A New Nurses' Home in Brooklyn.—Plans have been filed for a nurses' home to be erected by the Jewish Hospital, formerly the Memorial Hospital, at Classon and St. Mark's Avenue, Brooklyn. The hospital has purchased a plot in Prospect Avenue, east of Classon Avenue, and on this the new building will be erected, the architecture of which will correspond with that of the hospital. The estimated cost is \$100,000.

Another Floating Hospital for Consumptives in New York.—The old ferryboat *Susquehanna* was placed in commission on July 16th as a floating sanatorium for tuberculosis patients. The boat has been fitted up properly and is anchored in the Erie Basin. It was presented to the Brooklyn Bureau of Charities by Miss Mary Harriman, daughter of Mr. E. H. Harriman, who contributed part of the funds for remodeling it, the remainder being provided by the Brooklyn Bureau of Charities.

An Outdoor Colony for Tuberculous Children was opened at Goodwin Park, near Hartford, Conn., on Monday, July 5th. The Red Cross Society has furnished the money for this work, which is patterned after the Boston out of door school. It is not a tuberculosis hospital. Its aim is to take charge of weak children who are in danger of contracting tuberculosis, and so direct their work and their play, their eating and resting, as to make them strong. Dr. Edward B. Hooker is treasurer and manager of the school.

New Staff of the Memorial Hospital, Richmond, Va.—At a recent meeting of the board of directors of the hospital, Dr. Lewis C. Bosher was appointed chief, and the following names were added to the visiting staff: Seniors—Dr. Edward P. McGavcock, dermatology; Dr. St. George Grinnan, pediatrics, and Dr. R. H. Wright, ophthalmology. Juniors—Dr. C. W. Massie, Dr. Hunter R. Scott, Dr. H. B. Sanford, and Dr. T. D. Jones, obstetrics; Dr. McCaw Tompkins and Dr. H. Norton Massey, abdominal surgery; Dr. Sidney Baker and Dr. B. Giles Cook, gynecology; Dr. F. H. Terrell, general surgery, and Dr. B. M. Rosebro, Dr. E. W. Gee, and Dr. B. L. Taliaferro, diseases of children.

Deaths of Eminent Foreign Medical Men.—Dr. Heinrich von Ranke, professor of diseases of children in the University of Munich, died recently aged seventy-nine years.

Dr. Oskar Emil, emeritus professor of physics at Breslau, has died at the age of seventy-four years.

The death is announced of Dr. Alfred Partheil, professor of pharmaceutical chemistry at Königsberg, aged forty-eight years.

Dr. Wilhelm Engelmann, professor of physiology in the University of Berlin, died recently, aged sixty-five years.

Dr. Pfannenstiel, professor of obstetrics and gynecology at the University of Kiel, Germany, died on July 3d, from septicæmia which he contracted while performing an operation recently. He was forty-seven years of age.

Mothers Instructed in the Care of Children.—Dr. John M. Connolly, of Boston, assisted by a corps of physicians expert in the care of babies, has organized under the Committee on Milk and Baby Hygiene a series of consultations with the mothers who obtain milk for their babies from the committee's stations. It is said that this work is patterned directly after that of the late Dr. Pierre Budin, of Paris, whose name is honored throughout France for his great work in saving the lives of thousands of children every year by this system. At these consultations the babies are examined, medical treatment given where necessary, the mothers receiving instruction regarding bathing, feeding, etc. Among the physicians who are aiding Dr. Connolly in this work are Dr. William Kelly, Dr. Louis Arkin, Dr. Max Sturtnick, Dr. Gerardo Balboni, Dr. Joseph Bianco, Dr. Rocco Brindisi, Dr. William P. Emerson, Dr. E. E. Sanger, Dr. Roland W. Brayton, and Dr. Vernon H. C. Morse.

To Suppress the Opium Evil.—The State Department has requested all the countries which participated in the conference of the International Opium Commission, at Shanghai, China, last February, to send delegates to a second conference, which is to be held at The Hague in the near future. This second conference will be devoted to a discussion of means for the international control of the production, manufacture, and traffic in opium, with a view to the complete suppression of the use of opium except for medicinal purposes. The hope is expressed by the State Department that the conference will also take up the question of cocaine and other narcotic and habit forming drugs. Legislation is being prepared by Mr. Hamilton Wright, one of the American delegates to the conference at Shanghai, for submission to congress, which, if enacted, will place the manufacture and interstate traffic in all habit forming drugs under the supervision of the Bureau of Internal Revenue.

Personal.—Dr. Aristides Agramonte, of Havana, Cuba, president of the Commission on Infectious Diseases of the Republic of Cuba, spent Tuesday and Wednesday, July 13th and 14th, in Philadelphia inspecting the methods elaborated by the Department of Public Health and Charities for the management of transmissible diseases.

Dr. H. K. Beatty, sanitary superintendent, Philadelphia Health Department, was on July 7th presented with a handsome gold shield, on which was inscribed his official position, by the inspectors of the three bureaus under his supervision.

Dr. Mary Merritt Crawford, the first woman to serve in a Brooklyn hospital in the capacity of ambulance surgeon, house physician, and house surgeon, severed her connection with the Williamsburgh Hospital on July 15th. On the evening of July 14th her associates on the house staff of the hospital gave a dinner in her honor in the hospital, and presented her with a valuable set of surgical instruments.

Gifts and Requests to Charity.—By the will of Elizabeth F. Prud-Homme, the Episcopal Hospital of Philadelphia becomes a contingent legatee of an estate valued at \$200,000.

The Misericordia Hospital, of Milwaukee, Wis., has received a donation of \$500 from five Milwaukee men, besides a number of smaller gifts.

By the will of Katharine C. Smyth, the Methodist Episcopal Hospital, of Philadelphia, receives \$300.

By the will of Mrs. Mary J. Hayward, Frost Hospital, Chelsea, Mass., will receive \$1,500.

The Protestant Hospital for the Insane, at Verdun, Canada, has received from Dr. James Douglas, of New York, the gift of a farm of sixty acres adjoining the grounds of the hospital, valued at \$42,000.

The Mortality of Chicago.—During the week ending July 10, 1909, there were reported to the Department of Health 470 deaths from all causes, as compared with 401 for the preceding week and 510 for the corresponding period in 1908. The annual death rate in a thousand population was 11.23. The total infant mortality was 126; 76 under one year of age and 50 between one and five years of age. The number of deaths from important causes was as follows: Diphtheria, 5; scarlet fever, 7; measles, 8; whooping cough, 3; typhoid fever, 3; diarrheal diseases, 31, of which 25 were under two years of age; pneumonia, 51; pulmonary tuberculosis, 61; other forms of tuberculosis, 7; cancer, 28; nervous diseases, 22; heart diseases, 46; apoplexy, 8; Bright's disease, 39; violence, 43, of which 10 were suicides. During the week 570 new cases of contagious diseases were reported, as follows: Diphtheria, 51; scarlet fever, 76; measles, 280; whooping cough, 25; tuberculosis, 59; pneumonia, 12; typhoid fever, 36; chickenpox, 17; mumps, 9; erysipelas, 5.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 17, 1909:

	July 10		July 17	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	492	142	480	148
Diphtheria	245	27	250	27
Measles	718	31	501	13
Scarlet fever	108	14	107	8
Smallpox	..	..	..	..
Varicella	39	..	13	..
Typhoid fever	31	12	60	3
Whooping cough	40	8	47	12
Cerebrospinal meningitis	8	7	..	8
Total	1,651	241	1,465	234

The Letchworth Clinic for the Home Treatment of Epileptics is to be the name of a dispensary for epileptics which the Society for the Securing of Suitable Employment for Epileptics is planning to establish in Philadelphia. The great need for such a dispensary has been demonstrated by the numerous demands which have been made upon the society since its establishment some months ago. In spite of the fact that in Philadelphia alone there are more than two thousand epileptics, there is no institution where these patients may receive free treatment without leaving home and while at their daily work. The Letchworth Clinic for the Home Treatment of Epileptics and the Society for the Securing of Suitable Employment for Epileptics will have for their object the study of means for the prevention and cure as well as the care of epilepsy, in addition to securing suitable work for those not already employed. The medical staff of the new dispensary is composed of the following Philadelphia physicians: Dr. Matthew Woods, Dr. J. Madison Taylor, Dr. John H. W. Rhein, Dr. C. E. de M. Sajous, and Dr. William M. Capp.

Delegates from the United States to the International Medical Congress.—The list of delegates appointed by the Secretary of State to represent the government of the United States at the Sixteenth International Medical Congress, to be held in Budapest, August 20th to September 4th, includes the following names: Dr. A. D. Bevan, professor of clinical surgery in Rush Medical College, Chicago; Dr. George Dock, professor of the theory and practice of medicine in Tulane University, New Orleans; Dr. R. H. Fitz, professor of medicine in Harvard University, Boston; Dr. H. D. Geddings, surgeon, Public Health and Marine Hospital Service; Dr. J. Riddle Goffe, professor of gynecology in the Postgraduate Medical School; Dr. Ramon Guiteras, of New York; Dr. Charles H. Hughes, of St. Louis, Mo.; Dr. H. L. E. Johnson, of Washington, D. C.; Dr. Graham Lusk, professor of physiology in the University and Bellevue Hospital Medical College, New York; Dr. James McBride, of Los Angeles, Cal.; Dr. L. S. McMurtry, professor of surgery in the University of Louisville; Dr. John B. Murphy, professor of surgery in the Northwestern University, Chicago; Dr. John H. Musser, professor of clinical medicine in the University of Pennsylvania, Philadelphia; Dr. C. A. L. Reed, professor of gynecology in the University of Cincinnati; Major Paul F. Straub, United States Army; Dr. William S. Thayer, professor of clinical medicine in Johns Hopkins University, Baltimore; Surgeon General George H. Torney, United States Army; Dr. Albert Vander Veer, of Albany, N. Y.; and Dr. J. A. Witherspoon, professor of medicine in the University of Nashville.

The Baltimore and Ohio Association of Railway Surgeons met in annual session in Cincinnati recently and elected the following officers for the ensuing year: President, Dr. J. O. Howells, of Bridgeport, Ohio; first vice-president, Dr. S. B. Bond, of Baltimore, Md.; second vice-president, Dr. N. R. Eastman, of Mt. Vernon, Ohio; secretary-treasurer Dr. C. E. Johnson, of Baltimore, Md.; executive, elected for three years, Dr. John Palmer, of Wilmington, Del., and Dr. F. A. Blessing, of Pittsburgh; hold-overs, two years, Dr. M. Leahy, of Tiffin, Ohio, and Dr. T. H. White, of Connellsville, Pa.; one year, Dr. A. C. Harrison, of Baltimore, Md., and Dr. G. S. Wellens, of Barnesville, Ohio. In every respect the convention was one of the most successful in the history of the organization.

The Campaign Against Tuberculosis in Troy, N. Y., which has been carried on for the past eighteen months by the Troy Tuberculosis Relief Committee, has produced very satisfactory results, and the committee expresses great satisfaction in that so much has been accomplished in so short a time. While the result of the work thus far does not yet can be accurately measured at present, the marked reduction in the number of deaths from tuberculosis in the city during the past year is significant. In 1906 there were 243 deaths from tuberculosis, while in 1908 there were but 183, corresponding to an annual death rate of 23.7 in 100,000 of population, the lowest it has been in fifteen years. A free dispensary for tuberculosis patients was opened in June, 1908, and it quickly became so popular that a branch was opened. An important feature of the work of the committee is the securing of suitable employment in the open air for those who are physically able to perform light work. Largely through the efforts of the committee, an appropriation of \$25,000 has been made by the Board of Supervisors of Rensselaer County for the establishment of a tuberculosis sanatorium.

Faculty of the Medical Department of the University of Louisville Reorganized.—The board of directors of the University of Louisville recently dismissed the entire faculty of the medical department of the institution, as it was found necessary to reduce the number of professors on the staff. When the five medical colleges of Louisville were consolidated some time last year, a large staff was the natural result, and the necessity for a smaller one has been demonstrated. The following thirty-five members of the old faculty have been reappointed as the new major faculty: Dr. J. M. Bodine, Dr. Thos. C. Evans, Dr. C. W. Kelly, Dr. William H. Wathen, Dr. J. B. Marvin, Dr. L. S. McMurtry, Dr. H. H. Grant, Dr. H. B. Ritter, Dr. I. N. Bloom, Dr. J. M. Ray, Dr. W. E. Grant, Dr. Louis Frank, Dr. Garland Sherrill, Dr. William A. Jenkins, Dr. John R. Wathen, Dr. George B. Jenkins, Dr. W. O. Roberts, Dr. P. F. Barbour, Dr. A. O. Pingst, Dr. George A. Hendon, Dr. Hugh N. Leavell, Dr. Edward Speidel, Dr. E. R. Palmer, Dr. Bernard Asman, Dr. Charles W. Hibbitt, Dr. Irvin Abell, Dr. V. E. Simpson, Dr. Granville Hanes, Dr. B. F. Zimmerman, Dr. Carl Weidner, Dr. Henry E. Tuley, Dr. John G. Cecil, Dr. William C. Dugan, Dr. S. G. Dabney, Dr. William Cheatham. Dr. J. M. Bodine was elected president, and Dr. T. C. Evans dean.

A Drug Inquiry by the Department of Agriculture.—Bulletin No. 126 of the United States Department of Agriculture on The Harmful Effects of Acetanilide, Antipyrin and Phenacetin, issued July 3, 1909, sets forth the results of an investigation conducted by the Bureau of Chemistry with regard to the harmful effects of acetanilide, antipyrin and phenacetin. Since the passage of the pure food and drugs act on June 30, 1906, an attempt has been made by the department to obtain full and reliable data with regard to the poisonous qualities of the drugs named, with the object of furnishing information to the public which would enable them to understand that these remedies should be employed with caution in the absence of reliable medical advice. The information obtained with regard to the number of instances quoted in medical literature in which poisoning, death, or habitual use had been known to result from the administration of acetanilide, antipyrin and phenacetin is set forth in tabular form. Information, based upon data submitted by physicians, is summarized in another table. The bulletin contains information with regard to dosage, the extent to which the drugs in question are employed by physicians, poisoning and habitual use, the nature of the ill effects produced, etc. It also contains references to the recorded cases of poisoning, together with a brief abstract of each case.

The Health of Pittsburgh.—During the week ending July 10, 1909, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 1 case, 0 deaths; typhoid fever, 7 cases, 3 deaths; scarlet fever, 12 cases, 0 deaths; diphtheria, 3 cases, 0 deaths; measles, 5 cases, 1 death; whooping cough, 38 cases, 4 deaths; pulmonary tuberculosis, 38 cases, 8 deaths. The total deaths for the week numbered 182, in an estimated population of 572,000, corresponding to an annual death rate of 16.54 in a thousand population.

Vital Statistics of New York.—During the week ending July 10, 1909, there were reported to the Department of Health of the City of New York 1,257 deaths from all causes, as compared with 1,516 for the corresponding week in 1908. The annual death rate in a thousand population was 14.37 for the whole city, and for each of the five boroughs as follows: Manhattan, 13.16; the Bronx, 17.39; Brooklyn, 14.81; Queens, 17.89; Richmond, 17.39. The city's death rate for the corresponding period last year was 17.13. The total infant mortality was 479; 303 under one year of age, 89 between one and two years of age, and 87 between two and five years of age. The principal causes of death were: Contagious diseases, 77; malarial diseases, 1; whooping cough, 8; pulmonary tuberculosis, 142; cerebrospinal meningitis, 7; bronchitis, 10; diarrheal diseases, 176; diarrheal diseases under five years of age, 166; pneumonia, 55; bronchopneumonia, 60; suicides, 22; homicides, 5; sunstroke, 7; accidents, 82. There were 119 stillbirths. One thousand one hundred and ninety-four marriages and 2,440 births were reported.

The Health of Philadelphia.—During the week ending July 3, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 17 cases, 2 deaths; scarlet fever, 26 cases, 4 deaths; chickenpox, 25 cases, 0 deaths; diphtheria, 46 cases, 1 death; measles, 69 cases, 4 deaths; whooping cough, 36 cases, 3 deaths; tuberculosis of the lungs, 87 cases, 52 deaths; pneumonia, 11 cases, 17 deaths; erysipelas, 7 cases, 0 deaths; mumps, 7 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 5 deaths; diarrheal and enteritis, under two years of age, 48 deaths; peripneumonia, 1 death; tetanus, 1 death; dysentery, 1 death. The total deaths numbered 470, in an estimated population of 1,565,569, corresponding to an annual death rate of 15.61 in a thousand population. The total infant mortality was 133; 103 under one year of age, 30 between one and two years of age. There were 30 stillbirths; 15 males and 15 females. The total precipitation was 0.21 inch. The temperatures were high; the humidity on the whole was low. On June 27th the maximum temperature was 84°, on the 28th 90°, on the 29th 90°, on the 30th 86°, on July 1st 92°, on the 2d 88°, and on the 3d 85°. Eleven deaths were reported from heat and sunstroke; 4 adults and 7 minors.

Health Conditions in the Philippine Islands.—The Quarterly Report of the Bureau of Health of the Philippine Islands for the first quarter of 1909 presents a very satisfactory showing, as compared with the corresponding quarter in 1908. The mortality rate for the city of Manila has steadily declined, the total number of deaths for the period being 1,954 as against 2,570 for the corresponding period last year. This improvement is no doubt largely due to the elimination of unsanitary dwellings, to better drainage, and it is quite probable that the use of water from the new system has also been an important factor. There were no cases of cholera in Manila during the quarter, and the disease is decreasing throughout the provinces. There were three sharp outbreaks in the provinces, and several minor outbreaks in towns near Manila, but they were easily controlled. The total number of cases reported was 2,221, with 1,405 deaths. Smallpox has made its appearance in a number of places, but no death came to the notice of the health officials in which a good vaccination scar could be found. The complete elimination of smallpox from the Islands will, however, be a slow process, as the climate has a deleterious influence on vaccine, and great difficulty is encountered in getting it to remain in a potent condition. The work of controlling the disease in various parts of the Islands has been continued. At the close of the quarter there were in the Culion Leprosy Colony 1,409 patients. A campaign against hookworm disease has been started. A commission under the auspices of the Bureau of Health, the Bureau of Science, and the Philippine Medical School, has been into the field to make a study of this disease, and the work is being conducted with great thoroughness.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 8, 1909.

1. The Widening Sphere of Medicine, By E. W. TAYLOR.
2. The Gospel of Peace. A Vacation in Norway, By CECIL KENT AUSTIN.
3. The Pharmacopœia: What It Is and What It Is Not, By SOLOMON SOLIS COHEN.

3. **The Pharmacopœia.**—Solomon Solis Cohen remarks that the pharmacopœia should formally exclude nothing which the physician is apt to call upon the druggist to furnish to his patient. It may be that certain drugs or classes of preparations which a thorough investigation, including all sections of the country and the files of manufacturing as well as of dispensing pharmacists, may show to have an insignificant use, can be relegated to a secondary place; but standards should be prescribed and these should remain the legal requirements until altered. They might, perhaps, be allowed to go without revision for a longer period than other remedies. But while basic drugs—using the term pharmaceutically and not chemically—and simple preparations should not be excluded so long as any physician is likely to prescribe them, the case is different as to mixtures. Such composites as paregoric, compound tincture of benzoin, compound tincture of cardamom, etc., and one or two classics, such as Dover's powder and Basham's mixture, ought to be retained. But as to routine mixtures in general, their place is elsewhere. Therapeutically they are not to be commended, but as the demand for them exists, a book of standards is necessary. This is found in the *National Formulary*, which thus supplements the pharmacopœia in a field which the latter is not called upon to enter. The question as to what new drugs, especially among the synthetic, the pharmacopœia should include presents greater difficulties of detail, but the principle is the same. For whatever physicians prescribe, legal standards are necessary. This at once rules out all drugs, old or new, concerning whose manufacture or composition there exists the slightest secrecy; for it is evident that there cannot be a public standard for secret manipulations, or quality or identity tests for that which has no fixed quality and no scientific identity. It would include, however, patented products and processes, and this raises a new difficulty. The preferable procedure in the case of patented products and copyrighted or trade marked names (pending such alteration in the laws of the United States as will prevent such patenting and trade marking, while still leaving to inventors the option of patenting processes), is the following: The Pharmacopœial Convention should direct the Committee of Revision to appoint a special committee upon international nomenclature, which should cooperate with similar committees, to be appointed by the proper authorities, legal or scientific, of other countries. The steps necessary to procure the appointment of such foreign committees should be taken. The International Committee should be a permanent body, whose function would be to examine the present list of synthetic chemicals used in pharmacy, and to assign to each an appropriate name, as nearly as

possible expressive of its chemical constitution, with some significant abbreviation thereof for common use; or, when this is impracticable, some arbitrary name without therapeutic significance should be given. It might be derived from a personal name, as was, for example, quinine, by way of cinchona. The committee should inform the manufacturers of pharmaceuticals that it is prepared to have them submit to it their new products with suggestions for naming, and that it will assign to such products appropriate titles, upon condition that no attempt is made to monopolize them. If new products are introduced without previous submission to the Committee on Nomenclature, and these remedies become of sufficient importance in practical medicine, the committee should proceed in the same manner as with those already in existence, that is, to assign names for scientific purposes. The names approved by this committee should be introduced into all pharmacopœias as official titles, and it follows that authors, editors, and prescribers in all countries should be asked to use only the official names. It is quite evident that manufacturers would soon find it to be to their interest as well as to the interest of medicine and pharmacy to cooperate with the committee. An important step would then be taken toward facilitating that revision of the law which seems necessary before an entirely satisfactory status can be established for this class of agents. Should general international cooperation be impracticable, there might be cooperation with one or two nations. Should this also fail, the American committee should proceed with the work as a part of the revision of the *United States Pharmacopœia*.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

July 17, 1909.

1. Vasomotor and Trophic Neuroses, By M. ALLEN STARR.
 2. The Clinical Study of a Series of Cases of Insanity, By H. A. TOMLINSON and G. H. FREEMAN.
 3. Traumatic Neurosis with Report of a Case, By EARL E. GAVER.
 4. Experimental Pressure Atrophy of the Thyroid with Brief Summary of Knowledge of the Gland, By AXEL WERELIUS.
 5. Undeveloped Lower Jaw, with Limited Excursion. Report of Two Cases with Operation, By VILRAY PAPIN BLAIR.
 6. Neuropathic Keratitis and Some Allied Conditions, with Special Reference to Treatment, By F. H. VERHOEFF.
 7. Galvanocautery Puncture in Ectropion, By S. LEVIS ZIEGLER.
 8. Tenotomy or Advancement, By LUCIEN HOWE.
 9. Treatment of Occupation Neuroses and Neuritis in the Arms, By J. MADISON TAYLOR.
 10. Isolated and Complete Paralysis of the Third Nerve of Traumatic Origin, By LEE MASTEN FRANCIS.
 11. Practical Importance of Hyperphoria in Prescribing Lenses for Use at Particular Distances and in Different Directions, By M. D. STEVENSON.
 12. Localized Facial Sweating, Following Certain Olfactory Stimuli, By GROVER W. WENDE and FREDERICK C. BUSCH.
4. **Thyroid Atrophy.**—Werelius remarks that in spite of the enormous amount of work done on the gland, we are still only in the outer trenches of the thyroid citadel. The whole subject, as it is now presented to us, is a mysterious labyrinth of opposing factors. The thyroid gland is essential to the

well being of the organism, but not to life. The gland contains iodine, which seems to have some relation to the physiological activity of the gland. Iodothyron may contain the active principle of the gland. The removal of the gland causes marked metabolic disturbances, but tetany is not due to removal of the thyroid. There is probably an internal secretion. The gland may have some action on the cardiovascular system. The thyroid gland may have a detoxicating function, and it may have some relation to other ductless glands. It is seemingly functionally independent of the parathyroid. Graves's disease is probably due to hypersecretion of the thyroid. The blood picture may be pathognomonic and also prognostic. There is probably a distinct pathological picture in Graves's disease. Basedow like symptoms have been produced by overdosing the system with thyroid products. Transplantation has so far been unsatisfactory. From his experiments he finds that destruction of the thyroid gland of dogs may be caused by atrophy. The gland which is not operated on also becomes reduced in size in the majority of cases (probably in all). Goitre lymph in dogs probably has some special importance. Some of the goitre dogs exhibit the pathological picture of Graves's disease in man, but the symptomatic phenomena of human myxœdema. A high percentage of Chicago stray dogs have goitre (43 per cent., probably more). Goitre dogs are very susceptible to anesthesia.

7. Galvanocautery Puncture in Ectropion.

Ziegler uses two instruments in his operations for ectropion, a short galvanocautery point and a lid clamp. The galvanocautery point should be short, rather thick and sharpened at the point so that it will puncture quickly. This avoids scarring. The lid clamp is a modification of his chalazion clamp, having a straight edge, which is a perfect guide for the row of punctures. It is made with a sliding catch, instead of the Desmarres screw, which facilitates placing it in position. The clamp makes a bloodless operation, and, to a certain degree, benumbs the tissues and so lessens the pain. If no clamp is available, the ordinary Snellen lid spatula may be slipped under the lid and the margin of the lid held flat by the fixation forceps or by a double lid hook, in cases of entropion. The same method may be reversed in ectropion, the lid spatula being placed outside on the skin surface, and the margin drawn away from the eye by the forceps or lid hook, which is then turned back flat over the lid spatula. He usually uses a four per cent. solution of cocaine on the conjunctiva surface; in nervous, sensitive patients deeper anesthesia is required. Hypodermic injections of cocaine under the skin or conjunctiva will often increase the local anesthesia. In entropion the skin of the lid may be slightly frozen by a spray of ethyl chlorid. In the majority of cases, however, it will be necessary to employ nitrous oxide, ethyl bromide, chloroform, or ether. If ether is used it must be removed before the approach of the hot cautery point or an explosion will naturally occur. The lid clamp is adjusted with its straight bar 6 mm. from the lid margin. The galvanocautery point is applied to the surface with considerable pressure, the button on the handle is

pressed down to turn on the current, while the point is quickly pushed through the cartilage and as quickly withdrawn. The punctures are made 4 mm. from the lid margin, and separated from each other by an equal interval of 4 mm. These should be made on the side on which we wish the contraction to take place, viz., the conjunctival surface in ectropion, and the skin surface in entropion. If necessary, we can repeat the procedure in a few weeks. From one to three sittings will accomplish as much as a plastic operation would do. This procedure possesses the double advantage of causing vertical contraction of the relaxed lid, and at the same time producing shrinkage and shortening of the redundant length of the lid, thus restoring the lid to its normal position.

9. **Treatment of Occupation Neuroses and Neuritis of the Arms.**—Taylor says that in treatment of occupation neuroses measures are indicated which aid elimination, relieve the causes of neural congestion, of hyperæmia, active or passive, in the arterioles of the nerves, the vasa nervorum and their capillaries, including the nervi nervorum; the latter, being swollen, exert a pressure on the surrounding swollen structures, which is the main source of pain; also of the heaviness, loss of power, atrophy, etc. These measures may be summarized as follows: 1. Agents to reduce congestion in the painful areas: A. Drugs which cause general vasodilatation by depressing directly the general vasomotor centre, e. g., sodium bromide, or chloral, or both together, veratrum viride in sthenic cases; the nitrites, etc. B. Drugs which cause general constriction of the arterioles by stimulating the general sympathetic centre, e. g., coal tar products, morphine, atropine, aconitine, gelsemine, cocaine, osmic acid. C. Local remedies which produce reflex constriction of peripheral nerves by irritating directly the cutaneous sensory terminals, e. g., local application of aconitine, veratrine, ethyl chloride, menthol, guaiacol, cocaine, chloral, camphor, galvanism. D. Measures which provoke direct or indirect depletion of perineural arterioles and, therefore, of the endoneural capillaries, e. g., guaiacol to the skin, leeches, venesection, cupping, hydrochloric acid, superheated air, local heat, warm pack to the abdomen, a hot flat iron to the back, etc., to increase the catabolic activity of the trypsin, as chief agent in activating the autoantitoxine. E. Measures which tend to eliminate the causes of the neural congestion. For pain occurring intermittently gross accumulations of toxic materials in the blood should be removed, e. g., by purgatives, the best being castor oil daily for several days. This increases reflexly the relative proportion of autoantitoxine in the intestinal juices. One may also employ saline laxatives, careful dietetic regulation, use of physiologic salt solution or "sea water" to maintain alkalinity of the blood, abundant water drinking. F. Drugs to controvert the gouty state by stimulating the adrenal system. Sodium salicylate, strychnine in full or tonic doses, sodium iodide, colchicum, sodium benzoate. A course of desiccated thyroid (small continued doses) will often accomplish most good. 2. Relief of psychic hypertension. 3. Stretching or traction. 4. Reeducation in coordination.

MEDICAL RECORD.

July 17, 1909.

1. The Enzyme Treatment for Cancer—Final Report,
By WILLIAM SEAMAN BAINBRIDGE.
2. A Contribution to the Study of Tremors,
By M. NEUSTAEDTER.
3. Gastric Surgery of the Present Day,
By ROBERT C. COFFEY.
4. The Treatment of Specific Urethritis (Gonorrhœa) in
the Male,
By JAMES R. HAYDEN.
5. A New Sphygmomanometer,
By J. RUDISCH.
6. A Simple Method for Preparing a Useful Stain,
By ROSCOE W. KING.

1. **The Enzyme Treatment for Cancer.**—Bainbridge refers to his preliminary reports which appeared in the *British Medical Journal* and the *New York Medical Journal*, March 2, 1907, and draws in this, his final report, the following deductions: (1) The internal medication with holadin and oxgall aids digestion and increases elimination. (2) Lotion pancreatis applied locally clears the ulcerating surface by removing organisms, thus aiding in diminishing the absorption of their products. (3) Aiding digestion, increasing elimination (by skin, kidneys, and bowels), and decreasing local absorption are the most important features of the treatment. (4) The régime by increasing resistance may in some cases decrease the rapidity of the malignant process. (5) The patients of control cases given injections of glycerin and water or sterile water alone, plus the régime, did as well as those on the full enzyme treatment. (6) Injectio trypsin, in some cases, seems to cause more rapid disintegration of (to "liquify," according to Beard) cancerous tissue, while it may accelerate the breaking down in the centre of the tumor mass, the periphery is found to be actively growing. When injected into the tumor itself this disintegration is more marked. (8) Because of the tendency of injectio trypsin to disintegrate the tissues, it may be a direct menace to life (a) by eroding large bloodvessels (when the disease is contiguous to these structures, as when deep in the neck or in the pelvis), thus causing death from hæmorrhage; (b) when given in large doses, over considerable periods of time, by overwhelming the system with toxic products (tumor toxines), thus, in some cases, hastening death. (9) The injections are often painful, and patients many times refuse to take them. (10) The so called "trypsin abscess" proved, upon examination of the material, to be unabsorbed injectio trypsin plus broken down tissue. (11) When real abscesses formed they were due to faulty technique, to localization of a general sepsis resulting from the absorption of toxic products, to an accompanying sepsis of whatever origin, or to a complicating acute infection. (12) Injectio amylopsin seems to diminish cachexia in some cases. (13) In some cases there was no reason to believe that injectio amylopsin exerted the action claimed for it. (14) When amylopsin was injected directly into the indurated area left after injecting trypsin, absorption of the trypsin solution was not hastened. (15) One hundred minims daily of the "quadruple x" solution, the strongest made, were given in some cases with no untoward effects. (16) Improvement in hæmoglobin (5 to 12 per cent.) during the first few weeks or trypsin treatment occurs in about one sixth of the cases examined. In only one third

of these was the increase ascribable to the trypsin alone. (17) A gradual and moderate increase in the number of polymorphonuclear neutrophile cells was noted during the first two weeks of the trypsin treatment in a few of the cases. (18) With the exception of two cases such leucocytosis as was noted was attributable to the occurrence of complications during the first two weeks of trypsin treatment. (19) In fifteen out of twenty-two cases a steady increase (6 to 12 per cent.) in the number of eosinophile cells was noted while patients were on the trypsin injections. There was no eosinophilia in the control cases, nor in the cases treated by trypsin given by the mouth. (20) Eosinophilia occurred regularly in cases of carcinoma involving the bones or the intestines, even without the exhibition of trypsin. (21) The claims for eosinophilia as a test have not been substantiated in his experience. (22) Albumin and casts were found in the urine before treatment was begun in two cases. In neither of these was the amount of albumin or the number of casts increased at any time throughout the continuation of the trypsin injections. (23) In severe cases in the very last stages of the disease hyaline, granular, few pus casts, and occasionally albumin, made their appearance. (24) In two other cases in which it was impossible to obtain specimens of urine before beginning the treatment, albumin and casts were present when the cases came under examination; and as the trypsin doses were increased the amount of albumin and the number of casts were increased. (25) Dextrose was at no time found in any of the urine specimens examined, not even when untoward manifestations of trypsin were present and large doses of amylopsin were being given. (26) The series of experiments which were conducted for the purpose of ascertaining the presence or absence of an enzyme in the urine with properties of digestion similar to trypsin, showed the presence of such an enzyme body (irregularly present) in (a) trypsin treated cancer cases; (b) noncancerous untreated cases; (c) cancer cases which had not received the trypsin treatment. (27) The exact constancy of this enzyme body in the urine with reference to the treatment was not ascertained. No enzyme body was found in urines in which there was ammoniacal decomposition. (28) The enzyme treatment as administered in his patients, and according to the suggestions of Dr. Beard, plus important details of régime, does not check the cancerous process. It does not prevent metastasis, and it does not cure cancer.

BRITISH MEDICAL JOURNAL.

July 3, 1919.

1. A Clinical Lecture on Tedious Recovery from Illnesses, By SIR DYCE DUCKWORTH.
2. Surgical Treatment of the Rheumatoid Group of Joint Affections, By ROBERT JONES.
3. A Clinical Lecture on Arthrotoomy of the Knee for the Removal of Inflamed Synovial Fringes and of the Pads of Malignance, By C. B. LEE.
4. Some Aspects of Life Insurance from the Standpoint of the Medical Examiner and the Agent, By A. GORDON GULLAN.
5. Two Cases of Osteitis Deformans (Paget's Disease), By RICHARD MANWARING.
6. A Danger Arising from the Use of Plated Instruments in Ophthalmic Operations, By W. C. ROCKLIFF.
7. The Value of Expert Radiography and Cystoscopy in the Detection of Obsolesced Tubercle in the Kidney, By E. HURRY FENN.

2. **Surgical Treatment of the Rheumatoid Group of Joint Affections.**—Jones adopts the classification of Goldthwaite: Villous arthritis, hypertrophic arthritis, atrophic arthritis, septic arthritis, and chronic gout. In villous arthritis it is often necessary to operate. An incision is made on the more painful side of the joint, generally the inner, and the interior is explored. In the early stages of trouble a slightly oedematous and congested condition of the synovial membranes is found, with reduplication at the cartilaginous edges. In other cases the synovial membrane has been transformed into a mass of short villi, and if traced into the pouches below the vastus, oedematous masses of synovial folds almost gelatinous in appearance present. In other instances long pendulous fringes with fatty extremities float about, and a few loose fibrous bodies are seen. In rarer instances, as soon as the joint is opened, congested mass of long villi, resembling a fine variety of seaweed, brown or reddish brown in color, blocks the wound up. Whatever the variety we meet with, a pair of long curved scissors is introduced into the joint and all synovial excrescences are cut away. This is tedious and difficult, and thorough care should be taken to free the articular surfaces from invasion. An incision should then be made on the outer side of the knee and the clearing process repeated. Atrophic arthritis is perhaps the most crippling of all the varieties. It is the least amenable to surgical intervention, but will, doubtless, in future be a more docile disease in the hands of the physician, who should from the first recognize that the deformities of the limbs may be prevented by simple mechanical devices, and this is most important, especially in the knees. The symptoms of this affliction are, briefly, thickening of the periarticular structures and effusion within the joints. It begins usually in the fingers—spindle shaped swellings affecting the first row of phalanges. The whole of the joints may become affected. A radiograph throws much light on the condition; the bones of the hand are thinned, and sometimes telescopic; the absence of cartilage between the bones, together with a general joint atrophy, are very characteristic. Never let the arthritic wrist, septic or tuberculous, ankylose in a position of flexion. If ankylosis is to take place, see that it does so in the fully extended position. The power of grasp is lost when the wrist is flexed, and it therefore becomes a paramount necessity that no mechanical obstacle should be placed upon rigid fingers. The hypertrophic variety can best be studied in the knee and hip. The condition often affects one or both knees, and may show no tendency to spread to other joints. There is a limitation of movement, some effusion in the joint, coarse creaking, and a fullness around the patella a little later, and any attempt to fully extend the joint is painful. Such cases, both at the hip and knee, are generally handed over to the masseur or to an institute for baths and electricity. Clinical evidence, however, is overwhelming that friction of joint surfaces in the hypertrophic form of arthritis is a factor to be scrupulously avoided. Any treatment which ignores this is faulty. When knees or hips become ankylosed in the course of the disease, as sometimes happens, pain disappears; and when this occurs we usually find the deformity so pronounced as to cripple

ple the patient completely. In knee and hip the extremes of flexion and of extension are most harmful. The motion between these extremes is often quite free and painless. The essential element of treatment is to affix a splint so constructed that it will only allow the joint to move in its painless range. It is, however, in septic arthritis that so much may be done to mitigate the suffering, which often ends in ankylosis, usually with great deformity. If the disease has been severe and there has been loss of bone and the ankylosis seems firmly fibrous, no effort should be made to disturb the union. If there is already a little motion, the experiment may be made by placing a splint over the joint, lightly bandaging the limb. We thus stretch the tissues and combat reaction. In firm fibrous or bony ankylosis of the knee, with or without lateral deviation, the operation of choice is the removal of a wedge so shaped that most of it is derived from the femur, and only enough removed to bring the tibia into correct apposition with the femur, the limb being in a perfectly straight line. If this is accurately done, the subsequent treatment is easy, as the bones remain in excellent apposition with but little extraneous support.

6. **A Danger Arising from the Use of Plated Instruments in Ophthalmic Operations.**—Rockliffe reports a case of acute panophthalmitis after iridectomy. Before the eye was excised, a bright foreign body was noticed during an irrigation floating away with the lotion, and was fortunately secured by the nurse. This turned out to be a piece of plating measuring about 1.5 mm. by 1 mm., and clearly came from some instrument. He therefore examined the forceps and de Wecker's scissors, and found a corresponding deficiency of the plating near the hinge of the scissors, and a second larger strip almost detached. On inspecting his other plated instruments, some also showed signs of the plate peeling off. He assumes that during the iridectomy the fragment had dropped unseen into the anterior chamber or cicatrix, and caused the panophthalmitis. It was suggested that a fault in the copper nickel plating in the presence of a saline solution might set up galvanic action, which would explain the separation of the plating and also the subsequent inflammation produced in the eye.

THE LANCET.

July 3, 1909.

1. The Advisability and the Method of Operating in Cases of Acute Inflammation of the Appendix in the Period from the Third to the Sixth Day.
By C. MANSELL MOULLIN.
 2. The Electrical Reactions of Bacteria applied to the Detection of Tubercle Bacilli in Urine by Means of a Current.
By CHARLES RUSS.
 3. The Opsonic Test.
By F. RUFENACHT WALTERS.
 4. A Case of Multiple Aneurysms of the Aortic Arch and Thoracic Aorta.
By H. EMLYN JONES and T. H. C. BENIANS.
 5. A Report upon the Routine Use, by the Open Method, of a Mixture of Chloroform and Ether.
By FREDERICK W. HEATLEY and JOSEPH RECMFIELD.
 6. High Frequency Currents and their Medical Application.
By C. FRED BAILEY.
 7. A Case of Multiple Intracranial Tumors with Involvement of Both Auditory Nerves.
By GEORGE NIXON BIGGS.
 8. A New Method for Attempting to Secure Sphincteric Control after Colostomy,
By CHARLES RYALL.
 9. An Unusual Case of Extradural (Perisinus) Abscess of Otitic Origin and its Relation to Melancholic Stupor,
By J. ARNOLD JONES.
 10. A Case of Abscess of the Pancreas,
By SETON S. PRINGLE.
 11. Four Cases of Chronic Middle Ear Suppuration with Involvement of the Labyrinth,
By MACLEOD YEARSLEY.
2. **Detection of Tubercle Bacilli in the Urine.**—Russ has made interesting experiments and finds that certain bacteria under the influence of a suitable current aggregate at one or other electrode. The aggregation varies with the nature of the electrolyte, and is probably due to an affinity between the products of electrolysis and the bacteria. It occurs with killed as well as with living bacteria. The aggregation by electrical currents affords a means of collection and examination, and was found of greater detective capacity in certain of the experiments undertaken than was the centrifuge. The differences in behavior of various bacteria are such as to suggest the possibility of utilizing the method for purposes of specific discrimination, but in this particular the data hitherto obtained are insufficient to warrant definite statements.
4. **Multiple Aneurysms of the Aortic Arch and the Thoracic Aorta.**—Jones and Benians report such a case. The interesting features of their case are: The absence of any of the usual determining circumstances of aortic aneurysm—viz., syphilis, alcohol, hard work, etc., or of any evidence of a long sustained high blood pressure. The extraordinary tendency for clotting and attempts at spontaneous cure. Even when rupture took place and oozing commenced this stopped for a few days, a large clot forming, until the final more extensive rupture proved immediately fatal. The old history of hæmoptysis, evidently one of the dilatations (probably that of the descending arch) ulcerating into the trachea two years previously. The ulceration on the trachea was seen post mortem, and though old tuberculosis was present at the left apex, no extensive tuberculous process had invaded the lung, making it practically certain that the large sudden hæmoptysis was of aneurysmal origin. The spontaneous cure of the aneurysm of the right side with a cessation of symptoms, followed two and a half years later by it again becoming patent after the appearance of the larger and more rapidly growing dilatation of the left side. The multiplicity of the dilatations.
6. **High Frequency Currents and Their Medical Application.**—Bailey says that experiment on animals and plants, observations on human beings, not founded on the individual experimenters' own statements, show that there are four marked effects of electric energy produced, uncomplicated by chemical effects, by high frequency currents: (1) Increased cell activity, increased metabolism; (2) return of a locally inflamed tissue to its normal; (3) either general vascular dilatation or contraction, according to the particular method used; and (4) "inhibition," diminished sensory or motor excitability. So that where one or more of these effects are desired and where the remaining effects are not prejudicial, or can be very much diminished

or abolished, there high frequency treatment may be of real value, and for these reasons has a prospect of considerable therapeutic use in the future.

8. A New Method of Sphincteric Control after Colostomy.—Ryall describes his method thus: The rectus is split vertically and the sigmoid is drawn out and divided at a convenient point. The lower segment is closed and replaced in the abdomen. The upper segment is made less bulky by removing the appendices epiploicæ and freeing it of mesenteric fat, but without in any way interfering with its blood supply. The artificial sphincter is then made in the following manner. A loop of muscle fibres is separated from the posterior aspect of the rectus on either side of the wound. Each loop is then drawn over to the opposite side of the wound, so that one loop overlaps the other. The overlapping loops thus form a ring and through this the bowel segment is drawn. Sutures are then inserted to keep the muscle fibres together above and below where the bowel comes through. Anchoring stitches are inserted through the skin and muscle inside to keep the bowel in position. The wound is then closed above and below the bowel and the cut edges of the latter are sutured to the skin. A double sprinter is thus formed consisting of longitudinal and circular fibres. The longitudinal fibres are those of the anterior portion of the rectus and the circular fibres are formed by the loops from the posterior part of the rectus. This operation can be modified by making double loops on each side and making them overlap one another alternately. A similar operation can be, and has been, carried through the external oblique, and likewise can be done wherever the bowel is brought through muscle. A somewhat similar operation can also be performed for gastrostomy and appendicostomy.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 31, 1909.

1. Diagnosis and Treatment of Tuberculosis of the Bladder and Kidney, By CASPER.
2. Nephrolithotomy or Pyelotomy? By M. ZONDER.
3. The Influence of Hydratic Procedures on the Size of the Heart, By ARTHUR SELIG.
4. The Amount of Antitrypsin in the Blood of the Mother and of the Child, By GEORG BECKER.
5. Vaccine Therapy, By GEORG WOLFSOHN.
6. A Case of Partial Duplication of the Iris, By GEORG LEVINSOHN.
7. Diseases of the Eye (optic atrophy) from Atoxyl (and Arsacetin), By PADERSTEIN.
8. Thyresol in the Treatment of Gonorrhoea, By J. COHN.
9. The Use of the Paramidobenzoic Acid Ethyl Compound Ether and the Preparations Sabowag and Cocainolereme, By R. PINNER and W. SCHMIDT.

1. Tuberculosis of the Bladder and Kidney.—Casper maintains that every operable case of tuberculosis of the kidney should be operated on. The conservative method of treatment with tuberculin has not yet been proved efficient. The best means for combating tuberculosis of the bladder is to remove the diseased kidney and afterward treat with injections of sublimate and tuberculin.

3. Influence of Hydratic Procedures on the Size of the Heart.—Selig says that it may be stated in general terms that warm baths diminish the size, and that cold baths increase the size of the heart, but in a minority of cases the effects

duced are the exact opposites. Hence, in each individual case the effect of any procedure must be ascertained and therapeutic measures adopted in accordance with those individual findings, as hydratic procedures have a powerful effect upon the heart and vascular system.

4. Antitrypsin in the Blood of the Mother and of the Child.—Becker shows that the antitryptic power of the blood serum of the child is less than that of the blood of the mother and that frequently the difference is very marked.

5. Vaccine Therapy.—Wolfsohn states that with proper dosage and the observation of certain precautions the vaccine therapy is to be considered as perfectly harmless. In properly selected cases, particularly in surgical tuberculosis and staphylococcus infections, good therapeutic results may be obtained from the specific treatment, even when all other means have failed. In general infections the treatment is without value. Determination of the opsonic index is not necessary. The general clinical department is the guide to the dosage.

6. Partial Duplication of the Iris.—Levinsohn describes a case in which a triangular bit of tissue extended from the iris into the pupil, where its apex was adherent to the anterior capsule. This condition has been described heretofore as one of persistent pupillary membrane, but the writer argues that it should be considered rather as a duplication of the iris.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

June 1, 1909.

1. Is the "Phrenocardia" Described by Max Herz a Distinctive Form of Cardiac Neuroses? By ERB.
2. Tuberculosis Immunopsonie (Bacteriotropine), By BÖHME.
3. The Peripheral Greenish Brown Discoloration of the Cornea a Symptom of a Certain General Disease, By FLEISCHER.
4. Two Peculiar Cases of Foreign Bodies in the Air Passages, By BAYER.
5. The Use of Morning Milk for Infants, By BERGER.
6. Serious Interference with Labor after Fixation of the Vagina. Cesarean Section with Subsequent Total Extirpation, By KNOOP.
7. Modern Methods of Testing the Function of the Ear, By DÖLGER.
8. The Prognostic Importance of the Hemolysis of Streptococci, By SIGWART.
9. Method of Investigation of the Neutrophiles of the Blood, By KOTHE.
10. The Spreading of Typhus in a City (Concluded), By K. R. SCHMIDT.
11. Contributions to Nerve Surgery (Concluded), By K. R. SCHMIDT.
12. Report Concerning the "Prinzessin Arnulthaus für Sauglinge" in Munich for the year 1908, with Special Reference to the Question of Cooked Milk for Infants, By K. R. SCHMIDT.

1. Phrenocardia.—Erb agrees with Herz that there exists a form of psychogenous, sexual neurosis of the heart characterized by three cardinal symptoms, pain, change in respiration, and palpitation, called by the latter phrenocardia, and reports ten cases as examples.

3. Peripheral Greenish Brown Discoloration of the Cornea.—Fleischer believes that the peripheral greenish brown discoloration of the cornea is a symptom of a hitherto unrecognized disease characterized by a nervous disease allied to pseudosclerosis, or multiple sclerosis, and by a symptom com-

plex that of diabetes bronze together with a hæmatochromatosis of the cornea. His argument is based on a consideration of two cases of his own, one reported by Kayser and one reported by Salus.

4. Foreign Bodies in the Air Passages.—Bayer reports two fatal cases in which a foreign body coming from the patient's own body had been inhaled. In one case the foreign body was a tooth, in the other a bit of bone from a necrotic area in the nose.

7. Modern Methods of Testing the Function of the Ear.—Dölger describes two instruments he has devised, one a tuning fork striker, applicable to all tuning forks, the other an improved Edelmänn-Galton's whistle.

10. The Spreading of Typhus in a City.—Kayser gives in detail his observations in Strassburg concerning the means by which the disease was spread, and concludes with the remark that the enormous importance of contact in the widest sense of the word, mediate and immediate contact between the diseased and healthy, demonstrates the necessity of the greatest care in preserving the cleanliness of the hands at all times, but more especially before each meal.

11. Nerve Surgery.—Oppenheim and Krause conclude their extensive paper with a report of a case of enchondroma of the vertebral column that compressed the dorsal spinal cord, symptoms of which appeared five years before. The tumor was removed and the symptoms produced by it improved, but the patient died eight days later. The patient was suffering at the same time from diphtheritic cystitis and pyelitis.

RIFORMA MEDICA.

June 14, 1909.

1. The Action of Some Blood Poisons in Trypanosomiasis, By G. FUSCO.
2. The Behavior of Glycogen in the Parathyroid in Man, in Various Diseases. (Microscopical Studies: II.), By P. GUIZZETTI.
3. Contribution to the Study of Disturbances of the Bladder in Diseases of the Spinal Cord, (To be continued), By L. SEGRE.

1. Action of Blood Poisons on Trypanosomes.—Fusco experimented with certain poisons affecting the blood, in order to show their effect upon trypanosomes. He found that *in vitro*, all the poisons investigated showed a destructive action against these organisms. *In vivo*, however, when given in nonpoisonous doses, they did not all possess this property. The most efficient were found to be potassium chlorate and saponin, with the aid of which the author was able to prolong the life of infected animals. Guinea pigs infected with *Trypanosoma Brucei* were treated with a mixture of arsenious acid and aniline hydrochlorate hypodermically, with the result that the trypanosomes were made to disappear permanently from the blood. The same effect was obtained by injecting the serum of normal rabbits previously treated with the same drugs. It is impossible to say, however, whether the cures were permanent or merely apparently so.

2. Glycogen in the Human Parathyroid in Disease.—Guizzetti found that the glycogen contained in the human parathyroid increases almost constantly in pyæmias, septichæmias, in local sup-

purative conditions (peritonitis, pericarditis, etc.), or in cases after laparotomy even without active peritonitis, and also apparently in progressive anæmias. On the other hand, glycogen is scarce in lobar pneumonia, in degenerative nephritis, atrophy of the kidney, and in acute atrophy or atrophic cirrhosis of the liver. Variable quantities of glycogen were found in the parathyroid in diphtheria, in tuberculosis, in chronic valvular disease of the heart, etc. In typhoid, the quantity varied according to the severity of the disease. In tetanus it was diminished according to the severity of the case. In all these diseases, however, the quantity was altered according to the presence of complications, secondary infections, etc. The conclusion seems inevitable that the parathyroid takes part actively in the diseases mentioned, in virtue of its glycogenetic function. This view is an addition to our knowledge of the function of the parathyroid.

ROUSSKY VRATCH.

May 23, 1909.

1. General Remarks on Cholera in 1908-1909, as Observed in the Obukhoff Hospital in St. Petersburg, By A. A. NETCHAYEFF.
2. On the Union of the Amboceptor with Antigen (To be concluded), By S. M. POGGENPOL.
3. Pregnancy and Tuberculosis (To be concluded), By F. V. BUKOEMSKI.
4. Tuberculosis of the Male Genital Organs (To be continued), By B. N. KHOLTSOFF.
5. The Regulation Army Step from the Physiological Viewpoint (Continued), By N. A. KROUGLEFSKI.
6. On Cancerous Cachexia, By V. M. ZYKOFF.
7. A Case of Rheumatic Spondylitis, By A. A. STACHELBERG.

1. Cholera in St. Petersburg.—Summing up his experience during the recent epidemic Netchayeff points out that the disease was more virulent in 1908-09, as compared with the epidemic of 1892-95. Thanks to the advances in medical science, the recent epidemic was studied more thoroughly and important improvements have been made in the prevention (vaccination), and in the diagnosis (the agglutination test), as well as in treatment (curative serum). In spite of these improvements, however, the percentage of mortality during the last epidemic was not less than during the preceding one. But the explanation of it lies in the virulence of the last epidemic and in the fact that the preventive vaccinations have been applied as yet in but a small fraction of the population. The application of the curative serum has also been carried out on a very small scale up to the present time.

6. Cancerous Cachexia.—Zykoff considers the question as to the rôle of cancerous toxins in the causation of the constitutional decline which characterizes advanced cases of malignant tumors. A practical surgical question frequently arises as to the advisability of operating persons with far advanced cancer. From the studies of Ehrlich, Stickler, von Noorden, Senator, and others, it seems established that serious toxic changes occur in the body as the result of the growth of cancer. Cancerous cachexia is produced by these toxins. Levden's pupils tried to inject cancerous toxins for the purpose of making antitoxines, but these experiments were unsuccessful. In a case of incurable extensive cancer of the breast, Zykoff attempted a similar procedure. The tumor was removed under

aseptic precautions, reduced to a pulp, and its juice filtered through a Berkfeld filter. Small quantities of the resulting fluid were injected into the patient's circulation. After the first injection, the glandular swellings began to soften down, but afterward the process continued to extend rapidly. The patient died a few months later. The same filtrate was injected into the veins of animals, and in all cases increased the frequency and reduced the force of the pulse. Zykoff concludes that growing cancerous tissues contain a protoplasmic poison acting upon the heart muscle, the blood, and the epithelia of excreting organs. Surgeons who aim at a radical removal of cancer early in the disease are on the right track.

ANNALS OF SURGERY.

June, 1909.

1. The Surgical Treatment of Locomotor Ataxia.
By LEGRAND N. DENSLOW.
 2. Traumatic Asphyxia,
By DUNCAN L. DESPARD.
 3. A Case of Stasis Cyanosis following an Epileptic Seizure, Simulating Traumatic Asphyxia.
By E. G. ALEXANDER.
 4. Ligation of the External Carotids,
By ARTHUR LYMAN FISK.
 5. Cystitis and Ulceration of the Bladder in Women,
By JOHN B. SHOBER.
 6. Tuberculosis of the Bladder,
By GRANVILLE MACGOWAN.
 7. The Surgical Treatment of Tuberculosis of the Epididymis and Testicle.
By CHARLES GREENE CUMSTON.
 8. Removal of a Gauze Sponge from the Scrotum, Two and a Half Years after an Operation for Double Inguinal Hernia,
By HERMAN L. KRETSCHMER.
 9. Bone Transference,
By ERNEST A. CODMAN.
 10. Report of Saturday Surgical Clinics for Students,
By JOHN B. DEEVER.
 11. The Volunteer Military Surgeon,
By WILLIAM G. LE BOUTILLIER.
2. **Traumatic Asphyxia.**—Despard reports such a case and cites eighteen other cases from the literature. In this form of suffocating, not only is the air prevented from entering the lungs by their inability to expand, but the contents of the thoracic vessels may be forced out, and, in the case of the veins, the current is reversed, overcoming the valves and damming the blood back into the capillaries. If the force acting is sufficiently great, it is conceivable that the capillary vessels would be dilated to a point where paresis would ensue. The treatment of this condition is directed to the reestablishment of respiratory function, such as artificial respiration, oxygen inhalations, atropine, and strychnine, and when the right side of the heart is dilated venesection is indicated.
3. **Stasis Cyanosis.**—Alexander comes to the conclusion from his observation of such a case that the factors producing this condition are similar to those causing traumatic asphyxia, namely, a fixed thorax, a closed glottis, an increased intrathoracic pressure, a lack of aeration of the blood, and the incompetent and absent valves of the jugular, subclavian, and facial veins. That fractures and dislocations can be produced by muscular action during epileptic seizures is a well known fact. Why, then, during these seizures cannot the intrathoracic pressure be raised by muscular action to a corresponding degree as that produced by trauma. The length of unconsciousness may have been augmented somewhat by the cerebral cyanosis. A small por-

tion of the blood no doubt was outside of the blood-vessels, but from the diffuse bilateral character of the discoloration, and the manner in which it disappeared, he believes that which was extravascular to have been very small.

4. **Ligation of External Carotids.**—Fisk says that in severe and extensive operations either on the neck or face ligation of the carotid has frequently to be done in order to control hæmorrhage, but it does not seem definitely settled which vessel, the common or the external carotid, is the vessel of choice. He reviews the literature and reports four of his own cases, and comes to the conclusion that ligation of the external carotid controls more thoroughly the hæmorrhage than does ligation of the common carotid; there will be less probability of secondary hæmorrhage; and there is no fear of brain complications.

6. **Tuberculosis of the Bladder.**—MacGowan reports three cases of a very unusual condition of obstruction of the outlet of the urinary bladder by growths which, mushroomlike, spring up on a tuberculous focus, within the bladder or the prostatic urethra, and simulate true bladder tumors; and which illustrate very well the extremely virulent tuberculous process that gives rise to such growths. While the thorough removal of these granulomata is rendered obligatory when they interfere with or prevent the act of urination, great care should be exerted to leave no unnecessary raw surfaces; for every such space is vulnerable and will be attacked by the bacilli. Healing of the wounds will be slow in any case and perhaps never take place in some.

9. **Bone Transference.**—Codman cites the case of an osteomyelitis, in which he transplanted the fibula with the diseased tibia. A curved incision five inches in length was made across the leg about four inches below the patella down to the lower edge of the upper fragment of the tibia. The tip of this fragment was chiselled clean and the fibula cut across a little above the same level. By bending the leg outward the upper end of the lower fragment of the fibula was forced into the place prepared for it in the upper fragment of the tibia. It was then forced a little way into the spongy bone and the whole leg brought into a straight line. The dead space left at the point whence the fibula was transferred was filled with a portion of the tibialis anticus muscle. The whole leg was put up in plaster, and five weeks after operation the patient left the hospital with wound all healed and fair union between the tibia and transplanted fibula. The condition of the leg has proved permanent, over three years having elapsed since operation.

AMERICAN JOURNAL OF SURGERY.

June, 1909.

1. Acute Pancreatitis: Symptoms and Treatment.
By JOHN F. ERDMANN.
2. Electrotherapeutics in Some of the Diseases of the Genitourinary Tract,
By FRANCIS H. BERMINGHAM.
3. The Conservative Treatment of Tuberculous Joints.
By H. A. PINGREE.
4. Remarks on the Operative Treatment of Saphenous Insufficiency,
By JOSEPH S. LEWIS.
5. Treatment of Talipes Equinus Varus by Plaster of Paris,
By EDWARD LEON BARNETT.
6. Practical Deductions Regarding Weak Foot,
By CARL R. NEWBERG.

7. The Versatile Omentum, By F. A. DUNSMOOR.
8. Congenital Sacral Tumor with Report of Case, By WILLIAM FRANCIS CAMPBELL.
9. Surgical Treatment of Epilepsy; with Report of a Case, By G. F. SHIELDS.

1. **Acute Pancreatitis.**—Erdmann describes the symptoms thus: The onset of acute pancreatitis is usually a sharp pain, accompanied with varying degrees of shock, rapidly followed in some cases by a profound toxæmia, denoted or characterized by a peculiar cyanosis and lividity, with shallow breathing and rapid pulse. Halstead also calls attention to the lividity of the face and abdominal wall. The pain is frequently of a far more intense degree than that of appendicitis or gastric perforation, etc. Hiccough is a symptom of relative frequency and persistence; there is vomiting with and following the pain onset. Pain in the back, of an intense splitting character, is evident. These symptoms, when considered with a history of previous digestive disturbances and gallbladder or duct invasions, should cause us to give the subject of pancreatitis great weight. The subsequent manifestations are those of any ordinary peritonitis, i. e., abdominal distension, obstruction due either to pancreatic pressure or intestinal paresis. Later, a tumor formation anywhere in the epigastric, or rather, supraumbilical zone. If we are in doubt, we should explore. If upon exploration we meet with a peculiar bloody, beef brothlike serum, or peculiar warty, yellowish white plaques (fat necrosis) upon the omentum or mesentery (provided no strangulations exist as a cause of this bloody serum), we can safely extend our search to the pancreas. If an acutely hæmorrhagic, enlarged pancreas is found, an incision should be made in its coat of peritonæum, and a puncture or punctures made in the pancreas itself. Gauze, or other drains, should be placed in and about these incised and punctured areas. If gangrenous or suppurative drainage sufficiently free to allow of ready expulsion of the sloughing material and drainage of the pus should be provided, either by the anterior route, or in the costovertebral angle. The question of doing a cholecystotomy or not is one that each individual case itself will present for consideration. Erdman reports six cases and calls attention to the marked pain at the onset, the sharp intoxication of some of these cases, the dyspnoea and lividity seen in many, the constant splitting backache, and finally emphasizes early exploration when a given set of symptoms, as he mentions, manifest themselves.

3. **Conservative Treatment of Tuberculous Joints.**—Greene says the fundamental principle of conservative treatment is physiological rest. Rest in this sense means cessation of all functions; the joint must neither bear weight or strain nor be moved in any direction. To all this must be added protection; that is, a certainty that it shall be free from blows, jars, or pressure. A patient may rest more or less comfortably in bed, when tuberculosis of the hip joint is present, but if he sits up even once, he moves the joint, and may do more damage in that one instance than Nature can repair in weeks. On the other hand, the patient may be very active and get about constantly, and still, with a suitable apparatus applied, may maintain the joint for all practical purposes in a state of perfect rest. A man

with a tuberculous ankle joint may wear a splint upon the extremity which fits to a nicety and which prevents any motion, and yet, if he bears his weight upon that foot, the case may go from bad to worse, and as an end result severe deformity may ensue, or amputation may become necessary. In the treatment of tuberculous joints rest must be secured by appropriate apparatus which must fit the individual patient accurately; and be worn constantly until the disease has entirely subsided, be it one or ten years. If such treatment is consistently followed, the relief will be apparent at once, and the prominent symptoms, such as pain, swelling, and cramps, will cease almost immediately.

4. **Saphenous Insufficiency.**—Lewis describes the method used in the German Hospital, of New York, thus: The vein is cut down on in two places at a convenient distance apart. A probe with an eye is passed through the lumen of the vein and attached by the eye to the cut end of the vein. The probe is now withdrawn in the direction of the unattached end, so that the vein is withdrawn from its bed through its own lumen. It is unnecessary for the assistant to start the inversion with forceps as the attachment of the vein to the surrounding connective tissue affords a natural means to this end. An objection to a probe with an eye is, that the vein is prone to slip off and draw, not from the probe, but from the ligature threaded through it. A probe with a groove around it, over which a silk ligature is tied makes a firm attachment. In experimenting on a saphenous trunk after removal, the vein on traction invariably tore through elsewhere than at the ligature, so the attachment was at least as strong as the vein.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held in Philadelphia, June 3, 4, and 5, 1909.

(Continued from page 141.)

The Parathyroid Question.—Dr. CHARLES H. MAYO, of Rochester, Minn., said that for more than fifty years reference had been made by various authors to peculiar gland bodies that were quite regularly associated or connected with the thyroid bodies. As stated by careful observers, the glands were four in number, usually without the true capsule of the thyroid gland. They were six to seven mm. long, three to four mm. wide, and two and a half mm. thick. The pathological changes were of simple type, i. e., degenerations, hæmorrhages, cysts, and seldom tumors. In fact, there were but few tumors of the parathyroid reported, most of these being found at autopsy, and all were benign, mostly adenomata. From such reports it would appear that these glands, as compared with other organs, were singularly free from serious diseases, especially those of a surgical nature.

The association of function of the glands like the thyroid, parathyroid, thymus, suprarenal, and others became more marked as continued investiga-

tion disclosed the various changes consequent on disease or removal of the various glands. It was quite possible that the human being with four parathyroids had some to spare, and that if those on one side were preserved, no untoward consequences would follow. This phenomenon had been noted in other double structures—the kidneys, ovaries, etc.

Operations in cases of hyperthyroidism were usually confined to one side, and, the blood supply being free, there was but little danger of subsequent hypothyroidism, the greatest danger occurring from operations on both sides and from secondary operations on the remaining side in single goitre. Should tetany follow the removal of the parathyroids, the indications were to administer calcium salts to maintain life until parathyroid glands could be secured and implanted, as by this means it might be possible to tide the patient over into a chronic state which might later become a cure. In nearly 1,200 operations for goitre they had seen no tetany.

Excision of the Larynx for Malignant Disease.—Dr. JAMES BELL, of Montreal, reported twelve laryngectomies. In his experience partial operations on the larynx were not satisfactory. Excision of the larynx was a safe operative procedure. In seven of the twelve cases the operations were done for intrinsic, far advanced cancer of the larynx; in five for primary disease of the organ. Of the twelve patients, seven recovered.

Dr. W. W. KEEN, of Philadelphia, in 1898, had selected as the subject of his presidential address Total Laryngectomy, and in it he had reported a case of excision of the larynx. The man was now perfectly well, eleven years since the operation. He had recommended at that time that the patient be kept in the Trendelenburg position to prevent aspiration pneumonia.

Dr. GEORGE E. BREWER, of New York, said that the dangers from the operation of excision of the larynx were: 1, Aspiration pneumonia. 2, Extension of the infection downward along the muscular and fascial planes of the neck toward the mediastinum. 3, Too long deprivation of food in old people who were in a bad general state. He believed in early feeding. He introduced a nasal tube into the lower part of the œsophagus, and began feeding as soon as the patient came out of the ether. He began the use of water in about six hours, and gave egg-nogs and concentrated food from the start.

Dr. ROSWELL PARK, of Buffalo, said that his first laryngectomy was done about twenty-four years ago, and the patient nearly died of iodoform poisoning. He was afraid to use iodoform after that, and in a later case employed bismuth subnitrate. This patient died. An autopsy was made, and he found the lining of every bronchial tube smeared with bismuth that had formed a paste, so that the patient died of asphyxiation from the bismuth.

Dr. N. B. CARSON, of St. Louis, after detailing five cases in which he had resorted to laryngectomy, said that rectal anesthesia added very much to the comfort of the patients.

Dr. GEORGE W. CRILE, of Cleveland, wished to report twenty total laryngectomies. There were two immediate fatalities in the first eight, but none in the twelve others. The ultimate results were quite

unsatisfactory. The oldest patient was living between fifteen and sixteen years after the operation, another five years after, one four years after, and one three years after. The remainder had been operated on too recently to be considered at this time.

Further Observations on Transfusion, with a Note on Hæmolysis.—Dr. GEORGE W. CRILE, of Cleveland, said that in pernicious anemia, in toxæmia, leucæmia, Hodgkin's disease, carcinoma, uræmia, etc., no benefit had occurred from transfusion. Cases of hyperthyroidism did not improve apparently by transfusion. In a case of pellagra rapid convalescence was noted after transfusion from an immune donor. In suitable cases it was of great value in the prevention and relief of the circulatory phenomena of shock. He was encouraged by the results of transfusion in pulmonary tuberculosis. As influencing operative surgery, further experience amply confirmed the earlier observations in grave surgical risks by preliminary and postoperative transfusion. There were two notable groups susceptible of results in contemporaneous transfusion, namely, those in which there had been internal hæmorrhage, grave or continuous, demanding operation at the same time, and those in which the patients were reduced by long continued disease, by starvation, or otherwise to such a degree as to render them unsafe for the operation required. In those cases the donor was attached and blood was transferred until the recipient was sufficiently restored to take the anæsthetic. All preparations having been made, the patient was then anæsthetized, and in the course of the operation the needed amount of blood might be transferred from time to time by the assistant in charge at the direction of the operating surgeon. At the close of the operation a sufficient additional amount of blood was transferred to insure the postoperative safety of the circulation.

As to hæmolysis, it must be considered, first, as but one form of manifestation of the final reaction between the blood of one individual and that of another. Second, if there was hæmolysis *in vitro*, it by no means necessarily followed that there would be hæmolysis *in vivo*. Their agreement might be an exception. Hæmolysis was a valuable aid in the diagnosis of active tuberculous reaction, occurring more frequently than in carcinoma. In cancer the reaction was largely dependent upon the stage of the disease at the time of observation. Hæmolysis usually occurred in the early stages of cancer and rarely in its late stages.

The Preservation of Dissections of Surgical Anatomy, with Permanent Color of Muscles, Vessels, Nerves, and Organs, by a New Method.—Dr. EDMOND SOUCHON, of New Orleans, in a paper with this title, said that the details of this experimental work, extending over several years, were to be published, and he wished to recall only the most salient features of this new method. The basic condition was a proper embalming formula which would assure color. The aim was not so much to obtain the real color of the living, as that color varied in the various subjects, but to secure a marked contrast between the fleshy parts of muscles and the tendons, bones, and other white

tissues, doing away with the uniform bleached appearance presented by so many otherwise beautiful preparations seen in the museums in this country and abroad.

After a number of trials, consuming over forty subjects, he had found that, so far, a formula that gave the best results was one of arsenic, formalin, alcohol, carbolic acid, glycerin, and creosote. Very lean subjects should be used.

A feature of some importance was to allow the parts to be dissected to drain for ten or fifteen days before dissecting them. Otherwise the dissecting was rendered unsatisfactory by the infiltration of the tissues by the embalming fluid. After the dissection was completed, it was placed in a glass jar filled with a solution of carbolic acid, one ounce to the gallon. This was changed as often as it was discolored by the blood.

We come now to the next important point, which was the placing of the dissected parts in an empty jar without any solution of any kind, but covered with a lid. He called this stage the curing process. It was second in importance to the embalming, as it developed or brought out again the color without darkening the tendons or other white tissues. It also smoothed the surfaces, which might be shreddy or ragged; it sharpened the edges of the muscles, thus giving better definition; it fixed the color so as to keep it from being perceptibly affected when the specimen was finally put up permanently in a weak solution of alcohol, 20 ounces to the gallon of water. The arteries and veins must be painted with moist water colors, as coloring matter used in the injecting material would not show when the preparations were preserved in solutions.

All solutions should be changed as soon as they became the least cloudy or discolored. This was essential to the permanent beauty. Otherwise the impurities in the cloudy or discolored solutions would settle on the white tissues, stain them, and destroy their whiteness and brilliancy.

Some specimens were refractory in developing color. He estimated, so far, that eighty-five or ninety per cent. of the specimens turned out satisfactorily. The remainder were merely good, but not good enough to be placed in a museum, especially with one's name to them. That uniformity of color and results did not invariably follow uniformity of procedures was due, he believed, to the fact that the chemical composition of the tissues varied with the subjects.

The great practical value of this new method was to give us the means of building study museums composed only of real dissections placed in very large glass jars, in spacious rooms flooded with light, on tables, so that students could readily study them. Thus the students could prepare for the dissecting room. They were assisted in their dissections by referring to the preparations in the museum. Their work in the dissecting room was completed by showing them the great number of things which they never saw in a dissecting room. They were also able to review and fix in their minds what they had really dissected themselves. Practitioners could in a few moments learn much anatomy anew.

Such was the study museum he was now building

for the Medical Department of Tulane University in New Orleans. The museum contained 400 very large glass jars with dissections. He had now 200 good ones and there were 200 to be made over, because they could now be made better, owing to the improvements in the method. It would take about two or three years to make over those 200.

Thoracic Surgery.—Professor FRIEDRICK, of Marburg, Germany, reported eleven cases of unilateral phthisis in which he had resorted to extensive multiple resection of ribs. In two cases of multiple tuberculosis he performed total pleuropneumolysis, and in four partial pleuropneumolysis. He had not lost a single patient from this operation.

Dr. WILLIAM S. HALSTED, of Baltimore, detailed some experimental studies he had made with reference to lung surgery.

Dr. CHARLES A. POWERS, of Denver, discussed surgical measures designed to relieve pulmonary tuberculosis.

Dr. LEONARD FREEMAN, of Denver, said that collapse of the lung might be obtained in several ways—(a) by the production of artificial pneumothorax according to the methods of Murphy and others; (b) by extrapleural resection of the ribs below the first part of the cartilages to the spine, including the periosteum; (c) by removal of portions of some ribs, with periosteum along the axillary line; (d) by resections of portions of several ribs and periosteum directly over the diseased part of the lung, usually a cavity near the apex; (e) by a similar operation, without removal of the periosteum, followed by external pressure by means of a truss. He described an operation which he had done in two cases with encouraging results.

Dr. A. VANDER VEER, of Albany, said that the hypodermic syringe, with a long needle, was of value for exploratory purposes and a safe instrument for a good general practitioner to use when in doubt as to the nature of the lesion that was present. Repeated use of the aspirator was not to be condemned so long as the fluid remained sterile, and was the preferable method of treatment in malignant cases. Where there was some malignancy and the effusion was distressing to the patient, the use of the aspirator afforded great relief. The use of the trocar and drainage tube was advisable if it was shown that the aspirator was no longer affording benefit. Resection of the ribs was necessary when no improvement took place with an ordinary drainage tube. The latter operation should be done early in order to protect the lungs from unnecessary pressure and relieve adhesions, which in the young became so detrimental in causing spinal curvature.

Dr. C. L. GIBSON, of New York, reported an interesting case of tuberculous pericarditis in which he had succeeded in effecting a cure by means of incision and drainage.

The Treatment of Fistulæ and Abscesses Following Operations for Empyema of the Thorax.

—Dr. A. J. OCHSNER, of Chicago, in this paper, illustrated the value of the injection of Beck's paste into persistent sinuses and abscesses following operations for empyema of the thorax. A tabulated list of fourteen cases treated by the author by this method was given. Two formulas were in use: No.

1, consisting of one part of arsenic free bismuth subnitrate and two parts of sterile amber petrolatum, had a lower melting point than No. 2, which consisted of thirty parts of bismuth subnitrate, sixty of amber petrolatum, and ten of paraffin of a sufficiently high melting point to cause the mixture to maintain its form at the temperature of the body. No. 1 was used daily or every second day until the sinus or abscess was practically free from pus, then No. 2 was used, at first every second day, and later less frequently, until healing was completed. These mixtures were injected at 110° to 120° F., by means of an ordinary large glass syringe. Only just enough force was used to fill the cavity. The outer opening was closed with a gauze plug.

The remarkable part of the treatment lay in the fact that an abscess cavity which communicated with a bronchus would heal quite as rapidly and as perfectly as other abscesses, that symptoms of sepsis disappeared rapidly, and that in most cases in which there was no communication with the bronchi the discharge from the sinus soon became sterile.

Visceral Pleurectomy.—Dr. ALEXANDER HUGH FERGUSON, of Chicago, said that by this operation was meant the removal by operation of the thickened visceral pleura in cases of chronic empyema. In six cases in which he had resorted to it the results had been all that could be desired. All the patients gained flesh, and all cavities were completely closed. The youngest patient was twenty-three years of age; the oldest forty-five. The amount of visceral pleura removed varied from a strip an inch long to one four inches wide.

Dr. CHARLES H. PECK, of New York, reported a case of stab wound of the heart in a colored girl. The wound was sutured successfully, and the patient was well, twenty-four days after the operation.

Dr. WILLY MEYER, of New York, detailed a new method of cesophagogastronomy for intrathoracic resection of the cesophagus.

The Prevention and Treatment of the Sequels of Perineal Prostatectomy.—Dr. JAMES E. MOORE, of Minneapolis, said that perineal prostatectomy was a life saving operation, but a grave one, and should not be undertaken lightly. It was accompanied by a mortality rate of a little over six per cent., and over seventeen per cent. either were complete failures or were followed by some sequel that made the operation far from satisfactory. Owing to the age and bad condition of these patients, there must be a mortality rate. The nature of the operation was such that complications and sequels were bound to occur, but at the present time the mortality rate was too high and the sequels were too common. According to the latest statistics, 7.4 per cent. of these operations were failures, but in competent hands the patient should always experience sufficient relief to justify the operation, though he might not be completely cured. When a patient continued to suffer pain and tenesmus after the operation, it was usually due to a pocketed bladder, diseased kidneys, or an incomplete operation.

The prostate was an important sexual organ, and its removal by any route or method was sure to have a decided effect on the procreative powers of

the patient. Owing to the reticence and untruthfulness of patients, it was impossible to state how often this sequel followed, but it was certain that it occurred so frequently that every patient who was comparatively young in years should have this possible contingency stated to him before the operation was performed.

Injury to the rectum was probably the most frequent complication, often causing death, and when a patient survived he was apt to have a urethrorrectal fistula. Unskilful use of fingers, downward pulling by retractors, and too tight packing with gauze were the usual causes, and by guarding against these causes this accident should be avoided. When the rectum was torn it should be immediately repaired. This would often fail, but succeeded often enough to justify the effort.

Stricture was a more common sequel than was generally believed, and was due to extensive removal of the prostatic urethra. We expected injuries to the urethra from other causes to result in stricture, and there was no reason why it should not follow this operation. Enough of the upper wall of the prostatic urethra should be preserved to secure an unbroken mucous surface extending from the bladder to the meatus. Extensive dissection of the perineum, especially when cross cuts were made, was conducive to stricture. Projecting portions of the urethra were sometimes left, which obstructed the flow of urine by acting as valves.

Drizzling or incontinence was an occasional sequel of perineal prostatectomy, and was due to injuries to the neck of the bladder and to the compressor urethræ muscle. Instruments introduced into the bladder to draw the prostate down should be used with the utmost care, lest they injure the neck of the bladder. The compressor urethræ was the important sphincter and should be preserved by opening the prostatic rather than the membranous urethra. The treatment of incontinence when once established seemed to be hopeless. Perineal fistula was a rare sequel and was usually due to the deposit of calcium salts, the removal of which relieved the condition. Epididymitis was an occasional sequel, but was usually of little consequence beyond the discomfort it caused, and was very often due to the injudicious passing of sounds.

Suprapubic Prostatectomy.—Dr. ARTHUR DEAN BEVAN, of Chicago, said splendid results had been obtained by performing both the suprapubic and perineal operations, and, considering the ages of the patients upon whom these operations had been done, the mortality was low. Suprapubic enucleation of the prostate had the widest field of usefulness. All things considered, the cure was more complete by the suprapubic than by the perineal route. The suprapubic was less dangerous and less formidable than extensive perineal dissection. There was no injury done to the musculature by the suprapubic route or perineum, there was very little danger of injuring the rectum, and little probability of stricture or fistula following.

Dr. A. J. OCHSNER, of Chicago, said that he who had done prostatectomy both perineally and suprapubically a number of times must be impressed with the great ease with which the prostate could be enu-

cleated from above. He had removed a large number of prostates by the perineal route, and quite a number by the suprapubic, and had been impressed with the simplicity and ease with which the operation could be done suprapubically.

Dr. ALEXANDER HUGH FERGUSON, of Chicago, said his first twenty-five prostatectomies were by the suprapubic route. Of the patients, he lost eight. He disliked to return to that method. He now resorted to the perineal route. One could operate on almost any kind of enlarged prostate successfully through the perinaeum. If accurate statistics were collected, it would be found that the mortality was twice as high by the suprapubic as by the perineal route.

Dr. JOSEPH RANSOHOFF, of Cincinnati, said the mortality from the suprapubic operation could be greatly reduced if we made perineal drainage by means of a puncture from above.

Dr. MAURICE H. RICHARDSON, of Boston, had seen a good many surgeons operate for the removal of prostates, but never saw one who could see what he was doing to the urethra. Speaking as an anatomist, he had never been able to tell whether he was tearing the urethra to pieces or not when operating perineally or suprapubically. Other surgeons had told him the same thing. The mortality came from the advanced age of patients and not from the operation *per se*.

Dr. S. STILLMAN, of San Francisco, had a decided preference for the suprapubic operation where the urine was healthy, and where the urine could not be rendered healthy the mortality from the suprapubic or perineal operation could be overcome by following a suggestion which had been given to the surgical profession by Sir William MacEwen.

Dr. A. PRIMROSE, of Toronto, said his experience had been confined almost entirely to the suprapubic route. Infection of the pelvic cellular tissue was the cause of death in some cases in which the suprapubic route had been resorted to. It seemed feasible to remove the prostate by the transperitoneal route in some cases, and, if necessary, establish perineal drainage.

Dr. JOHN B. MURPHY, of Chicago, had operated on the prostate first by the perineal route, and then by the suprapubic. Finally, from an experience of 123 cases, he found he could take out the small, firm, hard prostate more easily and safely from below, while the large, thick, juicy prostate he could remove easier and with greater safety to the patient from above.

Dr. LEONARD FREEMAN, of Denver, suggested a method of controlling hemorrhage in connection with the suprapubic operation.

Dr. MOORE said that he expected in five years from now to hear Dr. Bevan read a paper on the complications and sequels of suprapubic prostatectomy. Dr. Murphy stood on solid ground in that he fitted the operation to the case in hand, and did not try to make every case fit one particular operation.

Dr. BEVAN said the evidence was quite conclusive in favor of the suprapubic operation from the standpoint of completeness of the cure and the freedom from complications.

(To be concluded.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

A Manual of Practical X Ray Work. By DAVID ARTHUR, M. D., D. P. H., Medical Officer in Charge of X Ray Department, West London Hospital, and Lecturer on Radiology, West London Postgraduate College, and JOHN MUIR, B. Sc., M. B., Ch. B., and B. Sc. (Pub. Health). With about 120 illustrations. New York: Rebman Co., 1909. Pp. xii-244. (Price, \$2.50.)

The authors have succeeded in condensing into 244 pages the essentials of radiology. This has been done in an admirable manner, most of the subjects being presented in an accurate, easily digested, and attractive style. The book is intended as a guide for beginners, and its conservatism, its lack of padding, and the clearness and terseness of the statements make it particularly suited to the purpose. From the very beginning the student is impressed with the importance and magnitude of the subject. He is taught that one must be more than a mechanic or an electrician; that he must possess a broad general medical education and should have special training in radiology before his work can be associated with safety and value. The authors have purposely omitted all compilation and discussions of unsettled questions, but they have included all that is necessarily essential for an introduction to the subject under consideration, and this lack of confusion and elaboration is just what the beginner requires.

After a very short introduction dealing with the discovery of the Röntgen ray and the evolution of the x ray tube, the authors give a description of apparatus. This consists of several chapters dealing with tubes, sources of supply, and intermediate and accessory apparatus. This part of the book is unusually exhaustive and well presented for such a small book. As in most foreign works, however, the chapter on static machines is very poor. The authors acknowledge this and state that such instruments are not in favor in England, and the reader is referred to larger works on the subject. In general, the description of apparatus favors the English type of construction, but this is not a matter of great importance, inasmuch as the underlying principles are the same in all countries. And it might be added that these principles are very well explained. It is only natural that one should advocate special apparatus that one has designed and used to the exclusion of other types. This is especially noted in the matter of radiographic tables. The authors consider that a table so arranged that the exposure is made from below is the method of election. We freely admit that such a method has certain advantages, but although one well known radiographer of this country makes most of his exposures in this manner, we think that the majority of American radiographers prefer to have the tube adjusted above the patient. Taking everything into consideration, it is questionable if this latter method is not the better one for all practical purposes. Fluorescing screens, both for diagnosis and as a guide to the radiographer in placing his plate and tube or in judging of the penetration of the ray, are employed less in this country than in England or on the con-

tinant, but if one desires to use this method it can be easily arranged on our style of table by the use of mirrors. In fact, every objection to having the tube placed under the patient can be readily countered.

The next subject discussed is photography, in which only two developers are mentioned—namely, “pyro” and dianol. The latter has most certainly been found wanting; “pyro” is an excellent reducer, but at present is employed very little for this purpose. Hydroquinone, the developer so universally used in this country, is not even mentioned.

The chapters devoted to the interpretation of ordinary and stereoscopic radiograms, orthodiagraphy, and the localization of foreign bodies and fluoroscopy are very well done. Considerable space is then given to diagnosis, in which the various parts of the body are separately considered. The choice of vacuum, the exposure, the position of tube and plate, etc., are carefully described. We would, however, recommend a greater latitude in the choice of angles. For the shoulder and hip, for instance, only one position is given—namely, with the plate in front and the tube behind. The reverse position is equally efficacious if not actually superior for routine work, and either one or the other may be required in individual cases. In dealing with dental radiography the authors do not mention the excellent results that may be obtained by employing plates instead of films, and in their description of the method of employing the films they say nothing of the necessary angles. This is really a serious omission, for without suitable instruction it is a difficult matter to obtain a good image of a tooth and have it free from distortion.

In the matter of exposure the authors do not advise speed. This is good advice for beginners, but at the same time it would not be unwise to elaborate upon the advantages of fast work in certain cases. The exposures for dental radiographs, for instance, is given at from one half to two minutes. Unless the head is very firmly fixed, it would be difficult to obtain perfect definition by such long exposures. And in abdominal and thoracic work it is of manifest advantage to make the exposure during suspended respiration.

Although the chapters on diagnosis are fairly complete, we note the absence of skiagraphy of the accessory sinuses of the nose and the bismuth method in abdominal work; and, to be perhaps hypercritical, we think the subject of bone diseases not quite up to the standard maintained throughout the rest of the book.

The illustrations for the most part are good; some are excellent. We would, however, suggest that the next edition contain a larger number of radiographs, to the exclusion of diagrams and the omission of every cut that fails to clearly depict the object for which it is intended.

Only sixteen pages are directly devoted to therapy, but in this short chapter the reader is told of what diseases he should attempt to treat, and, in a general way, how to treat them. The book being entirely free from repetitions, the reader is supposed to combine what he has already learned by a careful perusal of the preceding chapters with the contents of the chapter on therapeutics. In the treatment of ringworm and favus the authors advise the use of the

pastiles of Sabouraud and Noiré, a method of precision decidedly not in favor in America.

The book is well indexed, well printed on a good grade of paper, and substantially bound in cloth. There is a constant repetition of a very annoying typographical error in connection with the word show, which is spelled shew and show.

Although we should like to see one or two changes made, we believe the book has merit and that its careful perusal will adequately prepare one for the further study and the practical employment of the Röntgen ray, and that it will produce an accurate and conservative knowledge relative to the possibilities and limitations of radiology.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by WILLIAM OSLER, M.D., Regius Professor of Medicine in Oxford University, England, etc., assisted by THOMAS McCRAE, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore, etc. Volume VI. Diseases of the Urinary System.—Diseases of the Ductless Glands.—Diseases of Obscure Causation.—Diseases of the Muscles.—Vasomotor and Trophic Disorders.—Life Insurance. Illustrated. Philadelphia and New York: Lea & Febiger, 1909. Pp. x-17 to 799. (Price, cloth, \$6; leather, \$7; half morocco, \$7.50.)

As this great work draws to a close—there is now but one more volume to appear—our admiration of it only grows. The list of contributors to volume vi is as follows: Dr. Thomas R. Brown, Dr. Thomas McCrae, and Dr. Hugh Hampton Young, of Baltimore; Dr. George Dock, of New Orleans; Dr. Charles P. Emerson, of Clifton Springs, N. Y.; Dr. Archibald E. Garrod, of London; Dr. Charles Lyman Greene, of St. Paul; Dr. James B. Herrick, of Chicago; Dr. Warfield T. Longcope and Dr. Daniel J. McCarthy, of Philadelphia; Dr. John McCrae, of Montreal; Dr. William Osler, of Oxford; and Dr. Walter R. Steiner, of Hartford. All these writers are men of distinction in medicine, and their treatment of the subjects assigned to them is nothing short of masterly. Even in their minor statements and implications we find remarkably little from which to dissent.

It is possible that we do not quite understand Dr. John McCrae when he says of the kidney (page 17): “As an excretory organ, while it probably stands second to the alimentary tract, it certainly surpasses in importance the skin, whose total excretion of water it equals, and it greatly surpasses such subsidiary systems of excretion as the breath and the saliva.” Something doubtless turns upon the precise meaning assigned by the author to the word excretion, and it may be that he does not intend it to cover the gaseous pulmonary exhalation. “Anæmia of the adrenals is of no clinical significance, and the same is true of anæmic necrosis,” says Dr. Dock (page 356), but we think it would have been well to say something more concerning those affections. Dr. Dock also (page 467) seems to imply that the testicles are not to be reckoned among the external genitals.

The subject of the “kidney of pregnancy” is very satisfactorily handled by Dr. Herrick, and we are glad that Dr. Young speaks so emphatically in favor of the elbowed catheter in cases of prostatic enlargement. The volume concludes with Dr. Greene’s very valuable article entitled Medical As-

pects of Life Insurance. The subject is one with which physicians ought to be better acquainted than they are in general, and we know of nobody better qualified to expound it than Dr. Greene.

Further Advances in Physiology. Edited by LEONARD HILL, M. B., F. R. S. With Diagrams. New York: Longmans, Green, & Co.; London: Edward Arnold, 1909. Pp. v to vii-440.

This volume is a sequel to one entitled *Recent Advances in Physiology*, and may, says the editor, be perhaps the forerunner of two or three others on the same subject. He says that it has been his aim and that of his coadjutors to "write up their views on certain selected subjects which, both by their importance and interest, will stimulate the student, give him a view wider than that which the ordinary textbook can give him, and at the same time rivet his attention on subjects which have a particular application to pathology and clinical medicine." We gather from the last clause that one of the chief purposes has been to present recent physiological advances in a way that will make them useful to the practitioner of medicine, but we fear that many of the contributions are too technical to be readily grasped by those who are not special students of physiology, being, indeed, such as might be presented before a physiological society. There are exceptions, however, and these we shall note further on.

The book contains the following essays: The Equilibrium of Colloid and Crystalloid in Living Cells, by Professor Benjamin Moore, of the University of Liverpool; The Heart, by Mr. Martin Flack, demonstrator of physiology to the London Hospital; Pulse Records in their Relation to the Events of the Human Cardiac Cycle, by Dr. Thomas Lewis, fellow of University College; The Vascular System and Blood Pressure, by Mr. Leonard Hill, lecturer on physiology to the London Hospital; The Mechanism of Respiration in Man, by Dr. Arthur Keith, curator of the museum of the Royal College of Surgeons of England; The Physiology of Muscular Work, by Dr. M. S. Pembrey, lecturer on Physiology, Guy's Hospital; Some Chapters on the Physiology of Nerve, by N. H. Alcock, lecturer on physiology, St. Mary's Hospital; Recent Researches on Cortical Localization and on the Functions of the Cerebrum, by Dr. Joseph Shaw Bolton, of the Lancaster County Asylum; and Studies in Special Sense Physiology, by Mr. M. Greenwood, Jr., senior demonstrator of physiology, London Hospital.

The articles contributed by Dr. Pembrey, Dr. Alcock, Dr. Bolton, and Mr. Greenwood are of a character to prove available and exceedingly valuable to the practitioner of medicine; the others, while undoubtedly of great scientific worth, seem to us to have been written "over the heads" of most medical men. We consider Dr. Pembrey's essay as the gem of the volume from the practising physician's point of view, his style being exceptionally clear and attractive. Dr. Bolton goes at considerable length into a consideration of the recent upheaval of views on the language centres, and in a most judicial way. On the whole, he rather favors Marie's teaching. "It must at once be confessed," he says, "that the doctrines of Marie are destructive rather than con-

structive from the aspects of cortical localization. On the other hand, from the aspect of cerebral function they are thoroughly constructive in tendency. From both points of view, however, they are in accord with the results of recent histological and psychophysiological research."

The typography of the book is excellent, but some of the bibliographical lists, notably those beginning on pages 206 and 282, fairly bristle with errors, apparently the fault of the authors or the editor—certainly not of the printers.

Medicolliterary Notes.

Good Roads the Way to Progress, by Logan Waller Page, in the *World's Work* for July, shows how an annual saving of \$250,000,000 may be made in hauling alone by improving our roads. Physicians ought to be interested prominently in all movements of the kind, for every moment lost in motor-ing or driving may be priceless to a patient or his relatives.

What Personal Accident Insurance Is, in the same magazine, will interest all our friends, specialists and general practitioners alike.

It is late in the day to try to rehabilitate the hypotheses of Gall. Cyrus Elder makes the attempt in an edition, revised from that of 1833, of *Phrenology*, by J. G. Spurzheim, M. D. (J. P. Lippincott Company, Philadelphia and London, 1908), to which he furnishes an introduction. He advances nothing to controvert the fatal objection to phrenology, i. e., that the cranial surface does not fit closely over the cerebral. As to the truth of cerebral localization, that Spurzheim skirted, we have retained that and developed it into a true and priceless science. Mr. Elder's assertion that brain and mind are not studied together is simply untrue, and, in spite of his gibes against alienists, we have learned much from the latter. The best names cited to bolster up this scientific curiosity are those of Alfred Russell Wallace, Crookes, and Flammarion, all notoriously fanciful and credulous outside of the domains of their respective sciences, where they have earned deserved fame. The more exact a scientist at home, the more he seems inclined to play when at large. The hard headed mathematicians, who are swaddled in rules when attending to business, have evolved in their hours of ease the theory of a fourth dimension, a region where the imagination can play the wildest pranks in making perfectly logical deductions from premises fabricated of dreamstuff.

In the *Red Book* for July Professor Frederick Starr considers The Women Men Marry and advises closer attention to their characteristic function of maternity. Professor Starr apparently does not think highly of woman's attempts to prove herself man's mental equal if these attempts are to cost her physical well being. We fear that the allegation that woman is nearer to the savage than man will be misinterpreted by the dear creatures, and it would require a longer article than that under discussion to make it clear that her conservatism is what is really being emphasized, and that a compliment of sorts is intended.

(In lazaretto)

Places.	Date.	Cases.	Deaths.
China—Hankow.....	May 15-29.....	24	23
China—Peking.....	22-29.....	8	7
China—Tientsin.....	22-29.....	Present	Present
China—Yin Shan.....	May 22-29.....	Present	Present
India—Bombay.....	22-29.....	56	174
India—Calcutta.....	22-29.....	13	13
India—Rangoon.....	22-29.....	1	1
Indo-China—Saigon.....	22-29.....	1	1
Japan—Kobe.....	22-29.....	1	1
Peru, general.....	May 1-30.....	13	8
Siam—Bangkok.....	May 22-29.....	1	1
Trinidad.....	June 1-19.....	2	2

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 14, 1909:

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life Saving Service. Granted fifteen days' leave of absence from August 1, 1909.

BAILHACHE, P. H., Surgeon. Granted three months' leave of absence from August 1, 1909.

CLARK, T., Passed Assistant Surgeon. Granted thirty days' leave of absence from August 16, 1909.

CUMMING, HUGH S., Passed Assistant Surgeon. Granted one month's leave of absence from August 1, 1909.

EARL, F. D., Acting Assistant Surgeon. Granted seven days' leave of absence from July 20, 1909.

EBERSOLE, R. E., Passed Assistant Surgeon. Granted six days' leave of absence from March 6, 1909. Paragraph 191, Service Regulations.

HUNT, REID, Chief Division of Pharmacology, Hygienic Laboratory. Detailed to attend the Twelfth International Congress on Alcoholism to be held in London, July 18-24, 1909, and the Sixteenth International Medical Congress to be held in Budapest, Hungary, August 29 to September 4, 1909.

GASSAWAY, J. M., Surgeon. Directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of examining keepers and surfmen of the Life Saving Service.

GUITERAS, G. M., Surgeon. Directed to proceed to Austin and other points in Texas upon special temporary duty.

PREBLE, PAUL, Assistant Surgeon. Relieved from duty at Baltimore, Md., and directed to report at bureau for duty. Assigned for duty in charge of the Miscellaneous Division.

MULLAN, EUGENE H., Passed Assistant Surgeon. Granted two days' leave of absence from July 12, 1909.

ROBERTS, NORMAN, Passed Assistant Surgeon. Directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague, and Cape Charles City, Va., for the purpose of examining keepers and surfmen of the Life Saving Service.

SAFFORD, M. V., Acting Assistant Surgeon. Granted seven days' leave of absence from July 7, 1909. Paragraph 210, Service Regulations. Granted three days' leave of absence from July 15, 1909.

SCHMITT, L. S., Acting Assistant Surgeon. Granted thirty days' leave of absence from July 2, 1909, without pay.

STORRS, HENRY R., Acting Assistant Surgeon. Granted four days' leave of absence from July 20, 1909.

TARBELL, B. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 1, 1909, with pay, and fourteen days' leave of absence from August 31, 1909, without pay.

WARREN, B. S., Passed Assistant Surgeon. Granted three days' leave of absence from July 6, 1909.

WEEKS, ALANSON, Acting Surgeon. Granted thirty days' leave of absence from July 10, 1909.

WELDON, WILLIAM A., Acting Assistant Surgeon. Granted one month's leave of absence from August 15, 1909.

WICKES, H. W., Passed Assistant Surgeon. Granted one month's leave of absence from August 1, 1909.

Appointments.

Dr. Walter R. Brinckerhoff reinstated and appointed assistant director of the Leprosy Investigation Station at Molokai, T. H.

Dr. Harry T. Hollman appointed an acting assistant surgeon for duty at the Leprosy Investigation Station at Molokai, T. H.

Dr. H. B. Ross appointed an acting assistant surgeon for duty at Del Rio, Tex.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 17, 1909:

BIRMINGHAM, HENRY P., Lieutenant Colonel. Granted leave of absence for two months.

GOSMAN, GEORGE H. R., Captain. Granted leave of absence for one month, to take effect on August 1st.

LEWALD, LEON T., Captain. Granted leave of absence for twenty-five days.

LOVING, ROBERT C., Captain. Granted leave of absence for four months.

SHAW, HENRY A., Major. Granted leave of absence for one month.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 17, 1909:

ANGENY, G. L., Surgeon. Detached from the Naval Station, Guam, M. I., and ordered home to await orders.

ODELL, H. E., Surgeon. Detached from the Naval Hospital, Mare Island, California, and ordered to the Naval Station, Guam, M. I.

REEVES, I. S. K., Passed Assistant Surgeon. Ordered to treatment at the Naval Medical School Hospital, Washington, D. C.

SMITH, H. W., Passed Assistant Surgeon. Detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to temporary duty at the Navy Yard, Boston, Mass.

WINN, C. K., Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Station, Key West, Fla.

Births, Marriages, and Deaths.

Married.

BAHRENBURG—ALEXANDER.—In St. Louis, Missouri, on Saturday, July 3d, Dr. William Bahrenburg and Mrs. Carrie Thomas Alexander.

MACK—REVES.—In Cranford, New Jersey, on Saturday, July 12th, Dr. George L. Mack, of Freehold, and Miss Josephine I. Reves.

STEWART—AMMON.—In Webster, Pennsylvania, on Wednesday, July 7th, Dr. R. V. Stewart, of Monongahela, and Miss Amelia Ammon.

Died.

BRUNNING.—In Indianapolis, Indiana, on Friday, July 9th, Dr. Charles E. Brunning.

CARBERRY.—In Atlantic City, New Jersey, on Friday, July 9th, Dr. P. J. L. Carberry, aged sixty years.

DILLON.—In St. Louis, Missouri, on Saturday, July 3d, Dr. J. R. Marmaduke Dillon, of New Orleans.

DOWER.—In Brooklyn, on Saturday, July 10th, Dr. Andrew J. Dower, aged sixty-one years.

KING.—In Kansas City, Missouri, on Monday, July 12th, Dr. Willis P. King, aged sixty-nine years.

KRAUSER.—In Brooklyn, on Friday, July 9th, Dr. Cyrus F. Krauser, aged seventy years.

MILLINGTON.—In Rome, New York, on Tuesday, July 13th, Dr. Samuel Millington, aged seventy-three years.

RADCLIFFE.—In St. Catharines, Ontario, on Monday, July 12th, Dr. William C. Radcliffe, aged thirty-five years.

REAGAN.—In North Tonawanda, New York, on Tuesday, June 1st, Dr. Cornelius R. Reagan.

REED.—In Stockton, Ohio, on Thursday, July 8th, Dr. R. C. Stockton Reed, aged eighty-five years.

SCOTT.—In Washington, D. C., on Thursday, July 8th, Dr. E. D. Scott, aged fifty-two years.

RUHL.—In Middletown, Pennsylvania, on Sunday, June 27th, aged forty-nine years.

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COMPRESSED AIR DISEASE FROM A CLINICAL ASPECT.*

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Compressed air has come into use of late years in the construction of subaqueous tunnels and in the sinking of caissons for the foundations of heavy buildings and for piers for bridges. It was ascertained that the atmosphere could be compressed so as to replace water, and that in this compressed air it was possible for men to enter and perform their work much as they do in the normal atmosphere. The number of pounds pressure necessary varies according to the depth. Roughly speaking, for every five feet below the surface of the water, about two pounds in addition to the normal atmospheric pressure is necessary, so that at a depth of about 37½ feet, fifteen pounds in addition to the normal atmosphere is used. This is spoken of as two atmospheres, and represents the least pressure at which we usually find symptoms of caisson disease. The highest pressure in which work is done is about fifty-five pounds, and the higher the pressure the shorter is the period that employees can spend in the air with safety. Dr. Hill and Dr. McLeod, of London, who have performed extensive experiments on animals in compressed air, have themselves entered a pressure of ninety pounds and have remained under this pressure for some minutes, taking about an hour and a half for decompression. In the construction of the Hudson River tunnels, the pressure varied from eight pounds to forty-three pounds, but during the greater part of the work it ran between thirty-six and thirty-nine pounds, corresponding to a depth of about ninety to one hundred feet below the surface of the river and about twenty-five to forty feet below its bed.

In order that compressed air may be used, it is necessary, of course, that it shall be contained in a chamber that is for all practical purposes air tight. The one end of this chamber in tunnel work is represented by the advancing shield, the walls of the cylindrical chamber are formed by the constructed tunnel, made up of rings of steel plates, put in in sections as the shield advances, and the other end is a sealed partition. The principle of the lock is the same as in a water lock. It is an iron tube about

fifteen feet long and about seven feet in diameter, with a door at each end, one of which communicates with the working chamber filled with compressed air and the other opens outside into the normal atmosphere or into a lower pressure, where the decompression is undertaken by stages. This lock is arranged so that the air can be turned on to the lock or released from it by the lock tender, who remains inside the lock. The valves are so constructed that he can pass from one pressure to another as slowly as is desirable. All employees entering and leaving the compressed air chamber must pass through this lock.

It is during or after decompression that the men are attacked by caisson disease. Caisson disease never comes on by entering the air, nor does it ever appear in the tunnel proper, unless in passing from a heavier to a lighter pressure. The attack may come on during the process of decompression while the man is still in the lock, it may come on immediately after decompression, or it may not appear for as long a period as twelve to sixteen hours after the employee has left the air chamber. The most serious cases occur during or very soon after decompression. Attacks that appear after five or six hours are usually not dangerous to life.

GENERAL ETIOLOGY AND PATHOLOGY.

Caisson disease differs from most diseases in the same way as a physical compound differs from a chemical compound. It is more an abnormal condition than a true disease. It is only in cases of the most severe type that we find any organic change of the tissues. Blood the same as water will dissolve air under pressure. The greater the pressure the greater is the quantity of air that it will hold in solution. At the same time, the blood pressure is increased when the body is under more than the normal atmospheric pressure. Immediately after entry into the air, the pulse is for the time accelerated, but after having been inside a short time, it assumes its normal rate and tension. If there were no increase in the blood pressure, there would be a tendency, particularly in high pressure, on the part of the bloodvessels to collapse from the force of the increased pressure outside. But there is no evidence of any embarrassment of the blood stream by collapse of the vessels, and this, together with the fact that the rate, quality, and tension of the pulse are not altered, in a pressure of even forty-two pounds, is evidence that the circulatory system is able to adapt itself to the surrounding atmospheric pressure. It is on these two factors, then, that caisson disease depends, viz., the air dissolved in the blood stream and the increased blood pressure. In

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the compressed air, of course, the worker feels no ill effects from these conditions. If he passes out slowly enough to allow the blood to give up its air through the lungs, and to allow the circulatory system to accommodate itself to the decreased pressure, by decreasing its pressure accordingly, he will have no symptoms, provided he fulfils all the requirements that we look for in a medical examination. It is from too rapid decompression that caisson disease occurs. Coming out too quickly causes the bloodvessels to be dilated, first, by the formation of air bubbles in the blood stream as the air passes out of solution, second, by the increase in the blood pressure which has not been reduced proportionately to the air pressure, as it is not possible for the circulatory system to diminish its pressure as quickly as the air can be diminished in the air lock.

The effect of this dilatation of the vessels is felt mostly where the vessels come into most intimate contact with the nerve tissue—in the brain and the spinal cord. This mechanical congestion of the vessels in the cervical and lumbar enlargements of the cord causes a sort of pressure neuritis with symptoms of pain in the milder cases and going on to paralysis in the severer cases, in which there is extensive pressure of the vessels on the nerve tissue or in which the vessels, unable to stand the strain of the increased pressure, rupture and cause a hæmorrhage into the cord.

The milder types of the cerebral variety are due almost entirely to a mechanical disturbance of the internal ear. Any one who has ever gone into compressed air will remember his first experience in inflating his middle ears. On coming out, if the air is retained by any catarrh of the Eustachian tube, and then comes out with a rush as the block disappears, the head feels as if it were turning around and one suffers an intense feeling of dizziness. This type of caisson disease, commonly called "the staggers," is more common in alcoholics, where there is already a tendency to upset of the semicircular canals, as well as those who are subjects of catarrhal conditions of the nose and throat.

The more severe types of the cerebral variety are due to the dilatation of the cerebral vessels, both of the venous and the arterial systems, caused by both the mechanical congestion and the air which appears in the blood stream as it comes out of solution. If the patient is in good physical condition, with good, firm tissues, and he receives treatment immediately after his attack, it may be possible to have his bloodvessels regain their normal calibre without any air having escaped into the surrounding tissues through the walls of the bloodvessels, and without any permanent damage having been done to the nervous system. It is very rare, however, that one has such an opportunity, although I am going to present to you the history of an absolutely perfect recovery from such a condition. The usual condition is dilatation of the right side of the heart, with the formation of bubbles of air along the blood stream and in particular in the venous channels. These small bubbles coalesce to form larger bubbles, and they collect in the right auricle, distending it to an enormous size. In the cerebral vessels they penetrate the vessel walls and, in the form of bubbles of air, press on the cerebral tissues in the proximity of the vessels.

Why is it, then, that all air workers do not suffer from caisson disease? And why is it that two men apparently similar will come out of the compressed air under exactly the same conditions, one having no ill effects, and the other to be stricken with a severe attack of the disease? Undoubtedly the blood of each dissolves the same relative amount of air in the same given time, and on exit the blood of each allows the air to come out of solution in the same time. The difference is due to the difference in the power that the bloodvessels of the two men have to react to the sudden change in the pressure of the air during decompression. In the case of the man who experiences no ill effects, he has only one of the elements necessary to produce the disease acting against him, and that is the formation of small air bubbles in the blood stream. His vessels, having an extra reserve power, as it were, do not dilate to any appreciable extent. They are able to stand the increased strain and allow the air to be carried to the lungs by the blood and there given up. The mechanical congestion of the smaller vessels does not take place as in the case of the man who has no reserve power in his circulatory system, and who consequently falls a victim to "the bends." From the standpoint of the employer, then, as well as of the employee, it is desirable to pick out for air work those men who have that extra reserve power as being better risks for work under such abnormal conditions. This brings us to the discussion of the prophylaxis that should be and is usually adopted.

PROPHYLAXIS.

Prophylaxis is carried out in first selecting the men for air work and, second, the care of the men after they have begun their work. Examination of all employees is carried out by physicians, who examine all new applicants. If a man is a good risk, the one examination is considered sufficient for about three months, provided he remains at work. If he leaves off work for even a short time, and again applies for work, he is again examined.

Every man at work in compressed air should be above the average physically. Thin men are better risks than stout men, and it has been our practice to decline all men who were at all corpulent or fat. A man should not be above forty, which is the age at which it is usually considered that the vessels begin to lose their elasticity. A good heart is absolutely necessary, and any evidence of any valvular or myocardial affection is sufficient to bar a man from work in the compressed air. Allowance has always to be made, however, for slight increase in rate due to the excitement of the examination. It has not been our custom to examine the urine, but we declined all who gave external evidence of nephritis. While nearly all "sand hogs" drink more or less, alcoholics are bad risks, and it has been our practice to discourage drinking. We declined all who were marked alcoholics.

The actual care of the conditions under which the men work comes next in importance. The hours are regulated so that they have not to work more than a certain number of hours each day in the compressed air. And the higher the pressure, the shorter is the period that they are allowed to work. The air in the tunnel is analyzed frequently to detect the percentage of carbon dioxide, so that by ventilation

it may be kept at the lowest possible percentage. Carbon dioxide is *much* more soluble in the blood than is the air, and it has been considered that when the percentage of carbon dioxide was high the number of cases of caisson disease was relatively increased. The presumption was, accordingly, that there was an increase in the quantity of gases dissolved in the blood with a high percentage of caisson disease, and with too rapid decompression there would be an increase in the quantity of gas liberated in the blood stream as it came out of solution.

The exit locks are in the care of expert lock tenders, who should see that a reasonable length of time is consumed in the process of decompression. But too rapid decompression does occur at times, owing to the desire on the part of the employees to leave quickly after their work is finished for the day, as well as to a contempt for the disease after some time of familiarity with compressed air when no evil results had ensued.

Last in importance comes the care of the men by themselves in preventing the disease. In a general way, this consists in keeping themselves in the best possible physical condition and thereby increasing their resisting power. Rules are formulated with which they should comply with this end in view. They are as follows: Never enter the lock on an empty stomach; do not use intoxicating liquors; take warm coffee freely; put on extra clothing while coming out; pass out slowly; get fully seven hours' sleep in each twenty-four; see that the bowels move every day; report all cases of illness immediately.

SYMPTOMATOLOGY.

Compressed air undoubtedly affects every one who enters it to a greater or less degree. On entry the beginner usually experiences pain in his ears, particularly if he has any catarrh of his Eustachian tubes. This prevents the free passage of air into the middle ear, which is necessary to make the pressure equal to the pressure outside the drum membrane. The voice assumes a different pitch and has a nasal quality. In high pressure it is difficult to whistle. At first the pulse is slightly accelerated, but after a few minutes it assumes a normal rate. No difficulty in breathing is experienced, and the rate of respiration is not altered, although the breathing is somewhat more shallow. In the tunnel proper the temperature remains at about 65° F., varying with the size of the air chamber and with the amount of leakage. The air is laden with moisture and feels oppressive. Otherwise, you notice very little difference from normal atmospheric pressure.

The beard grows faster in compressed air, and old "sand hogs" say that they eat better while they are employed at compressed air work than they do at any other kind of work. Both of these statements indicate that there is increased oxidation of the tissues in the compressed air. Men employed in compressed air work really live faster than men outside the compressed air, although not at a rate that would correspond directly to a difference in pressure. All employees suffer more or less from constipation. Middle ear trouble going on to abscess formation is infrequent, occurring in a ratio of about 0.1 per cent. It is hard to determine mathematically what effect it has on the length of a man's life after even a

period of two or three years' employment. The increased oxidation of the tissues tends to shorten his days, and the constant strain on the circulatory system enlarges the heart. These are symptoms that are common to all compressed air workers, but we would by no means classify men experiencing these symptoms as suffering from caisson disease.

CLINICAL FORMS.

There are two distinct types of caisson disease, classified according to the part of the nervous system that is the more directly involved: 1, The spinal type; and, 2, the cerebral type.

1. The spinal type is the more common, and the differences in the affections of this type are chiefly a matter of degree. The less serious cases are characterized by severe pain in the legs, particularly in the muscles of the thigh and calf, or pains in the arms or shoulder muscles, and corresponding to the distribution of the larger nerve trunks. The pulse is accelerated, and the body bathed in perspiration. The pupils are little affected, but the reflexes are slightly diminished. Pain in the abdomen is not common, in spite of what is generally supposed. In the more serious cases the attack appears sooner after decompression than in the slighter cases, and the onset is usually without premonitory symptoms. Here we get a paraplegia with very little pain in the early stage of the attack, as a rule. The employee may be walking to his dressing room, when suddenly his legs give way underneath him, with absolute loss of power and sensation in his extremities. With a rupture of the small vessels of the cord, however, where there is a continual slow oozing, the paralysis is gradual, and is preceded by pain. The paraplegia in caisson disease is different from that accompanying a fracture of the spine, inasmuch as the sense of feeling is not entirely lost, and the patient may have a slight power of moving one leg. The brain remains clear; unconsciousness never supervenes. The patellar and plantar reflexes are absent, the pupils are somewhat dilated, and the pulse is accelerated. The face is pale, and there may be some cyanosis. An hour after the attack we may find a hyperæsthetic band around the abdomen, with a feeling of constriction, corresponding to the distribution of the spinal nerves which come from the lumbar enlargement of the cord. In the early stages following the paralysis, the feces and urine are retained, but even in those cases that do not go on to a favorable recovery patients regain fair control over bladder and rectum. In such of these spinal cases as do not respond to treatment, following a pressure on the cord or usually a hæmorrhage into the cord, the case goes on to a myelitis complete, the same as in a fracture of the vertebra. If there is no improvement in six months, the case will terminate fatally in all probability.

The cerebral cases are rarer and form about ten per cent. of the total cases. Here, too, we must distinguish between the lighter and the more severe varieties. In the lighter variety we get a marked vertigo with nausea and vomiting. There is usually no pain, but there is an intense ringing in the ears. The pulse is accelerated, the facies pale, the pupils dilated, and the body in a profuse perspiration, with the body temperature somewhat lowered. These cases do not respond to treatment at all satisfactor-

ily by recompression, but usually go on to spontaneous recovery.

The more severe cases of the cerebral variety are usually fatal. In them we see the patient in deep coma—the pupils widely dilated, the face cyanosed, teeth protruding, pulse 140 to 190, and respiration barely perceptible—absolute unconsciousness. Most of these patients are benefited, at least temporarily, by treatment, if it is immediate. When they are recompressed, they recover consciousness sufficiently to answer questions, and sufficiently to determine the extent of the lesion. We usually find a hemiplegia. Here, too, the paralysis differs from that in cerebral hemorrhage, as the patient has some power, although usually slight, in the affected side, together with more or less tendency to a paraplegia. The paralysis is less sharply defined, as there is a paresis of all extremities. The patients make endeavors to clutch at the side of the head opposite to the affected side. Their senses are all dulled, and they usually have a slight delirium. With their eyes they cannot distinguish objects at all, although they can still distinguish light from darkness. The pulse rate remains very high, often reaching 200. The patient tosses from side to side, the body is cold and clammy. He gradually relapses into unconsciousness and the breathing is scarcely perceptible. A sort of frothy mucus is emitted from the mouth, and death comes in less than forty-eight hours.

TREATMENT.

The ideal treatment consists in immediate recompression. This is carried out in a specially constructed medical lock, controlled entirely from the outside. The patient is rapidly recompressed to about two thirds the pressure under which he has been working, and he is kept under this pressure for a few minutes—the time being usually designated by an amelioration of the symptoms. In the more severe cases with paralysis or coma, the physician enters with the patient, and as soon as the required pressure has been attained, the patient is encouraged to sit up and to stand and to move his extremities. If he is able to walk he is kept up and encouraged to walk the entire time that he is in the lock. If he is unable to walk after being recompressed, his limbs are massaged and he is held up in the standing position, while he endeavors to flex and extend his legs. Strychnine, gr. 1/30, hypodermically, every hour for three doses is given, and a strong purgative—preferably of calomel and jalap—is administered. If the recompression is carried out immediately after the attack appears, we usually notice a very material benefit after the patient has been back in the lock for about fifteen or twenty minutes. As soon as he shows recovery from the paralysis, the air can then be gradually released, and the more slowly the pressure is reduced, the more ideal will be the result. Ordinary slight cases are decompressed at the rate of about one pound in four minutes, which would be allowing one hour for a pressure of fifteen pounds. In the more serious cases it is not wise to allow the pressure to be reduced at a rate faster than one pound in eight or nine or even ten minutes, consuming a time of sometimes three and a half hours. If the attack appears some hours after the patient leaves the tunnel, and he cannot be immediately recompressed, by reason of

his being at some distance from the medical lock, recompression will not act so rapidly, although he will usually be much benefited. Fortunately the attacks that come on some hours after the patient has left the compressed air are not usually serious. The attacks characterized by pain alone go on to spontaneous recovery at any rate. If the pains are not benefited by recompression, morphine, gr. 7/4, should be administered with calomel and jalap, aa gr. x, and the patient should be instructed to keep on his feet and keep walking.

In cases where the paraplegia is not benefited by recompression, due to delay in being able to return the patient to the medical lock, massage should be carried out early and faithfully, and the patient should be encouraged to get up and try to walk, and if necessary walk supported on each side by two assistants. The assistants should manipulate the legs by flexion and extension until the patient regains some power over them. I have kept patients attempting to walk almost continuously for twenty-four hours, using assistants in relays, before any benefit was noticed. It is this part of the treatment that requires the greatest care, patience, and perseverance. Attention must be paid to the bladder and bowels. The urine should be withdrawn and the lower intestine irrigated. With returning power in his legs, he regains power over his sphincters.

A paralysis that is not immediately benefited by recompression in most cases never entirely disappears, owing to the damage done to the spinal cord, either from pressure or hemorrhage. We usually find that one leg will recover better than the other, and the patient walks dragging one foot. The gait is more ataxic than spastic. The muscular tone is diminished, and after a few weeks the wasting of the calf and thigh muscles is marked. Electricity is of great benefit here, and should be supplemented by regular and faithful massage. In those cases of paraplegia which get progressively worse, the treatment is the same as in the cases of myelitis. Even with water beds, bed sores and all the accompaniments of myelitis ensue. If a patient does not recover in six months, it will probably prove fatal, but a patient will sometimes remain in about the same condition for two months, and then gradually get well enough to walk. These patients improve up to a certain point, but never fully recover.

In those cases which I have classified under the head of the lighter cerebral variety, characterized by vertigo, nausea, and vomiting, recompression is of little avail, although it is always carried out in the hope that we may increase the tone of the blood-vessels by dissolving out any air which has remained in the vessels. Rest and quiet in a dark room with light diet are most beneficial. The attack gradually wears away, until at the end of a week the patient is on a fair road to recovery. Catheterization of the Eustachian tubes with inflation of the middle ear is of service as well.

Before the introduction of the hospital lock for the treatment of compressed air disease, the treatment consisted in the application of a strong electrical battery over the affected parts, with the internal administration of ergot and strychnine, combined with the hot water bath as hot as it could be borne. Only the mild cases were much benefited, and ergot is not used now. Electricity is only of use when the

case has become chronic, or in cases of paralysis after they have failed to respond to recompression. We have always made it a point to keep a supply of oxygen on hand, but it is of doubtful benefit in severe cases and is not needed in the mild cases.

One severe attack is sufficient to bar a man from ever working in the compressed air again. All beginners are liable to have an attack of the lighter variety, characterized by pain alone, as well as old employees who violate the rules or who remain under the pressure more than the customary time. We do not regard the slight attacks, unless repeated often, as unfavorable to a man's return to work.

As to the length of life of the average compressed air worker, it is a matter of speculation. As I have said, compressed air workers live faster than the man under normal conditions, due to the increased oxidation of the tissues. Continued employment in the air enlarges the heart, although I have never seen any incompetence of the valves ensue. The average time that they spend at air work is about four years. At the end of that time, owing to an increase in the abdominal girth, or to approach to age where their tissues will not react as well, they are beginning to be considered as bad risks.

SPINAL TYPE.

CASE I.—A. B., thirty-four years of age, Scotch. Nature of air chamber, caisson. Number of pounds pressure, twenty-five. Nature of attack, feeling of constriction around abdomen, paralysis of legs.

History: Patient had never been examined by a physician for work in compressed air, but ten years ago had worked on several caisson jobs in New York. Since that time had done no work in compressed air. Had been addicted more or less to the use of alcohol. Started work on August 25th at 8 a. m. and worked eight hours with no ill effects. Next morning, August 26th, started to work as usual and worked four hours. Came out at 12 m. for luncheon, and was decompressed very rapidly, the time being less than one minute. Felt a severe pain in abdomen, and decided to go home. He had only gone a short distance when the pain became so severe that he had to be taken to the hospital lock for recompression. When he applied at the lock for treatment it was noticed that he limped with his left leg. He was recompressed to fifteen pounds and released gradually, so that at the end of an hour he was out of the lock. He did not feel much better and was again recompressed, with a similar result. He was allowed to go home with an attendant. When he reached home he felt weak in his legs and felt a "numbness and coldness coming over him." He had to be carried upstairs, but was able to take a hot bath unassisted. At the end of another hour, the power over his legs had greatly diminished and the pain in his abdomen had increased. He was taken back to the hospital lock again at about 9 p. m.

Treatment: At 9 p. m. he was recompressed to sixteen pounds with an attendant who kept him walking in the lock, by supporting him. He was released at the end of two and a half hours, not feeling at all better, and he was given hypodermically strychnine, grain 1/15, and calomel and jalap compound, 33 gr. x. He was recompressed with me to twenty pounds and the pressure was kept at that point for twenty minutes. He was held up forcibly and made to walk. His legs were massaged and rubbed at intervals when he was not aided in walking in the lock. He was released at the end of two hours with his condition not improved. He was then carried between two assistants and forced to try to walk, but the operation proved unsatisfactory, as he had absolutely no power over his legs. Sensation and sense of position of the legs were entirely gone. Several attempts were made to walk him with no satisfactory result. He was sent to the hospital and instructions were given to the ambulance surgeon to see that he was given an enema and catheterized, and that he should be kept on his feet as much as possible, and in the intervals between walking to give him local electrical treatment, and massage.

Condition before being sent to the hospital: Man of apparently more than the age mentioned; he looked forty. Nutrition poor. Appeared conscious and rational. Moved arms aimlessly in trying to grasp objects. Pupils dilated slightly and reacted slowly. Bowels had not moved for twenty-four hours. Pulse 100, regular, weak. Temperature normal, 98° F. Respirations slightly increased twenty-four per minute. On being held up legs hung limply. Muscles and even the skin below the waist seemed to have lost their tonus. On sitting down could raise left leg and right leg very slightly. Complained of pain in abdomen, with a tender spot in the lumbar region. Superficial sensation greatly diminished over lower extremities and the lower part of the abdomen and genitals. It was absent over the adductor muscles and over the quadriceps, and also over other isolated areas. Deep sensation was quite markedly diminished, but present down to the toes. Reflexes were absent. Muscular power almost entirely gone in both extremities, but it was thought that he had slightly more power in his right than in his left leg. No band of hyperesthesia could be made out.

Next day, August 27th, when seen in the hospital, his bowels had moved and he had control over them. He could not pass his urine without catheterization, however. Condition of legs as regards sensation and power was much the same. Attempts had been made to get him on his feet with no success. On sitting up he could move his legs slightly more than on admission, and he felt more comfortable sitting up than in the recumbent posture. Electric battery ordered, to give him thorough and constant treatment. Alcohol was absolutely forbidden, and he was expressly forbidden to lie down any more than necessary and then on his right side.

Probable pathological condition: Hemorrhage of small vessels in the lumbar enlargement of the cord. Vessel continually oozing formed gradually larger clot with gradually increasing paraplegia. While there was only a small extravasation of blood the symptoms of myelitis were slight. Myelitis gradually appeared with increase in the size of the clot.

On the following day, August 28th, his condition was much the same—and if anything, a little worse, as he had less power over his legs. Could not pass water yet. Complained of salivation, probably due to large doses of calomel. Had lost weight since admission. Had difficulty in retaining food. Light diet ordered and strychnine, grain 1/30, every four hours. Rubber cushion was provided for his chair, and he was given systematic massage for fifteen minutes every four hours. Grip in both hands was weak. Could move both legs very slightly. He was placed on a water bed next day and had alcohol sponges for his extremities with massage and exercises daily. He remained in the hospital for about two months without much apparent improvement. At the end of that time he had control over his sphincters. He was allowed to go home, where he had to help himself more than when he was in the hospital, and at the end of another month he had regained considerable power in both legs. He was able to walk on the street with a cane about two weeks later. His gait was somewhat ataxic with a dragging of his left foot. Sensation was almost normal and his general condition was fairly good. I have not seen him now for about nine months, but have heard that he has improved considerably in that time.

CEREBRAL TYPE.

CASE II.—M. C., twenty-two years of age. Irish. Height, 5 feet 11 inches; weight, 102 pounds. Nature of air chamber, caisson. Number pounds pressure 26; shift, eight hours.

Nature of attack, Coma, Hemiplegia.

History: First time employed in air work. Was examined and accepted by me on February 25, 1907. Started work on February 26th at 8 a. m. and after working four hours started to come out for luncheon. The last thing that he remembered was getting into the bucket to be decompressed. He was released from the air chamber with a companion, very rapidly, in less than a minute, and on reaching the normal atmosphere he fell over unconscious. Was carried to my office at once and was immediately recompressed in the hospital lock.

Condition on examination: Pulse, 160. Pupils widely dilated and did not react. Great cyanosis of face and ex-

tremities. Respiration barely perceptible. Froth issuing from the mouth. Cheeks sunken and teeth protruding. Limbs absolutely lifeless. Heart very weak, no valvular lesion. Reflexes all absent, body temperature lowered, and covered with a cold perspiration.

Treatment: Recompressed with myself and an assistant up to twenty pounds, and the pressure was kept up for some time before it was allowed to fall at all. An effort was made to get his mouth open and it had to be pried open; and the chest over the region of his heart was massaged. After a given hypodermically strychnine, grain 1/20. He was given minutes of artificial respiration, he gave a gasp and inhaled. His mouth was kept open with a gag, and in about five minutes he opened his eyes and moved his left arm aimlessly. He was encouraged to raise himself and it was then noticed that he had a right sided hemiplegia with loss of sensation and loss of power. Reflexes entirely absent. Pulse 160. At the end of a half hour, with the pressure being very gradually diminished, he was able to answer a question and to tell his name, but could hardly resist the impulse to lie down. His limbs and chest were massaged and manipulated with gradually encouraging results, and he was assisted to his feet. It was then noticed that although he could distinguish light from darkness, he was almost absolutely blind. He was given another hypodermic injection of strychnine, grain 1/30. After about an hour considerable improvement was noticed in the power over his right leg, and he could move his fingers slightly. Massage was kept up, and at the end of two hours, he seemed to become more rational, and his memory had returned. He was slightly dazed and could not understand where he was, and his vision was not perceptibly improving. Sensation returned gradually to the arm and leg, but he was still very sleepy. Pupils reacted slightly. Reflexes still absent. Felt slight sense of pressure on the left side of his head at first, but this had gradually disappeared. Could not count fingers at the distance of one foot. Hearing did not seem to be diminished, but his brain seemed to be very sluggish. Pressure was gradually reduced until at the end of three and a half hours decompression was complete and he was allowed into the normal atmosphere. His recovery was complete with the exception that he was almost entirely blind. He was sent to the hospital that he might receive proper care for his eyes and examination by an oculist. Inquiry was made at the hospital at 9 a. m. next day, and it was ascertained that after he had had a good night's rest, his recovery was perfect, and that he was allowed to go to his home unattended. I saw him ten days afterward working as a laborer on another building in New York, and to all appearances he seemed to be entirely well. He was never allowed to return to work in the compressed air and it was found that up to two months later he had not felt the least untoward effects.

130 STATE STREET.

ERYTHEMA NODOSUM.*

By HORACE FOX, M. D.,
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Erythema nodosum is a comparatively rare affection and may be defined as an acute, inflammatory, probably specific, disease of the skin characterized by the appearance of elevated, variously sized and colored nodules, tender upon pressure, which undergo a variable evolution with tendency to recover spontaneously and accompanied by constitutional disturbances. This disease was given its name by the French physician, Robert Willan, it appearing in his textbook on *Diseases of the Skin and Their Treatment*, in 1799.

ETIOLOGY.

The cause of this disease is obscure, and there exists much diversity of opinion as to whether it is a distinct affection, whether it is a variety of the ery-

thema group of diseases, and whether it is infectious and contagious. In attempting to elucidate the cause of the erythema nodosum it would seem best to consider the opinions of many of those who have given this affection their special attention.

Osler (1) stated the erythema group of diseases has a diverse ætiology, bacterial, protozoal, vegetable, and metabolic; the poison in itself, of whatever kind, being of less intrinsic importance than certain transient aspects of cell metabolism. He thought the rheumatic poison probably responsible for many cases.

Moussous (2) observed on two different occasions in his service, erythema nodosum develop, some days after a child had been admitted with this affection, in the patient in the neighboring bed, therefore, he believed these cases could be only explained by contagion and concluded that erythema nodosum was not a form of polymorphous erythema but a specific affection.

Symes (3) reported an epidemic of erythema nodosum occurring in a home for children. The house was apparently sanitary, there was no overcrowding, and there was nothing peculiar in the food of those affected. There were thirteen patients; one of them was attacked within twenty-four hours by symptoms of meningitis, and death took place two and one half days after the onset of the erythema; another patient became profoundly ill, the temperature rising to 104° F.; endocarditis developed in four patients, and four of them had relapses. He emphasized the facts that erythema nodosum may become a serious and dangerous disease; it may sometimes be epidemic and it appeared to be of an infective nature.

McCulloch (4) related the case of a boy with a markedly rheumatic family history on the mother's side only, in whom erythema nodosum and erythema multiforme occurred simultaneously, and stated it was a very definite demonstration of the identity of these two conditions.

Kuhn (5) from a study of twenty-two cases stated it was impossible to separate erythema nodosum from erythema multiforme as far as the skin lesions went. An idiopathic and a symptomatic form of erythema nodosum were observed, the idiopathic variety being an infectious disease which affected children especially.

Schlesinger (6) seemed to be of the opinion that erythema nodosum might be caused by bacterial emboli in the capillaries, or by toxins circulating in the blood, while in erythema multiforme he considered more probable that toxins circulating in the blood might be causative but thought further bacteriological study was needed to establish this theory. Bacteriological study in erythema nodosum had brought for the most part negative results although occasionally staphylococci and streptococci had been found, these pointing in all probability to a mixed secondary infection. He concluded that lesions of both forms of erythema might occur in the same subject, but erythema nodosum, especially that form which attacked children, was a typical exanthematic infectious disease with stages of invasion, eruption, and constitutional symptoms, and that erythema multiforme was in most respects a purely local,

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painless skin disease, running a cyclical course, indicating a toxæmia, the signs of infection being subordinate to the skin lesion.

Hoffmann (7) found in one idiopathic case of erythema nodosum, the *Staphylococcus albus*.

Wasson (8) reported four typical cases of erythema nodosum occurring in a locality where the affection had been unknown.

Brönnum (9) recorded four cases of erythema nodosum. It occurred in two brothers following diphtheria and also in two brothers in another family. The affection was primary and developed in each boy with only a day's interval. These facts and certain other features of erythema nodosum pointed to an infectious origin.

Symes (10) thought there was much to confirm the view that erythema nodosum was a specific, acute, febrile disorder; that infection took place through the tonsils or lungs; that after a prolonged incubation period and period of prodromes a rash appeared; that convalescence was accompanied by anæmia and malaise; but regarded the evidence of a relationship between erythema nodosum and rheumatism, as of a conflicting nature as in a large proportion of cases of erythema nodosum it was difficult to recognize any rheumatic taint, and even when arthritis was present it might differ from that found in acute rheumatic fever.

Monro (11) reported the following cases: A boy, twelve years old, had joint pains and a severe gastroenteritis which lasted two weeks. Following these, right sided convulsions, aphasia, facial paresis, and weakness in right arm manifested themselves. Six months afterward erythema nodosum developed. A girl, eighteen years old, had two right sided convulsions, and the next day she had twenty-four convulsions in one hour, being continuously unconscious. After a few days an erythema developed. The author thought the agent that caused the convulsions in these cases the same that caused the erythema.

Miller (12) observed erythema, purpura, multiple arthritis, abdominal colic, hæmorrhage from the bowels and hæmorrhagic nephritis that occurred in a girl, ten years old. He thought it belonged to Osler's group, so called, and believed, in this instance, the cause was of an infectious nature.

Demme (13) observed erythema nodosum in five children, three occurring in one family suggesting contagion. Bacteria were not discovered in the blood, but in the tissue fluids of the nodules micrococci and bacilli were found. Pure cultures of the bacilli were inoculated upon the skin of guinea pigs and an eruption of erythematous lumps was produced. Inoculation of the micrococci produced no results.

Lannois (14) observed four cases of erythema nodosum that seemed to have been conveyed by contagion.

Jacobi (15) states that erythema nodosum is probably an angioneurosis of infectious origin (rheumatic, etc.).

Heim (16) reported a child with erythema nodosum who apparently communicated the affection to a sister in whom the usual symptoms developed.

Vanderslice (17) in quoting Escherich stated he was of the opinion that erythema nodosum might be

secondary to any of the infectious diseases, though more liable to follow rheumatic attacks.

Meara (18) in reporting his case of erythema nodosum stated that, nobody could have seen it without being impressed with the picture of an acute infection, of which the eruption was but a single manifestation. The elevated temperature, the accelerated pulse, the fretted, almost lachrymose countenance, all bespoke more than a mere skin eruption.

Abt (19) opined that erythema nodosum should be classified as one of the exanthematous fevers, on account of the typical course, the prodromata, and complications.

Trousseau (20) pointed out that erythema nodosum differed from the general erythema group in its form, location, and its clinical course.

Lesser and Jarisch (20) separated erythema nodosum and erythema multiforme.

Joseph (20) did not believe that the two varieties could be separated.

Finger (20) came to the conclusion that erythema nodosum was an expression of a septic process.

Mackenzie (20), quoted by Cheadle, recorded 108 cases of erythema nodosum. In two of these cases endocarditis occurred with the eruption, without joint affection. However, Cheadle continued to believe that erythema nodosum was of rheumatic origin in many cases. To prove this he pointed out the tendency of this affection to occur in young girls who are most liable to rheumatic arthritis, as well as to endocarditis and chorea; he believed this was in agreement with a view of its rheumatic nature. Later on he stated that erythema occurred in chorea and septicæmia, as the result of some form of toxic absorption, which led him to believe that erythema depended on the existence of some irritant matter which is in circulation, acting either directly or by reflection on the skin.

The following are personal communications:

Dr. L. A. Duhring states that the symptoms of erythema nodosum in Philadelphia are usually so distinctive as to entitle it to be regarded under a separate caption rather than with erythema multiforme with which it possesses, as is well recognized, certain features or symptoms in common; and furthermore he believes it to be often, if not always, due to an infection, such as occurs in some of the purpuras, and of course, in some of the erythema multiformes.

Dr. W. T. Corlett considers erythema nodosum a disease of which we know absolutely nothing as to its causation and therefore cannot be dogmatic about its relationship to other conditions.

Dr. J. C. White thinks we may properly call erythema nodosum a *distinct* affection of the skin, whatever its unknown ætiology may be, toxicæmic or otherwise—the same may be said of erythema multiforme—no evidence of its "infectious" nature.

Dr. G. H. Fox does not consider erythema nodosum a distinct affection but a form of erythema multiforme, and he does not believe it is of infectious origin.

Dr. A. Ravogli considers erythema nodosum an acute affection as a variety of the erythematia. He believes it is connected with the rheumatic diathesis because the few cases that he had occasion to ob-

serve had been preceded by pains of the joints. In its true form he believes it always to be the infections from rheumatic conditions from probably lactic acid.

Dr. M. L. Heidingsfeld believes erythema nodosum is an affection *per se, sui generis*. He believes it has clinical features sufficiently characteristic in regard to the size, appearance, transitional changes, and distribution to distinguish it from some of the cases of erythema exsudativum with which it has been apparently confounded. In his experience he has never encountered any particular difficulty in separating these two types of affection and has never seen a case in which the features of one affection were confusingly mixed with those of the other. It is difficult for him to answer whether or not erythema nodosum is of infectious origin, not only because the origin of this affection is necessarily obscure, but also for the reason that infectious character is a somewhat variable term. His personal impression leads him to believe that most of the cases are at least strongly predisposed by inclemencies of the weather and such impairment of the general condition which can result from such causes as intestinal toxæmias, indigestion, fermentation and improper assimilation and elimination. The affection, he believes, is infectious to the degree that ordinary rheumatic affections are infectious, where a microorganism plays an active rôle under favorable predisposed causes.

Dr. W. A. Pusey believes erythema nodosum is of infectious origin, the infection in most cases being identical with that of acute rheumatism. As to whether it is a specific disease due to a single sort of infection, he thinks there is room for doubt.

Dr. H. G. Piffard states he does not know the cause of erythema nodosum and has seen no evidence leading him to believe that it is a microbic or infectious disease.

Dr. W. S. Gottheil opines erythema nodosum is merely one of the forms in which the systemic infection with the skin manifestations known as erythema multiforme appears.

Dr. J. F. Schamberg regards erythema nodosum as belonging to the group of toxic erythema. He believes it is due to a poison elaborated in various infectious conditions, but not necessarily limited to them. The poison of so called rheumatism is more frequently the cause of erythema nodosum than any other specific condition.

Dr. H. Radcliffe Crocker writes that he considers erythema nodosum a distinct affection and that he does not believe it is of infectious origin, but of toxic origin, probably an intestinal toxine.

Dr. M. Ebersohn states he considers erythema nodosum a distinct affection and believes it is of infectious origin.

Professor P. G. Unna writes that according to his view erythema nodosum is a distinctly infectious disease with typical localization of discoloring in a typical series of symptoms. A series of similar diseases form tubercles with inflammation, but in the others with other symptoms.

Dr. Christian Ulrich states he cannot look upon erythema nodosum as a distinct affection. It appears most frequently as a complication with rheumatic (fever?) and will be best influenced by sali-

cyclic preparations. He believes it is an infectious disease.

Professor von Düring opines that according to his view erythema nodosum is an infectious disease *sui generis*—a distinct affection.

Dr. Stanislaw Klein writes that he cannot include erythema nodosum among distinct erysipelas affections. He rather considers it as a symptom of manifest or occult tuberculosis. He recalls no case of this disease in which he has definitely excluded tuberculosis. Under his observation occurred, for example, the case of a child in which he on the ground of the presence of erythema nodosum diagnosed it as tuberculosis although other symptoms of this disease failed, but in which cuticular and afterward bone tuberculosis developed. In another case of leucorrhœa with erythema nodosum ophthalmoreaction further appeared. On these grounds he now always diagnosticates tuberculosis in the presence of erythema nodosum.

Dr. Arthur Whitfield does not consider erythema nodosum a specific infectious disease though probably of infective origin. He considers it to be distinct from ordinary erythema multiforme.

Professor Veiel, Sen., holds erythema nodosum to be a disease *sui generis* of probably infectious origin but the cause of which we do not yet know.

Professor Neisser writes there is, indeed, no doubt that erythema nodosum is altogether a distinct clinical form of skin disease. At most the question can only be, if this quite distinct clinical form can be called out through different ætiological causes. To answer this question it will be necessary to distinguish between the immediate direct local cause which produces the knots of erythema nodosum and the constitutional illness from which the patient is suffering. He is himself inclined to suppose that the same local pathological process, which he at the most can compare to a hæmorrhagic congestion, can occur as well in syphilis as in tuberculosis as also as a symptom of the so called rheumatic infection. In all cases he believes that it acts like a primary vascular disease accompanied with a hæmorrhagic congestion. The vascular disease will, sometimes, be produced by syphilis and sometimes by the rheumatic virus. If one must suppose that a tuberculous skin disease is present or should suppose that the vascular disease is produced by tuberculosis through an unknown agency, he must remain in doubt (suspense). It is to be regretted that satisfactory anatomical investigations of this question are wanting.

Dr. H. Hallopeau states, "Although the hypothesis of a microbial infection cannot be positively eliminated, for my part, I incline to think that it is rather a question of autointoxication. The absence of transmissibility and the great analogy with one of the forms of iodism may be brought forward in favor of this way of looking at it; there would be a chance, to decide the question, to make research about the chemistry of the blood, nodes, and the urine."

Whether we consider erythema nodosum a distinct affection or a manifestation of the erythema group of diseases we are confronted with the fact that the majority of authorities believe the cause to be of infectious origin, but as to its nature and how

and where it enters the system we are yet in the dark. The failure to isolate a microorganism does not necessarily prove the fact that it does not exist in this disease, as in many other diseases, such as epidemic anterior poliomyelitis, glandular fever, Weil's disease, tuberculosis, gonorrhea, etc., the microorganism either cannot be demonstrated or is demonstrated with the greatest difficulty. Furthermore, microorganisms are found in scarlatina and other infections in which their pathogenicity is certainly far from being proved, therefore, it seems to me it would be unwise to deny that a specific microorganism does not exist in erythema nodosum, but that the isolation of the organism from the living body would be necessary to firmly establish its position as the cause of this disease. In attempting to form an opinion as to whether erythema nodosum is a distinct disease or one of the forms of the erythema group of diseases, on account of the conflicting beliefs of the different authorities we are unable to arrive at a satisfactory conclusion. As to whether this affection is caused by the tubercle bacillus, in going through the literature at my command, I was unable to find but one authority who was inclined toward the belief that this disease was caused by the tubercle bacillus.

Hildebrandt (21) reported a woman who showed signs of tuberculosis as a child, who was seized with an acute angina, stomatitis, and after ten days, an erythema nodosum. At the height of the attack there was a positive diazo reaction and two guinea pigs inoculated intraperitoneally with venous blood of the patient died of tuberculosis. Therefore, he concluded that at the height of the erythema nodosum virulent tubercle bacilli were present in the circulation. The author cited four other similar cases and expressed the belief in a possibility of a form of disease being produced by the tubercle bacillus which may be distinguished from the ordinary erythema nodosum. The opinion of Dr. Klein above noted should be given due consideration as regards the tubercle bacillus being the cause of erythema nodosum. In summing up the aetiology of erythema nodosum it can be stated that the clinical evidence tends to show that it is probably caused by a specific microorganism of unknown origin and nature, that it may manifest itself as a distinct disease, that erythema nodosum and erythema multiforme may be associated with one another, consequently a sharp line of demarcation between the two cannot be invariably maintained as they may blend into one another so readily that the precise labelling of a case may be in many instances an impossibility, that the symptoms, systemic and local, may at one time strongly resemble erythema nodosum and at another time erythema multiforme, that there may be cases which, in their incipency, present typical symptoms of erythema nodosum and as the progress might well be designated cases of erythema multiforme and vice versa.

SYMPTOMATOLOGY.

Incubation:—The length of time of this period is about seven to ten days.

Invasion:—Usually this covers from a few days to a week, and is accompanied with general lassitude, malaise, anorexia, a slight irregular temperature, gastric irritability, slight chills, and pains in

various portions of the body. In the severer forms these symptoms may suggest typhoid fever, appendicitis, meningitis, renal colic, or intussusception.

Eruptive stage:—Constitutional symptoms. These are variable as in the mild cases they are slight and usually consist of malaise, lassitude, aching in various portions of the body, especially the back, joints, limbs or all, headache, constipation, lack of desire for foods, chilly sensations, parched lips and fever. The temperature usually is not high hovering around 101° F., is continuous, falls by lysis and endures for a few days to a week or more. In the severer cases there may be stiffness, swelling, and pain in the joints, pharyngeal and laryngeal inflammation and visceral involvement, upon which Osler lays special stress, as cerebral, pulmonary, cardiac, gastrointestinal, renal, together with those symptoms just referred to as liable to be present in the mild cases of the disease. It should be borne in mind that at times the constitutional symptoms may be severer than the local symptoms and vice versa.

Eruptive characteristics. Sometimes the nodes make their appearance suddenly and without any previous visible local manifestations or subjective sensations in the tissues in which they arise while at other times their appearance is preceded by pain and sensitiveness for two or three days in the area where they manifest themselves. The nodes vary in size from a pea to a hen's egg occasionally reaching the size of a fist, but in the majority of instances they are from one half inch to one and one half inches in diameter. Their shape is round or ovoid, and their surface is distinctly elevated. They manifest themselves singly or in crops of two or three and at times in crops of six or more, the process extending over a period of one to six weeks, the first crop disappearing in about six to eight days to be followed by a new crop and so on, therefore, the nodes appear in many stages of development and retrogression. They are usually distributed symmetrically, do not coalesce, and do not have borders which are well defined as they merge insensibly into the surrounding tissues. At first they are of a light rosy red color, later on becoming darker red and as they undergo retrogression they become bluish or purplish or yellowish or a combination of these hues are seen resembling the black and blue marks of a contusion. During their height they are tense, smooth, and have a shiny look and later on they sometimes become somewhat soft giving to the touch an impression that they contain fluid. They do not suppurate. Generally they are very sensitive and painful to the touch and at times even the weight of the bed clothes causes suffering. They do not cause itching. For the most part the nodes are located upon the anterior and inner surfaces of the legs but occasionally they occur upon the thighs, feet, nates, arms, hands, and face, and rarely upon the chest, abdomen, and mucus membrane of the mouth. Sometimes as the nodes disappear a fine desquamation takes place and rarely flaking occurs.

COMPLICATIONS.

1. *Gastrointestinal.* These may be manifested by paroxysmal abdominal pains of variable severity and length of time, by vomiting, diarrhoea, hæmatemesis, and melæna. In Osler's (1) table of twenty-nine cases of the erythema group of skin

diseases, under the head of erythema, he reported fourteen cases, and in ten of these gastrointestinal symptoms were prominent. Later on he (22) quoted two cases of Sutherland and one of Burrows in which the gastrointestinal symptoms were severe, but it should be stated he did not characterize the eruption, merely stating, "a skin eruption appeared." In Monro's (11) and Miller's (12) patients severe gastrointestinal symptoms were present. There seemed to me to be sufficient evidence in the report of Miller's case to warrant me in including it under the title of erythema nodosum although other eruptions were present. Schlesinger (6) in his article referred to and described the gastrointestinal manifestations of this affection.

2. *Arthritic.* Puffiness of the joints and involvement of the synovial membranes or tissues surrounding the joints accompanied with pain which is at times mild and at other times severe in character and restriction of motion, present themselves frequently. Only two of Kuhn's (5) patients complained of joint pains. Meara's (18) patient had pains in the knees but there was not articular involvement. Schlesinger (6) stated articular involvement deserved special mention as it demonstrated the relation of this condition to rheumatism. Walker (23) reported joint pains in two of his three patients, and Cotton (24) in discussing Walker's paper reported six cases of erythema nodosum in one of which articular rheumatism and endocarditis were associated. Symes (10), from his experience, stated that the signs or history of arthritis are not found in more than 10 per cent of all cases of erythema nodosum. In Osler's (1) fourteen cases of erythema, six were complicated with arthritis or had arthritic pains.

3. *Cerebral.* Meningeal symptoms and involvement of the other brain tissues may be manifested by delirium, aphasia, hemiplegia, etc. One of Osler's (1) fourteen patients had delirium and in one patient out of thirteen of Symes' (3) meningitis developed, and the patient died two and one half days after the onset of the erythema nodosum. In case No. 2 of Abt's (19), delirium, convulsions, stupor, and coma occurred followed by death. I have referred above to Monro's (11) cases of aphasia, paralysis, etc.

4. *Renal.* Hæmaturia with or without nephritis and nephritis with albumin and casts may be present. In five of Osler's fourteen cases, nephritis or erythema manifested themselves, and two of these he does not believe of uræmia. He stated the imtoxic origin, probably causing the skin lesions of Dr. M. Ebersson states not sufficiently recognized disease a distinct affection is. Abt (19) found albumin in the urine of one

Professor P. G. Unna writes that as having his view erythema nodosum is a erythema nodosum disease with typical localization manifested by endo-typical series of symptoms. A ser symptoms. Severe forms tubercles with inflammations had endocarditis with other symptoms. being mild and

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(1) fourteen cases, three patients showed evidences of endocarditis or pericarditis. Cotton (24), see under arthritic complications.

6. *Respiratory.* Dyspnea, swelling, and hyperæmia of the tissues of the fauces, emphysema, pneumonia, pleurisy, cough, and spasmodic croup may be present as complications. In two of Osler's (1) fourteen patients, respiratory complications were present. Schlesinger (6) considered pleurisy a rare complication.

7. *Hæmorrhage* from the mucus membranes. This may take place from the nose, gums, bowels, stomach, and kidneys. Four of the fourteen patients in Osler's (1) series of erythema had hæmorrhages from the mucus membranes. Otitis media, chorea, enlargement of the lymph glands, thrombosis, and splenic enlargement may present themselves as complications.

8. *Tuberculosis.* In regard to the relationship of erythema nodosum to tuberculosis the vast majority of authorities believe it is not concerned in the production of tuberculosis, except by lowering the vitality it may prepare a favorable soil for the harboring of the tubercle bacilli the same as obtains in other debilitating diseases. Tuberculosis and erythema nodosum may coexist and tuberculosis may develop in patients who have had erythema nodosum, but from the study of the literature at my command, it does not seem to me that reasonable evidence has been produced to warrant us in linking together these affections. Kuhn (5) found that eight patients in his series of twenty-two cases came from families in whom a tuberculous history could be obtained, but he thought as tuberculosis was prevalent in Berlin it would be incorrect for him to conclude tuberculosis was casually concerned with erythema nodosum and to look upon the disease as an early evidence of tuberculosis in those whom it affected was unjustifiable. One of his patients died of tuberculous meningitis two months after the erythema nodosum occurred, and another patient died of tuberculous pleurisy three months after the attack of this affection. As regards Abt's (19) patient, he stated the picture was typical of basilar or tuberculous meningitis.

It has not been my purpose to try to show that in erythema nodosum complications may be present in a greater number of cases than in cases in which they may be absent, and it would be absurd to state that erythema nodosum could not manifest itself without complications. In the infectious and infectious exanthematous diseases, in which microorganisms either cannot be demonstrated or are demonstrated with greatest difficulty, many times they continue their course without complications manifesting themselves, this being the fact it is just as rational to infer that erythema nodosum can and does occur without presenting complications, exhibiting as its most pronounced symptom the characteristic skin lesion. It is my belief that erythema nodosum is not diagnosed as frequently as it should be and if when diagnosed, more careful and thorough study of the patient would reveal complications existing to a greater extent than heretofore noted or to the same extent as existing in other infections and infectious exanthematous diseases. On the other hand, when

complications do occur in this disease it might be argued that they might be due to some other agent than that causing the erythema nodosum as this affection lowering the resisting powers prepares a favorable field for the invasion and harboring of microorganisms, but my study of the subject has not unearthed any evidence which has demonstrated the existence of definite microorganisms or other factors as being the cause of any of the complications occurring in erythema nodosum. The above argument would hold good in other diseased conditions especially the infections, but I am sure we generally consider complications occurring in them to be due to the same agent—unless proved otherwise and this I might say is rarely done—as that producing the original disease, *ergo*, it seems to me that it is justifiable and reasonable to consider erythema nodosum and its complications as being produced by the same agent or agents.

PATHOGENY AND PATHOLOGY.

The lesions are due to an inflammatory process affecting the entire skin with involvement of the deeper tissues. Atkinson, of Baltimore, believes there is an overcrowding of the blood and lymph vascular spaces and exudation of blood cells, both white and red. Kaposi thought the lesions to be more fully developed and stable urticarial wheals. Schlesinger (6) states there is infiltration of the deeper layers of the subcutaneous tissues. Nobecourt (25) after studying ten young children with infectious erythemata was convinced that in the course of an infection from the streptococcus or some other germ, the liver fails to destroy all the toxins elaborated and the kidney is unable to eliminate them all. The unneutralized toxins thus retained in the body affect the vasomotor centres for the skin and induce an erythema or purpura. Hoffman (7) invariably found an inflammation in the walls of the larger subcutaneous veins, this inflammation always seeming to start at the forking of a vein. There was no actual thrombosis. The process might subside without leaving appreciable traces. Finger (20) who made a special study of erythema nodosum, came to the conclusion it was the expression of a septic process, he found from histological studies that, aside from localized oedema, round cell infiltration occurred in the cutis, and streptococci were present in the inflammatory tissue.

DIAGNOSIS.

Preeruptive stage. In this stage it is impossible to make an accurate diagnosis as the same symptoms may obtain in a great number of diseased conditions. If the visceral or psychic symptoms should be prominent, naturally appendicitis, intussusception, bowel obstruction, nephrolithiasis, cholelithiasis, typhoid fever, or meningitis would suggest themselves. As Osler (22) stated, a careful anamnesis, especially in children, might bring out the fact of previous attacks either of skin lesions, of arthritis, or of intestinal crises and that it would be wise to wait for the appearance of the skin lesions in the patients before having operations performed. That patients have been operated upon for intussusception, etc., before the eruption had made its appearance is a fact; and Osler (22) cited cases.

The points upon which I would lay special stress are, thorough study of the history, frequent and careful skin and physical examinations, and cautious and deliberate interpretation of the symptoms.

Eruptive stage. The appearance of the eruption clears up, to a great extent, the diagnosis, yet, instances do occur in which difficulties may be experienced. As the skin lesions of erythema nodosum have already been pictured it will not be necessary for me to describe them again in connection with the affections to be considered.

1. Contusions. These are most likely to be single, they do not come out in crops nor do they present deep nodular formations. Constitutional disturbances are absent and the cause can usually be determined.

2. Erythema multiforme. The lesions have many types as papular, vesicular, bullous, annular, rounded; there may be a coalescing with neighboring eruptions to form figures, rings, etc., and they are not deep seated and nodular nor are they apt to be painful. As a rule constitutional symptoms are either absent or not well marked. As stated above, erythema nodosum and erythema multiforme are often associated blending into one another so readily that a precise diagnosis is not always possible.

3. Erysipelas. This affection generally presents an inflammation which spreads with little or no tendency to become circumscribed. There is a sharp line of demarcation from the surrounding healthy tissue. The face is most frequently affected. Changes of color like in contusions are absent and desquamation is common.

4. Syphilis. The nonulcerating variety of gumma are sharply defined, indolent, not painful, of long duration, influenced by mercurials and potassium iodide, and scars may be present. The history would aid, very materially, in reaching a correct diagnosis, however, great difficulty may be experienced in differentiating erythema nodosum from syphilis as is evidenced by the study of cases by Marcuse (26), Trautman (27), and Beurmann and Claude (28).

5. Erythema induratum scrofulosum (Bazin). In this affection the nodes are deep seated, asymmetrical, develop slowly, pursue a chronic course, show a tendency to break down and form ulcers, are painless, are not accompanied with acute systemic disturbances, and the affection usually occurs in scrofulous subjects. There still exists much confusion as to whether Bazin's disease is or is not of tuberculous origin, and those interested in this subject are referred to the excellent articles of Whitfield (29) and Weiss (30).

PROGNOSIS.

In uncomplicated cases this is usually favorable, but when complications manifest themselves it would seem best to be guarded in one's prognosis. In some patients relapses may occur.

TREATMENT.

Unfortunately internal medication has little or no effect upon this disease, but the general constitutional disturbances require attention. The patient should be put to bed and a simple nutritious diet advocated, as egg albumin water, milk, strained gruels, *blanc mange*, gelatin, stewed fruits, etc. Water, the carbonated waters and fruit juices

should be used freely. Constipation should be corrected with appropriate measures. During convalescence a fuller yet readily assimilable diet would be advantageous. The various tonics as arsenic, quinine, nux vomica, iron, etc., will be found helpful in the majority of cases. Locally, solutions of sodium hyposulphite (5i to ʒi of water), ichthyol, (ʒi to O.i of water), boric acid, phenol, lead water and laudanum, and hot fomentation may prove efficacious in reducing the inflammation and relieving the pain. As regards the complications, measures should be used appropriate to the special conditions present.

I append the report of a case, J. H., æt. fifty-four, female, white, widow, American, housekeeper.

Family history: Unknown as parents died during infancy. Previous history: Rubella, scarlatina, pertussis, typhoid fever, and pneumonia during childhood and adolescence. Good recovery from all. "Muscular rheumatism" in various portions of body, slight and paroxysmal, for past twenty years. No joint involvement. Never had an eruption on any portion of body except as above noted. No history of attacks of amygdalitis, colic with or without an eruption, syphilis, or tuberculosis.

Present history: About the middle of April, 1908, general lassitude, malaise, anorexia, and aching in the limbs manifested themselves, these becoming so distressing that the patient was compelled to go to bed April 26, 1908. At this time the pain in the back, shoulders, and back of neck became quite severe, also pains in ankle joints and sensitiveness of the tissues of the lower third of the right leg occurred.

April 28th, the eruption presented itself. The condition of the patient on May 1st, when I first saw her, was as follows: Distressed facies, anorexia, headache, constipation, sleeplessness, severe pains in joints of ankle, knee, shoulder, elbow, wrist, back, and back of neck. Pulse 118; temperature, 102.4° F.

Physical examination: Examination of heart negative except a soft blowing systolic murmur at apex, not transmitted, pulmonary and aortic first sounds weakened. Examination of lungs, liver, spleen, abdomen, and throat negative. No evidences of syphilis or tuberculosis. On right leg, lower third, there were two nodes, one along inner edge of tibia $1\frac{1}{4}$ in. x $1\frac{1}{4}$ in., the other along outer edge of tibia $\frac{3}{4}$ in. x $1\frac{1}{4}$ in. Both were elevated, dark red, glossy, shaded off into the healthy skin and very painful, so much so, that it was necessary to protect them from the bed clothes. The joints above referred to were not swollen except the ankle joints, these being slightly so. Apparently they were not inflamed, but motion was restricted.

May 2nd, Urine: Amount twenty-four hours, f3xxvi; total solids 620 grains; cloudy; moderate amount of white flocculent sediment; dark amber; acid; specific gravity, 1.022; no sugar; albumin, distinct reaction; microscopic examination revealed a few hyaline casts.

Blood: Hæmoglobin (Von Fleischl) eighty-four per cent; erythrocytes (Thoma-Zeiss) 3,900,000 (400 squares counted); leucocytes 12,400 (800 squares counted); polymorphonuclear neutrophils seventy-nine per cent (500 leucocytes counted).

Pulse 120; temperature, 102.6° F.

May 3rd. On external surfaces of elbows, forearms, and lower leg, nodes appeared varying in size from $\frac{1}{2}$ in. to $\frac{3}{4}$ in., showing the same characteristics as above noted. General condition the same. Pulse 112; temperature, 102.2° F.

May 6th. Nodes on leg undergoing retrogression. Pains in joints not so severe. Urine: Amount during twenty-four hours f3xxxix; total solids 710 grains; cloudy; small amount of white flocculent sediment; medium amber; acid; specific gravity, 1.019; no sugar; albumin, distinct reaction; microscopic examination revealed many hyaline casts.

Blood: Hæmoglobin (Von Fleischl) eighty per cent; erythrocytes (Thoma-Zeiss) 3,700,000 (400 squares counted); leucocytes 12,600 (400 squares counted); polymorphonuclear neutrophils seventy-eight per cent (500 leucocytes counted).

Pulse 106; temperature, 101.6° F.

May 10th. On forehead just above supraorbital arches, three nodes appeared, $\frac{1}{2}$ in. in diameter and one node $\frac{1}{2}$ in. x $\frac{3}{4}$ in. on outer surface of right leg, middle third.

The nodes on forehead caused sufficient swelling as to almost close the eyes. Nodes on forearms and hands commencing to undergo changes. General condition same as May 6th. Pulse, 106; temperature, 102.2° F.

Urine: Amount during twenty-four hours, f3xxxix; total solids 752 grains; cloudy; moderate amount of white flocculent sediment; medium amber; acid; specific gravity, 1.019; no sugar; albumin, distinct reaction; microscopic examination revealed a few hyaline casts.

May 14th. Pains in joints and back moderate. General condition improved. Eyelids still swollen. Nodes in various stages of retrogression. Pulse, 94; temperature, 100.2° F.

Urine: Amount during twenty-four hours, f3xii; total solids, 785 grains; cloudy; medium amber; acid; specific gravity, 1.017; no sugar; albumin, distinct reaction; microscopic examination revealed a few hyaline casts.

Blood: Hæmoglobin (Von Fleischl) seventy-seven per cent; erythrocytes (Thoma-Zeiss) 3,670,000 (400 squares counted); leucocytes 11,400 (400 squares counted); polymorphonuclear neutrophils seventy-six per cent (500 leucocytes counted).

May 20th. General condition continued to improve. Joint pains, pains in back and nape of neck slight. Nodes disappearing, but on hands desquamation was taking place. Slight puffiness of eyelids. Pulse 82; temperature, 99.6° F.

Urine: Amount during twenty-four hours, f3li; total solids 831 grains; clear; small amount of white flocculent sediment; light amber; acid; specific gravity, 1.015; no sugar; albumin, a trace; microscopic examination revealed two hyaline casts.

May 27th. Patient complained of general debility. Sitting up in bed. All pains in joints, etc., gone. Examination of heart negative, except all first sounds weakened. All nodes gone. Slight yellowish discoloration of skin and sensitiveness upon manipulation of node areas of right leg. Desquamation of skin or hands continued. No puffiness of eyelids. Pulse, 74; temperature, 98.2° F.

Urine: Amount during twenty-four hours, f3liii; total solids 816 grains; clear; small amount of white flocculent sediment; pale amber; acid; specific gravity, 1.014; no sugar; albumin, a trace; microscopic examination negative.

Blood: Hæmoglobin (von Fleischl) eighty per cent; erythrocytes (Thoma-Zeiss) 3,940,000 (400 squares counted); leucocytes, 8,400 (400 squares counted); polymorphonuclear neutrophils seventy-three per cent (500 squares counted).

June 5th. Patient sitting in chair. Still complained of weakness. Discoloration and sensitiveness of node areas of right leg still present. Rest of skin normal. Pulse, 80; temperature, 98.8° F.; hæmoglobin (Tallquist) eighty-five per cent. Urine negative.

Salicin, the salicylates, and camphor monobromate apparently had little or no effect in controlling the pains in joints and elsewhere. Hot fomentations of sodium hyposulphite (5i to ʒi of water) seemed to relieve the local conditions. The patient recovered without sequelæ, but three months elapsed ere she regained her normal vigor.

It seems to me further comment upon this case would be superfluous.

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PROGNOSTIC AND DIAGNOSTIC VALUE OF THE LEUCOCYTES AND DIFFERENTIAL COUNT IN ACUTE ABDOMINAL INFECTION

(APPENDIX).

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	A.S.A.	G.	A.	P.	S.P.	G.P.	T.
Under 75 per cent.....	3	0	2	0	0	0	5
75 to 80 per cent.....	11	3	15	2	1	0	22
80 to 85 per cent.....	14	9	19	1	5	1	29
85 to 90 per cent.....	12	10	13	1	1	1	28
90 to 95 per cent.....	1	0	2	8	0	0	11
95 per cent. and up.....	0	0	0	0	0	4	4
Total.....	41	22	62	18	27	14	184
Under 10000.....	0	4	1	0	0	0	5
10 to 15000.....	18	6	18	3	1	0	36
15 to 20000.....	16	7	20	3	1	1	48
20 to 25000.....	3	5	16	2	3	1	30
25 to 30000.....	2	0	4	7	3	0	22
30 to 35000.....	2	0	2	2	1	0	10
35000 up.....	0	0	1	1	2	0	4
Total.....	41	22	62	18	27	14	184

Just a few years ago, the diagnosis of septic processes by the blood rested alone with the estimation of the total number of leucocytes per cubic centimetre. Whenever the number was above ten thou-

sand, we were taught to look for pus. The higher the count the more sure we were of our diagnosis. A vital exception to this statement was, that in the "mildest and severest cases" there may be no increase in leucocytes. At that time you would hear the surgeon say: We cannot depend on the blood count because in the very grave septic cases the white cells are not increased.

Dr. Frederick E. Sondern, December, 1906, in the *American Journal of the Medical Sciences*, first brought to our notice the importance of the differential count both as an aid to diagnosis of sepsis and the severity of the lesion. It was his idea that the total number of leucocytes shows the body resistance; that the percentage of polynuclears is an index of the degree of infection and toxic absorption. Suppose the infection is very severe, say a streptococcus, the body resistance may be paralyzed and there be no increase in the white blood cells; this occurs in a very small proportion of all cases. You will see a few such cases recorded on the chart. We have records of a few hundred blood counts in septic processes, but in not a single instance has the infection been so sudden and intense that the polynuclears did not reveal the septic process by a marked increase in their relative number. The graver the case, the higher the percentage of polynuclears.

Dr. Charles L. Gibson goes a little further, saying that a definite prognosis can be made by observing the relation of the total leucocyte count to the percentage of polynuclears. The *Annals of Surgery*, 1906, April, contains an article by Gibson, in which he presents a chart for this purpose. Gibson takes as the base line the normal upper limit of the leucocytes per cubic millimetre, 10,000, polynuclears, seventy-five per cent. For each increase of 1,000 cells he increases the polynuclears one per cent. Thus for an increase of 10,000 above the normal, or 20,000 cells, there would be an increase in the polynuclears of ten per cent, or eighty-five per cent. The chart is made by a series of parallel horizontal lines with the number of leucocytes on the left and the percentage of the polynuclears to the right. Gibson connected by a straight line on his chart, the total number of leucocytes, with the percentage of polynuclears in his counts, and found a rising line, in acute infective processes; a horizontal, or falling line, in chronic inflammations. He designated the variation between the polynuclears and leucocytes as so many units, according to the number of lines the percentage of polynuclears is above or below the total number of leucocytes. According to Gibson, a rising line of ten units or more indicates a severe condition. Should we have a leucocyte count of 30,000 or over, Gibson's chart is impractical, for if we had one hundred per cent. polynuclears, which never occurs, there should be a rise of only five units, suggesting a good prognosis according to his unit system of rise and fall. A polynuclear count of ninety-five per cent. means an unusual degree of infection and toxic absorption, yet a leucocyte count of 25,000 would have a rising line of only five units, to reach ninety-five per cent. polynuclears, and a count of this degree is always grave and denotes the highest degree of infection. Take a case with 35,000 leucocytes (and we see them infrequently), according to Gibson, the

polynuclears would be one hundred per cent. on a horizontal line, and for counts higher, there could be no application to his chart. His chart is purely schematic. We offer one founded on the principle that the polynuclears are affected in acute septic processes; that the other cells remain practically normal throughout if the resistance is good. This gives us a chart upon which we can apply Gibson's principles, for the higher counts as well as the lower ones.

We use ten thousand as the normal upper limit for the leucocytes (7,500, polynuclears; 2,500 lymphocytes and other cells). Let us say that the lymphocytes remain constant while the polynuclears are increased in acute infections. For 11,000 leucocytes—2,500 are lymphocytes, the remainder or 8,500 cells are polynuclears or 77.2 per cent. of the total leucocyte count, instead of seventy-six per cent., according to Gibson. At the beginning, with the new chart, the percentage of polynuclears increases more rapidly than by the Gibson scheme, then the reverse is true, finally when the leucocytes run up to 25,000, the two polynuclear per cents. come together on the same line.

We report here 184 cases of acute appendicitis, in which the blood examination was made a few hours previous to operation, except in a few instances in which the patient died without operation or there was a delay for some reason. Besides our own work, some of the counts were made by Dr. McDonald, Dr. Jenkins, Dr. Shaw, and Dr. Barnes. The patients were operated upon in the Mount Carmel, Grant, and Protestant Hospitals.

Following a scheme of Dr. Noehren, New York, the cases have been divided into five groups: 1, Acute suppurative appendicitis, inflammation confined to appendix. A. S. A. 2, Gangrene—G. 3, Abscess—A. 4, Perforation. Local peritonitis. P. 5, Spreading peritonitis—the infection not confined by adhesions. S. P. 6, General peritonitis—G. P.

No report has been included in which the operative history was insufficient to warrant a proper classification. No case was excluded because the blood examination did not conform to the pathological finding. The patients were all over fifteen years of age, with one exception. We include only those cases in which there was either a leucocytosis or an increase in the polynuclears—hence acute cases or chronic conditions with acute exacerbations. Sections were cut and histological examination made in every instance where there could be any question as to diagnosis.

There were six patients with leucocytes under 10,000. Gangrene was present in four of these cases. The leucocytes were as follows: 8,000, 8,300, 8,600, with an average polynuclear count of eighty-five per cent. for the three cases. The fourth was somewhat misleading, comparing the blood picture with the physical signs.

CASE I.—Mr. L., age fourteen, admitted to Grant Hospital, April 26, 1909. History: First attack of appendicitis in January 19, 1908; sick three days. The second attack in August of the same year. Present illness came on four days ago, April 22, 1909. Pain in the abdomen; later nausea and vomiting. Physician saw the patient in the afternoon. Temperature 100.5° F.; pulse 94. Cathartic given. Pain and tenderness over the entire abdomen, which required opiates. Highest temperature 101.6° F.; pulse 120.

At 3:30 p. m., April 26, 1909, the patient was complaining bitterly of pain; the abdomen was somewhat distended, tender throughout, but particularly over the appendix.

Blood examination: Leucocytes, 4,300; polynuclears, 79.8 per cent. Immediate operation was advised, for the case seemed to be one that was progressing with signs of general peritonitis.

Operation: The intestines and omentum greatly congested. Flakes of reddish, lymphlike exudates were found in the pelvis and about a beefy red appendix, which was four centimetres long, of average thickness. On section the inner surface was bluish black, no concretions.

Histological report: The mucosa had disappeared. There was entire absence of the crypts of Lieberkühn and lymphatic tissue. The submucosa was thickened—in some areas, the pigment of extravasated red blood might be seen. The cell structure was cloudy and granular. The nuclei were fragmented and stained poorly with hematoxylin. The tissue presented a granular, hyaline appearance. At other points, all tissue structure was lost and one saw a homogeneous, cloudy material, purplish in color. The muscular coats in places were studded with polynuclears. Everywhere small round cells might be seen, and here and there eosinophilic leucocytes. Inflammatory reaction, similar to the muscular coats, was seen in the serous covering.

This is a case of beginning gangrene in an old appendicitis, and is referred to at length, because, without the physical signs, one might be misled, from the blood count alone. Without the history, the blood count reveals very little, but with the physical signs, history, leucocytes 4,300, and polynuclears 79.8 per cent., it is safe to say, that we are dealing with no ordinary case of catarrhal appendicitis.

The fifth was a case of general peritonitis with a count of 8,600 leucocytes and ninety-four per cent. polynuclears. The patient died twenty-four hours after operation.

The sixth patient with a count under 10,000—had 9,700 leucocytes and 83.6 per cent. polynuclears. A small abscess at the base of appendix was found, together with a tuboovarian abscess. This patient gave a history of three distinct attacks of abdominal pain which had been diagnosticated appendicitis.

Of the fourteen cases of general peritonitis four of them had ninety-five per cent. polynuclears or more.

CASE II.—A Mr. M., admitted to Grant Hospital, October 5, 1908. Leucocytes, 19,000; polynuclears, 90 per cent. Because of his poor physical condition, he was put on the Ochsner preparatory treatment. On the fifth day the leucocytes had risen to 20,600, polynuclears to 95 per cent. A minus resistance of twenty-nine units. He died forty-eight hours later without operation. Post mortem examination revealed a general diffuse peritonitis.

CASE III.—The second case, admitted to Mount Carmel Hospital, November 13, 1908, after an illness of one week. Leucocytes 27,000; polynuclears 90.7 per cent. Patient was very sick; nausea and vomiting. She had all the signs of general peritonitis, complicated by pleurisy. No nourishment by mouth was given. Her stomach was washed a few times to relieve nausea. On November 18, 1909, her condition was critical. Blood count, leucocytes 30,000; polynuclears 95.1 per cent. Temperature 102.4° F.; pulse 140. She was taken to the operating room, a small incision made, drainage established. Patient died eighteen hours later.

CASE IV.—The third case, Mr. E., came to Mount Carmel Hospital, January 7, 1909. On admission, temperature 104° F.; pulse 100. Leucocytes, 32,000; polynuclears, 96 per cent.; a rising line of thirty-one units. The abdomen was not much distended, was very rigid; the patient was delirious, had been sick one week. The Ochsner preparatory treatment was instituted. The man improved. Leucocytes came down to 22,000; polynuclears to 87.8 per cent., on January 18, 1909. February 1, 1909, the white cells

were 24,000; polynuclears 89.6 per cent. Operation, February 2, 1909, a large abscess was drained. The patient is living and in fair health at this date.

CASE V.—The fourth case, a man, a Christian Scientist; sick four days; history of appendicitis; abdomen hard and rigid. A physician was called to relieve pain. There had been no sleep or rest since the onset of illness. Patient presented all the signs of a general peritonitis. Blood examination, leucocytes, 25,000; polynuclears, 95 per cent. The patient was advised to enter a hospital for surgical treatment. On the following morning the physician was told by telephone that his patient was much improved, that his services were no longer required. On the third morning, the physician was called again to administer morphine for the pain, and a second time was telephoned that he need not return, as the patient was in much better condition. Four days later the patient was seen a third time and found dying. The wife tried to relieve her conscience, evidently weakening in her faith, in the healing power of Christian science, asked if her husband might not be saved by an operation. This man was surrounded by "science healers"; science journals and their bibles could be seen everywhere. He died as he lived, in the ignorance of his faith.

There were seven cases of general peritonitis with polynuclears between ninety and ninety-five per cent.

CASE VI.—Mr. G., admitted to Mount Carmel Hospital, with leucocytes 19,200, polynuclears 91 per cent. A minus resistance or rising line of nine units. The family physician demanded an immediate operation. Incision and drainage were made; the patient lived forty-eight hours.

Two of these patients were operated upon at the Protestant Hospital. Both died. In one, the leucocytes were 8,600, polynuclears, ninety-four per cent. Rising line of thirty-three units. The second, 19,000 and ninety-five per cent. — thirty-one units. A third, with a leucocyte count of 30,000 and ninety-five per cent. polynuclears — twenty units rise, died at Mount Carmel Hospital following operation. The remaining three patients were in Grant Hospital — two of them died after operation. Blood counts as follows: 25,500 — ninety-four per cent. — rising line of seventeen units. The second, 23,000, and ninety-four per cent., a minus resistance of nineteen units. The last, a young man whose white cells were 23,000 and polynuclears ninety-two per cent., minus resistance of nine units, recovered.

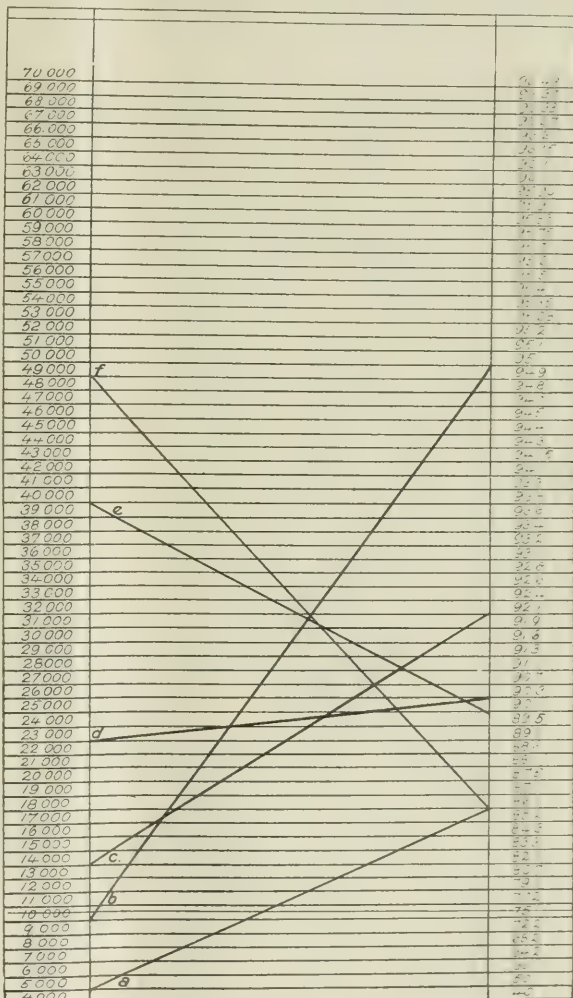
Of the acute suppurative appendicitis, twenty-six out of the forty-one patients had a polynuclear count between eighty and ninety; in one instance the polynuclears were ninety-one per cent. The leucocytes varied between 10,000 and 20,000 in thirty-four of the forty-one cases.

In those cases with abscess, thirty out of the sixty-two patients had polynuclears from eighty to eighty-five per cent. There were seventeen

cases below eighty per cent.; thirteen, from eighty-five to ninety per cent.; two above ninety per cent.

In twenty-two cases of gangrene, ten of them had from eighty-five to ninety per cent. polynuclears. The leucocytes in no instance ran above 25,000; in four cases, as already noted, the white cells were not increased.

Taking up together, the groups: Perforation with local peritonitis, and spreading peritonitis, we find



1. Gangrene of the gallbladder. Leucocytes, 4,300; polynuclears, 84 per cent. Fatal.
2. Perforation, typhoid fever. Leucocytes, 10,000; polynuclear, 80 per cent. Fatal.
3. Perforation, typhoid fever. Leucocytes, 10,000; polynuclear, 82 per cent. Fatal.
4. Gangrenous perforative appendicitis. Leucocytes, 23,000; polynuclear, 90.2 per cent. Recovery.
5. Appendicitis, local peritonitis. Leucocytes, 40,000; polynuclear, 89.9 per cent. Recovery.
6. Appendicitis, spreading peritonitis. Leucocytes, 49,000; polynuclear, 85.6 per cent. Recovery.

thirty-six out of the forty-five cases with polynuclears between eighty-five and ninety-five per cent. The leucocytes ranged, irregularly, from 10,000 up to 49,000. Four cases with very high total leucocyte counts were found. One case with perforation, 40,000 and ninety-one per cent. The second, an abscess with 40,300 and 89.3 per cent. The third, a case with free pus in abdomen, not walled off by adhesions, 40,000 leucocytes, 89.9 per cent. polynuclears. The fourth, a case of spreading peritonitis, with 49,000 leucocytes and 85.6 per cent. polynuclears. The body resistance in these cases, as indicated by the high total leucocyte count, was unusually good, while the degree of infection, revealed by the percentage of polynuclears, was rather mild. These patients had a plus resistance or a falling line. They made good recoveries.

To reconsider the group under general peritonitis, I should like to call attention to the total leucocytes. In this condition, where the average physician looks for the highest leucocytosis, we find one case normal or subnormal, the remaining eleven cases running along irregularly, up to 35,000. Thus you will see that the degree of the pathological change in acute septic infections is not disclosed by the leucocytes alone. Whenever one finds an abdominal infection with a leucocytosis, you may say that a septic process exists; that you have a surgical condition. However, the absence of a leucocytosis may be misleading from a diagnostic standpoint, for in the severest infections, as already stated, the body resistance, measured by the total leucocytes, may be paralyzed and the white cells show no change. The differential count in these bad cases, as well as in most others, discloses the true condition. In this series of general peritonitis, the polynuclears varied between eighty-eight and ninety-six per cent., giving us a positive clue to the nature of the lesion and the severity of the toxic poisoning. If we are to consider either the leucocytes or polynuclears separately, let us rely on the polynuclears. However, both should be taken into account in diagnosis as well as prognosis. For instance, there were five cases with polynuclears below seventy-five per cent. One will illustrate:

CASE VII.—A young man had several attacks of appendicitis; he came to Mount Carmel Hospital just after a recrudescence of his trouble. There was a tenderness over the region of appendix. Temperature, 98.4° F.; pulse, 82; leucocytes, 14,000; polynuclears, 50 per cent; eosinophiles, 10 per cent. Operation revealed an appendix, size of the little finger; no adhesion; some peritoneal congestion. Microscopically, the walls of the appendix were diffusely infiltrated with polynuclears. The lumen contained many pus cells. Eosinophiles, small round cells in the coats, and the thickening, all point to a chronic diffuse appendicitis with an acute exacerbation.

Here is a case in which the infection was so mild and well walled off that the polynuclears were not influenced while the leucocytes alone gave proof of the nature of the lesion.

In case of suppuration where the polynuclears are low, a favorable prognosis can always be given, but when the polynuclears are high, especially when the leucocytes are low, great precautions should be taken to protect the peritonæum from reinfection, from undue manipulation in the search for the appendix or concretions. Abscesses should be drained and the appendix removed later, if need be, at a second operation, when the degree of infection has abated. However, should the polynuclears be low,

the surgeon may complete the operation as desired, without fear of relighting a subsiding peritonitis.

Of the 184 cases, a falling or horizontal line was found in ninety. All of these patients with a single exception recovered. One patient died suddenly following operation, from causes unknown, with a horizontal line.

A rising line was seen in ninety-four cases. The fatal operative cases had rising lines as follows; nine—seventeen—nineteen—twenty—twenty—one—thirty-one—thirty-three units. Fatal cases not operated, rising lines of twenty-five and twenty-nine.

There was one case in which a rising line of thirty-one units was recorded—twenty-six days later, after the Ochsner preparatory treatment, this patient was operated upon and made a good recovery. Leucocytes, 24,000; polynuclears, 89.6 per cent; rising line, one unit.

Patients operated upon that recovered with a rising line of ten units or more showed the following variation of units: Two with ten units; one each with 11, 12, and 16—a total of 5, all of whom had either a local or general peritonitis. The prognosis from physical signs in each of these patients was grave.

It would be well to add a few fatal cases of sepsis, in conditions other than appendicitis to further illustrate the general prognostic accuracy of the chart.

CASE VIII.—Gangrene of the gallbladder, 4,300 leucocytes; polynuclears 85.5 per cent.; 14 units. This patient was a physician's wife. Both from the physical signs and the blood examination, the surgeon advised against an immediate operation. The husband believed in "Operate at the earliest moment after you have made your diagnosis in abdominal infections." "Tension was relieved." Death came forty hours later.

CASE IX.—Septicæmia following operation for ischio-rectal abscess. Leucocytes, 9,000; 93.2 per cent. polynuclears; 28 units.

CASE X.—Gangrene of foot. Leucocytes, 10,000; polynuclears, 95 per cent; 40 units.

CASE XI.—Puerperal sepsis. Leucocytes, 14,000; polynuclears, 92 per cent; 18 units.

CASE XII.—Septic abortion. Leucocytes, 32,000; polynuclears, 97 per cent; 45 units. This was a case of criminal abortion. Patient was admitted to Mount Carmel Hospital five days after the primary infection. The examining surgeon found a loop of the small intestine in the uterine cavity. She died twelve hours after the blood was taken for examination, with our highest polynuclear count, 97 per cent.

CASE XIII.—Typhoid perforation. Leucocytes, 10,000; polynuclears, 95 per cent; 40 units.

CASE XIV.—Septic abortion. Leucocytes, 9,000; polynuclears, 93 per cent; 28 units.

Patients with a falling, horizontal, or rising line of not over five or seven units do much better following surgical operations than those with a higher rising line.

A falling line will be found in all chronic and subacute septic inflammations.

A rising line of over ten units is not a good surgical risk, especially is this true, where there is little change in the leucocytes.

A sudden rise in leucocytes means a spreading process; hence the value of having an early count for the base line, that we may interpret any radical changes or complications. If the physical signs agree, a decrease in the leucocytes and polynuclears denotes encouragement. However, very infrequently the leucocytes may fall during the last twenty-four or thirty-six hours previous to death. This is not the rule, and probably accounts for

many of the irregular and misleading blood counts. The study of the polynuclear percentage by this scale, of those cases undergoing the Ochsner preparatory treatment, reduces the chances of error to a minimum and gives accurate information as to the patient's outlook at the earliest moment at which successful intervention is possible.

From this series of cases it appears that the differential leucocyte count interpreted according to this chart gives us an exceedingly accurate prognosis. Its application to the virulent type of peritoneal infection will enable the surgeon to more surely avoid interference in cases which are hopeless, but which from clinical symptoms hold out illusive promise and by this means accomplish two, much to be desired ends, viz.: that surgery shall not unjustly be blamed and that the fault be laid at the door of either the first attendant or the patient and his family in those instances where disaster follows the appendiceal lesions.

CONCLUSIONS.

Polynucleurs below seventy-five per cent.: If there is a leucocytosis, one may look for an old infection, well walled off, may be an acute exacerbation. Usually, there is a mild secondary anemia.

Polynucleurs, from seventy-five to eighty per cent.: Indefinite; the history of the case and the patient should be considered. In our series of 184, thirty-two had polynucleurs from seventy-five to eighty per cent.; fifteen were abscesses; eleven acute suppurative appendicitis.

Polynucleurs, from eighty to eighty-five per cent.: The patient is in no immediate danger unless the total leucocyte count is low, suggesting a poor resistance. If the leucocytes are increasing, an immediate operation should be advised if the relation of the polynucleurs to the total leucocyte count indicates a good resistance. If the leucocytes remain stationary or decline, the surgeon should rely on the physical signs in making up his mind when to operate.

Polynucleurs, from eighty-five to ninety per cent.: Look for a severe infection. If there is a proper leucocytosis, according to the chart, an immediate operation is indicated.

Polynucleurs, above ninety per cent.: Virulent infection, grave prognosis. Twenty-five of our thirty-one cases above ninety per cent. had some form of peritonitis. Where there is no increase in the leucocytes, and the polynucleurs high, little hope can be entertained for the patient from an operation.

112 EAST BROAD STREET.

FREQUENCY OF CANCER OF THE CERVIX UTERI.*

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Cancer is a disease of antiquity. The name is supposed to have originated with Celsus who likened the "yellow and discolored veins and lines radiating from the seat of the disease to a resemblance of the crab." "Scleroma of the uterus was described by Galen as a hard tumor which originated in

phlegmon of the organ and which might be of long duration (also the scirrhus as durities renitens, tumens, inaequalis, verrucosa). Celsus differentiated the origin of the ulcer from a tubercle or furuncle, and the development of thymia from the ulceration; he stated that *omnis cancer non solum id corruptum quod occupavit, sed etiam serpit*. Cleopatra stated that in carcinoma the blood sometimes passed away with the urine. This may be taken as an evidence of vesicovaginal fistula late in the course of cancer of the uterus. Moschion describes the uremia which is associated with cancer of the womb. Paul of Aegina recognized scleroma of the uterus, mentioned by Galen, as a form of uterine cancer. Cancer of the uterus was also known to Hippocrates and other ancient writers." (Parvin.)

"Carcinoma was described early in the last century by pathologists, but it remained for Robin in a paper published in 1855 to demonstrate that the disease had its commencement in the epithelium. Cornil, in 1865, also showed clearly the epithelial origin of the disease. Waldeyer, in 1867, and again in 1872, showed conclusively that all carcinomata owe their development to a proliferation of epithelium" (Cullen).

With the development of medicine during the last quarter of a century our knowledge of the histology of cancer has been well nigh perfected. Unfortunately our knowledge of its aetiology has not kept pace with the advancement in other lines of work. The present agitation in reference to cancer will soon stimulate such endeavor in research as to the nature and cause of the disease as to make us hope for an early solution of the problem. It is necessary in order to stimulate this interest to point out from time to time the results of the ravages of this disease. That it is necessary to find the cause and prevention of cancer of the uterus I hope from a statistical study to show in this paper.

Cancer is the disease which will eventually supersede all others in importance. The progressive increase of the disease and the lack of adequate means to prevent its occurrence will soon make it the most deadly of all maladies. In a recent paper I have shown that, if the present rates of increase in cancer and decrease in consumption be maintained, cancer will exact more deaths in the registration area of the United States by the year 1931 than consumption. It behooves us as gynecologists to pay particular attention to cancer of the uterus as this is the most frequent form of the disease as it occurs in women.

In England the registrar general's report for 1900 gives the order of frequency of cancer in women as follows: Uterus, 22.5 per cent.; breast, 15.8 per cent.; stomach, 13.8 per cent.; liver, 14.3 per cent.; intestines, 5.7 per cent.; rectum, 5.2 per cent.; ovary, 1.7 per cent.; oesophagus, 1.3 per cent.; bladder, 0.9 per cent.; tongue and mouth, 0.6 per cent.; jaws, 0.6 per cent.; neck, 0.5 per cent. The American statistics for 1900 shows the following: Uterus, 27.68 per cent.; stomach, 24.47 per cent.; breast, 15.78 per cent.; liver, 12.59 per cent.

Many observers contend that taking cancer as it affects both men and women the uterus is the most frequent site of the disease. Thus Welch who studied 31,482 cases collected from the clinics of Vienna, Paris, Berlin, Würzburg, Prague, and Genoa found

*Read before the May meeting of the Philadelphia Obstetrical Society.

the stomach the primary seat of disease in 21.4 per cent. of the cases and the uterus in 29.5 per cent. He states "if the sum total of all the cases is taken, the conclusion would be that about one-fifth of all primary cancers are situated in the stomach and somewhat less than one-third in the uterus." Reed states, quoting from the registrar general's report, that in England between 1847 and 1861, the deaths from cancer were 87,348; of these, 25,633 were males and 61,715 females. About 25,000 of the latter succumbed to cancer of the uterus. Byford states that one-third of all cases of cancer in women occur in the cervix of multiparæ. Hirst (1903) says that the uterus is the most frequent site of cancer in the human body.

I hardly agree with these statements, as I believe that the stomach is the most frequent site of the disease. I have recently shown that out of a total of 140,088 deaths from cancer the stomach and liver were the site of the disease in 36.4 per cent. and the female genitals in 14.7 per cent. Of course this statement does not show the relative frequency of the stomach and uterus as the site of the disease, but it is fair to infer from it that the stomach is more often involved than the uterus. Again the American statistics show the stomach to be the site in 43.06 per cent. in males, and 24.47 per cent. in females; so the combined table would show 38.76 per cent. for the stomach against 27.68 per cent. for the uterus. These figures are nearly in accord with Virchow who stated that the stomach was the primary seat of cancer in 34.9 per cent. of all cases; d'Espines figures are even higher, he showing in his studies the stomach to be the site in 45 per cent. of cases. Even if figures vary as to the frequency of primary cancer in these two organs all available statistics agree that the uterus is the most frequent organ to be attacked primarily in women.

In this connection it is interesting to note the variation of frequency which takes place at different periods of life. Thus, the percentage given, namely 27.68 per cent., represents the frequency of uterine cancer in females at all ages. Between the ages of twenty and forty-four cancer of the uterus occurs in 39.99 per cent. of all cases, between forty-five and sixty-four in 30.42 per cent., and over sixty-five in 15.19 per cent. While this shows the age of greatest frequency as compared to other sites it does not show the age of greatest frequency of cancer of the uterus itself. It must be borne in mind in reference to this statement that the age frequency of other sites has a marked bearing on the estimation of the age frequency of the uterus as compared to other sites.

That cancer of the uterus is a disease worthy of our utmost attention is undoubted. Quoting from B. C. Hirst: "A German author states that one per cent. of women between forty and fifty die of cancer; that there are more deaths from this cause than from labor, and that the death rate from cancer is greater than the mortality of the Franco-Prussian war." Dührssen, in commenting on the horrible increase of cancer of the uterus, states that: "25,000 die annually in the German empire from carcinoma uteri, or three times as many as die in childhood from all causes." Spencer has shown that: "In England and Wales during the years from 1901 to 1905, 19,645 women died of cancer of the uterus.

The disease in these countries carries off nearly 4,000 adult women annually, the great majority of whom are mothers, usually mothers of large families."

In a recent paper I have shown that in the registration area of the United States, one woman out of nine over thirty-five years of age dies of cancer. This does not show the frequency of cancer of the uterus, but as statistics agree that about one third of all cancer in women is situated in the uterus it might be inferred without exaggeration that one woman in thirty past the age of thirty-five will die of cancer of the uterus. In the United States during the year 1900 for certain occupations the total death rate was 45,491, of these 501 died of cancer of the uterus. This means that one woman out of ninety at all ages died of cancer of the uterus. Out of a total of 529,630 deaths in the registration area of the United States being the annual average for the years from 1903 to 1907 inclusive for both sexes and all ages 3,263 died of cancer of the female genital organs. This shows that one woman out of 162 of the whole population (male and female) will die of cancer of some part of the genital canal. It is impossible from the figures given to estimate the proportion of the female population which will die of this disease, as the sexes are not separated.

The question of increase of cancer in general and of the female genitalia in particular is important. Cancer has increased from 64.5 per 100,000 population in 1901 to 73.1 in 1907. In the registration area of the United States the number of deaths from cancer of the female genitalia in 1901 was 2,919; in 1902, 3,033; in 1903, 3,289; in 1904, 3,436; in 1905, 3,637; in 1906, 4,090; in 1907, 4,388. The proportion of deaths from cancer of the female genitalia per 100,000 population for these years was 1901, 9.3; 1902, 9.5; 1903, 10.1; 1904, 10.4; 1905, 10.8; 1906, 10.0; 1907, 10.5. It will be seen from these figures that while cancer of the female genitalia has increased during this period it has not kept pace with the increase of cancer in general.

Williams holds that cancer of the uterus is on the increase in England and Wales, and Dührssen is of the same opinion in reference to the German empire.

That cancer is the most important lesion of the genital tract that we have to consider admits of no controversy. It is the most frequent and above all others the most fatal. The annual average of deaths during the years from 1901 to 1905 inclusive, was from metritis, seventy-eight; uterine hemorrhage, eighty-nine; uterine tumor, 581; other diseases of the uterus, 486; ovarian tumor, 430; diseases of the tubes, 559; other diseases of the female genitalia, 112; making a total death rate of 2,335. Cancer of the female genitalia for the same period had an annual average death rate of 3,263. In other words, cancer of the female genitalia killed about one and one-half times as many women as all other diseases of the genital tract combined. During this same period the annual average death rate from causes incident to childbirth was 4,643. These deaths were divided as follows: Accidents of pregnancy, 549; puerperal hemorrhage, 337; other accidents of labor, 295; puerperal septicemia, 2,057; puerperal convulsions, 911; puerperal phlegmasia alba delens, 4; other puerperal accidents, 488; puerperal diseases of the breast, 1. It will be seen from these figures

that while the deaths from all causes incident to childbearing exceed those from cancer of the genital tract cancer kills more than any one puerperal cause. These figures are not in accord with Dührssen who states that cancer of the uterus kills, in the German Empire, three times as many women as die in childbirth. I am inclined to believe that his statement must be an exaggeration because the cancer death rate in Germany (71 per 100,000 in 1900) is not appreciably higher than in the United States (68.3 per 100,000 in 1900), and I am sure that their obstetrics are not over three times better than ours. But in spite of this inconsistency in figures between that country and ours we must appreciate that a disease that will kill almost as many women as childbearing is one that is most important. This is particularly the case when we realize that this disease is rapidly on the increase.

In 1907 cancer of the female genitals killed over three times as many women as abdominal tuberculosis; five times as many as venereal diseases; fourteen times as many as tumor; nearly twice as many as endocarditis; seven times as many as ulcer of the stomach; twice as many as cirrhosis of the liver; almost as many as typhoid fever; nearly twice as many as appendicitis; five times as many as were killed in all railroad, street car, horse and carriage and automobile accidents.

The question of race in reference to cancer of the uterus is important. It was long believed that the colored race enjoyed a certain immunity against cancer. The older reports tended to confirm this view, but at the present time while cancer in general is apparently less common in negroes (48) than in whites (66.7) (census 1900), cancer of the uterus is more frequent. In 1900 the death rate from cancer of the uterus for negroes was 20 against 15.7 for whites. This holds true for all age periods as shown in the following table:

	All ages.	Twenty to forty-four.	Forty-five to sixty-four.	Over sixty-five.
Whites	15.7	10.5	58.3	54.9
Colored	20.0	14.6	80.3	82.0

The effect of parent nativity upon the frequency of cancer of the uterus is shown in the following table:

Birth place of mothers.	Rate.
United States	12.9
Ireland	17.1
Germany	10.7
England and Wales	16.3
Canada	12.4
Scandinavia	4.2
Scotland	13.8
Italy	10.8
France	26.6
Hungary	7.0
Bohemia	7.1
Russia	3.7
Poland	1.2
Other foreign countries	8.5
Native whites	12.8
Both parents native	13.6
One or both parents foreign	6.1
Foreign	24.5

This table shows that the death rate was highest in those whose mothers were born in France and lowest in those having mothers born in Poland. The death rates were higher in the native born than those whose parents were native and foreign or both foreign. This would seem to show that admixture of the races lessen the frequency of the disease.

The death rates in the foreign element was almost twice as high as in the natives. Williams would attribute this to the change of life from simplicity to excesses. I am inclined to believe that the explanation, at least in regards cancer of the cervix, is the more frequent childbearing and lack of proper care during and after labor.

As far as my studies go I am not prepared to say that occupation bears any particular significance as to the etiology of cancer of the female genitalia. Inasmuch, however, as it opens up a wide field for study the following table is presented:

Occupation.	Total death rate.	Cancer of the female genitalia.	Ratio.
Musicians and teachers of music.....	279	3	1 in 93
Teachers in schools.....	1,890	13	1 in 146
Stenographers and typewriters.....	248	1	1 in 248
Bookkeepers, clerks, etc.....	788	5	1 in 157
Hotels and boarding house keepers.....	522	3	1 in 174
Laundresses	2,398	39	1 in 61
Nurses and midwives.....	1,330	20	1 in 66
Servants	17,484	210	1 in 83
Artificial flower makers and paper box makers	26	0	
Cigar and tobacco workers.....	163	2	1 in 81
Milliners	461	7	1 in 61
Dress makers and seamstresses.....	2,965	55	1 in 54
Telegraph and telephone.....	81	2	1 in 41
All other occupations	15,718	134	1 in 117

The age incidence of cancer of the uterus is shown in the following table:

Age	Cases	Percentage.
Under twenty years	7	0.3
Twenty to twenty-four years.....	6	0.2
Twenty-five to twenty-nine years.....	43	1.9
Thirty to thirty-four years.....	103	4.5
Thirty-five to thirty-nine years.....	205	9.0
Forty to forty-four years.....	288	12.0
Forty-five to forty-nine years.....	413	18.0
Fifty to fifty-four years.....	344	15.0
Fifty-five to fifty-nine years.....	276	12.0
Sixty to sixty-four years.....	230	10.0
Sixty-five to sixty-nine years.....	164	7.0
Seventy to seventy-four years.....	121	5.0
Seventy-five years and over.....	88	3.5
Unknown	3	0.1

It will be seen from this table that the age of greatest frequency is between forty-five and forty-nine (eighteen per cent.). It should be borne in mind, however, that, while this is the most frequent age period, cancer may occur at any age, so that, while the consideration of age in a particular case is of importance, it should not be given sufficient weight in the presence of suspicious symptoms to eliminate the presence of the disease.

If we study this table we find that seven or 0.3 per cent. of the cases occurred before the age of twenty. We further find that after the age of seventy the disease is more or less infrequent, 209 cases or 8.5 per cent. occurring after this period of life. It has long been recognized that the disease is most frequent during and immediately after the climacteric. A study of this table will bear out the truth of this belief. Thus of the 2,291 cases, 1,551 or sixty-seven per cent., occurred between the ages of forty and sixty-four.

It is generally stated that ninety per cent. of all cases of cancer of the uterus occur in the cervix. Of 182 cases of cancer of the uterus studied by Cullen 147 or eighty-one per cent. were situated in the cervix, and thirty-five or nineteen per cent. were in the body of the uterus. Of the 147 cases of

cervical cancer 128 or seventy per cent. were of the squamous variety and nineteen or eleven per cent. were adenocarcinoma.

Cancer of the body of the uterus develops as a rule later in life than cancer of the cervix and has a longer duration. Williams's table is as follows:

Age.	Percentage.
Twenty to thirty.....	8.3
Thirty-one to forty.....	3.6
Forty-one to fifty.....	19.0
Fifty-one to sixty.....	51.2
Sixty-one to seventy.....	16.7
Over seventy.....	1.2

The length of life in cancer of the cervix is usually given as two years while in cancer of the body it is thirty-two months.

113 SOUTH TWENTIETH STREET.

COMMON AMERICAN FOODS.

Calories per Ounce.

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I had occasion recently to prepare a diet list for an obese patient, and found that very few books contained much of practical value for my purpose. Many of the articles on obesity furnish a large number of German diets, or modifications thereof, which are seldom suited to the use of American patients. A large number of lists are also given of the fuel value of different foods by the gramme or by the pound, but they are seldom calculated by the ounce. It is rather inconvenient for most physicians to convert, in preparing diet lists, grammes into ounces, and pounds into ounces; and it is by the ounce that we must feed our American patients. It is also to be noted that in preparing a diet list, no fixed scheme can be adhered to, nor can any rigid rules be laid down. Individual modifications are necessary for any particular case. The age of the patient, his general condition, his ordinary habits, and other factors must be taken into consideration. Especially in obesity we must consider these matters so that the patient may obtain a diet both satisfying and not too different from the one to which he is accustomed in his regular mode of living.

I have, therefore, calculated the fuel value (calories) of a certain number of American foods per ounce (avoirdupois). A similar table of a certain number of foods is also given by Hutchinson (page 7, *Food and Dietetics*, second revised edition, 1906) and a useful table has also been prepared by Roberts (*Journal of the American Medical Association*, April 21, 1906, page 1162). A very good list of German foods has been worked out by Strauss (*Therapeutische Monatshefte*, Heft 1, January, 1909).

In preparing this table, I have utilized almost entirely the results obtained by the United States Department of Agriculture, and in particular *Bulletin No. 28* (revised edition) by W. O. Atwater, Ph.D., and A. P. Bryant, M. S. I refer any one wishing to know the percentage of water, protein, fat, carbohydrate in any particular food to this bulletin.

The following standards for American daily diet-

aries are given by Atwater (page 213, *Bulletin No. 21*, Office of Experiment Stations):

	Protein grammes.	Fuel value.
Woman with light muscular exercise.....	90—about 3	02.2400
Woman with moderate muscular work.....	100—about 3½	02.2700
Man without muscular work.....	112—about 3½	02.3000
Man with light muscular work.....	125—about 4	02.3500
Man with moderate muscular work.....	150—about 5	02.4500
Man with hard muscular work.....	150—about 5	02.4500

Similar European standards for daily diets for people of different classes are:

Man at moderate work (Voi): Proteins, 118 grammes; about 4 oz. Fats, 56 grammes; about 1.9 oz. Carbohydrates, 500 grammes; about 17 oz. Potential energy, 3,055.
Adult in full health (Playfair): Proteins, 119 grammes; about 4 oz. Fats, 51 grammes; about 1.7 oz. Carbohydrates, 531 grammes; about 18 oz. Potential energy, 3,140.

The following is the list which I have selected:

FUEL VALUE OF COMMON AMERICAN FOODS, PER OUNCE (AVOIRDUPOIS).

MEAT.	FRESH FISH.
Beef, fresh—	Bass, striped (centrals removed) (as p.).....16
Loin, porterhouse steak.....80	Sea, dressed.....16
Loin, sirloin steak (e.p.).....70	Halibut (e.p.).....35
Loin, tenderloin (as p.).....83	Dressed.....29
Beef, liver (e.p.).....38	Mackerel (centrals removed) (as p.).....23
Sweetbreads (as p.).....52	Perch, white, whole (e.p.).....31
Beef, cooked—	Dressed.....15
Roast (as p.).....101	Perch, yellow, whole (e.p.).....24
Sirloin steak, baked (as p.).....55	Dressed.....17
Loin steak, tenderloin, broiled.....81	Pike, gray, whole (e.p.).....23
Canned tongue, whole (as p.).....84	Dressed.....16
Veal, fresh—	Salmon, whole (e.p.).....40
Leg, cutlets (e.p.).....44	Mane, dressed.....42
Lamb, medium fat (e.p.).....121	Shad, whole (e.p.).....47
Chops, broiled (e.p.).....104	Dressed.....26
Leg, roast (e.p.).....56	Trout, brook, whole (e.p.).....28
Mutton, cooked—	Dressed.....17
Leg, roast (e.p.).....89	Trout, salmon, or lake (e.p.).....43
Pork, fresh—	Dressed.....15
Loin chops, average (e.p.).....103	Sardines, canned (e.p.).....70
Ham—	Oysters, solid.....19
Smoked, lean (e.p.).....78	One oyster according to size (Roberts).....3 to 10
Smoked, medium fat (e.p.).....121	
Smoked, boiled (as p.).....83	SOUP.
Goose, young (fresh) (e.p.).....114	Beef juice.....7
Pigeon (Strauss).....30	Beef soup.....15
Capon, cooked (e.p.).....30	Chicken soup.....6
Chicken, fricassée (e.p.).....53	
Chicken.....47	
Chicken, breast (Strauss).....50	
Turkey, roast (e.p.).....81	
Duck, cooked (Hutchinson).....47	
*Eatable portion.	
*As purchased.	
VEGETABLES.	FRUITS.
Asparagus, cooked.....14	Apples (e.p.).....18
Beans, string, cooked (e.p.).....6	One apple (Roberts).....40
Beans, lima, shelled, fresh.....35	Banana, yellow (e.p.).....29
(Canned).....22½	One banana, medium size (Roberts).....45
Beets, cooked (e.p.).....12	Cherries (e.p.).....23
Cabbage, fresh (e.p.).....9	Figs, fresh (e.p.).....24
Carrots, fresh (e.p.).....13	Grapes (as p.).....21
Cauliflower (as p.).....9	Oranges (e.p.).....15
Celery (e.p.).....5	One orange, medium size (Roberts).....60
Egg plant (e.p.).....8	Peaches (e.p.).....12
Onions, fresh (e.p.).....14	Pears (e.p.).....18
Onions, cooked, prepared.....12	Plums (e.p.).....25
Peas, green, cooked.....34	Raspberries (e.p.).....11
Peas, shelled, fresh.....39	Strawberries (e.p.).....11
Potatoes, fresh (e.p.).....33	Apple sauce.....45
Potatoes, cooked, boiled.....27	Marmalade, orange pulp.....99
Potatoes, cooked, mashed, and creamed.....32	Prune sauce.....27
One, medium size, 2 oz. (Hutchinson).....45	Strawberries, stewed.....29
One, 3 inches long (Roberts).....80	
Potato salad (Strauss).....30	LIQUORS. (Hutchinson.)
Spinach, cooked.....16	Beer, bottle.....27
Tomatoes, fresh (as p.).....7	Lager beer.....14
Turnips (e.p.).....12	Port.....41
Greens, dandelion (as p.).....18	Sherry.....48
Lettuce, tossed.....6	Sherry.....48
Pickles, mixed.....7	Sherry.....48
Pickles, sweet.....25	Sherry.....48
The amount varies with the method of preparing, and cannot be accurately estimated (Atwater and Bryant).	
DAIRY PRODUCTS.	MEALS, BREAD, ETC.
Hens eggs, boiled (e.p.).....48	oatmeal.....146
Hens eggs, uncooked (e.p.).....45	Boiled.....148
On an average a hen's egg weighs 2 ounces (Langworthy).	Rice.....102
One egg (Hutchinson).....70	Boiled.....102
	Tapioca.....105

DAIRY PRODUCTS.

Scrambled eggs (Strauss)...	60
Omelette (Strauss).....	85
Butter.....	225
Buttermilk.....	10
American cheese, pale.....	128
Neuchâtel cheese.....	95
Swiss cheese.....	135
Milk, condensed, sweetened.....	95
Milk, condensed, unsweetened.....	49
Milk, skimmed.....	11
Milk, whole.....	20
Whey.....	8
Cream.....	57

MEALS, BREAD, ETC.

Rye.....	74
Bread, Graham.....	75
Toasted.....	89
White, home made.....	77
1 slice $4\frac{1}{2} \times 1\frac{1}{2}$ in. thick (Roberts).....	59
Zwieback.....	123
Crackers (miscellaneous).....	119
One cracker (Roberts) 12 to 30.....	52
Pudding, rice, custard.....	45
Pudding, tapioca.....	105
Cornstarch (as p.).....	102
Sago (as p.).....	116
Sugar, granulated or powdered.....	16
Sugar, an ordinary lump (Hutchinson).....	85
Sandwich, egg.....	60
Chicken.....	60

1 p. m.	
Bouillon, 8 oz., and 1 egg.....	125
Lean meat or fish (not fried, no goose, no duck, no pork, no salmon) $\frac{1}{2}$ oz.	225 (Veal or chicken).... 580
Spinach or cauliflower or cabbage or turnips or asparagus or lettuce without oil, 5 oz.	80 (Spinach)
1 apple or 1 orange.....	40 (One apple)
Bread, 1 oz.	75
2 oz. claret (or 2 oz. Rhine wine and $\frac{1}{2}$ glass vichy).....	35
5 p. m.	
Coffee with saccharin, no milk, no sugar.....	10
7 p. m.	
Lean meat (beef, mutton, chicken, ham) 3 oz.	270 (Mutton)
Boiled potato, 3 oz.	80 (One pot)
(Sour pickle, 1.)	
1 apple or 1 orange.....	60 (Orange)
Bread, 1 oz.	75
Butter, $\frac{1}{2}$ oz.	595
2 oz. claret (or 2 oz. Rhine wine and $\frac{1}{2}$ glass vichy).....	35

Bed time.	
Milk, 4 to 6 oz.	80
Total 1535 calories.	

Water sufficient to bring total amount of fluid not to exceed 1500 c.c. (3 pints).

I have also found the following list very useful in certain cases of obesity:

On arising 6 ounces of vichy or plain water.	
Breakfast. Approximate calories.	
Boiled egg, one.....	70
Coffee, 3 oz. (milk, 1 oz.) 1 lump of sugar.....	35
Bread, 1 slice.....	230
Butter, $\frac{1}{2}$ oz.	75
10 a. m.	
3 small crackers.....	35
3 oz. milk (or 6 oz. vichy).....	95
Luncheon.	
Lean meat, 4 oz.	200 (Chicken breast)
Vegetables, 3 oz.	20 (String beans)
Green salad, 3 oz.	20 (Lettuce, no oil)
Toast, $\frac{1}{2}$ oz. (butter, $\frac{1}{8}$ oz.).....	30
2 oz. claret (or Rhine wine and vichy, 3 oz.).....	35
3 p. m.	
3 small crackers.....	35
3 oz. milk (or 6 oz. vichy).....	95
Dinner.	
Fish or lean meat, 4 oz. to 6 oz.	200 (Lake trout or leg lamb or veal)
Vegetables, 3 oz.	35 (Cooked beets)
Stewed fruit, 2 oz.	50 (Prune sauce)
Coffee, 3 oz., milk, 1 oz., 1 lump of sugar.....	35
1 slice of bread and $\frac{1}{4}$ oz. butter.....	90
1 oz. tapioca pudding (or 1 apple or 1 orange).....	45
10 p. m.	
1 apple or orange.....	40 (Apple)
4 oz. vichy.....	40
Total 1275 calories.	
Add sufficient fluid so that the total will not exceed 48 oz. (3 pints).	

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 No. 128. Eggs and Their Uses as Food. Paper, 5 c.
 No. 142. Principles of Nutrition and Nutritive Value of Food. Paper, 5 c.
 Experiment Stations Office, *Bulletin* No. 28. Revised Chemical Composition of American Food Materials. Paper, 5 c.
 No. 141. Experiments on Losses in Cooking Meat. Paper, 5 c.
 Remittances should be made to the Superintendent of Documents, Washington, D. C. by postal money order, express order, or New York draft. Currency may be sent at owner's risk or by registered letter. Postage stamps will not be accepted. See Price List II. Second Edition. Food and Diet. Superintendent of Documents, Washington, D. C.

1614 EUTAW PLACE.

By the use of this list, I believe that a diet of any desired strength can be prepared. I therefore submit a few sample diets for patients suffering from obesity, which can easily be modified to the individual needs, by utilizing the table. Personally, I prefer to use six meals a day, the usual breakfast, luncheon and dinner, with three small feedings between them. This has the advantage of preventing undue weakness and excessive desire for food at the main meals. Very few of my obese patients object to purchasing a scale, and weighing their food. In fact, I stimulate their interest and obtain their cooperation by this means. The patient soon becomes acquainted with the required amounts, and can then discard the scale. If the patient can afford it, it is also of advantage to purchase a small Fairbanks or similar house scale, so as to weigh himself at frequent intervals and thus prevent a too rapid loss of weight.

The following convenient list (to which I have added the calories) is given by James M. Anders (*Practice of Medicine*, seventh edition, 1905, p. 1239). Similar lists are given in most of the other standard textbooks:

Morning meal.	Approximate calories.
Fine wheat bread, 1 $\frac{1}{4}$ oz.	95
A soft boiled egg.....	70
Milk, 1 oz.	20
Sugar, 77 grains.....	20
Coffee, $\frac{1}{4}$ oz.	20
Noon meal.	
Soup, 3 oz.	25 (Beef soup)
Fish, 3 oz.	100 (White perch)
Roast or boiled beef, veal, or game or poultry, 6 oz. to 8 oz.	300 (Veal or chicken)
Green vegetables, $\frac{1}{2}$ oz.	25 (Spinach)
Bread, 1 oz.	75
Fruit, 3 to 4 oz.	60 (One orange)
No liquid (or only 4 or 5 oz. of very light wine).	
Afternoon meal.	
Soup, 77 grains.....	20
Coffee, 4 oz.	115
Milk, 1 oz.	20
Occasionally bread, 1 oz.	75
Evening meal.	
Caviar, $\frac{1}{2}$ oz.	25
One soft boiled egg (or two).....	70
Beef steak (fowl or game) 5 oz.	400 (Loin steak, tenderloin broiled)
Salad, 1 oz.	6 (Lettuce without)
Cheese, 1 dram.....	16
Bread (rye or bran) $\frac{1}{2}$ oz.	35
Fruit (or water, 4 to 5 oz.).....	40 (One apple)
Total about 1500 calories.	

A very good diet list is also used, at times, by Dr. L. F. Booker, at whose suggestion I have prepared this article:

3 a. m.	Approximate calories.
Coffee with saccharin, 1 cup.....	..
Toast, 1 slice.....	50
Butter, $\frac{3}{4}$ oz.	150
1 Egg (or 1 $\frac{1}{2}$ oz. cold lean meat, ham, or tongue).....	270

TREATMENT OF EPISTAXIS.

By BEVERLEY ROBINSON, M. D.,
New York.

Whenever the epistaxis is slight, or moderate, or when apparently it is doing no harm to the patient, but rather is of service, it is unwise to attempt to stop it. Certainly anything further than the application of cold to the frontal region, or sniffing up a little cold water in the nasal passages, is uncalled for and unwise. Nature not infrequently allows bleeding from the nose as a relief from symptoms or as a protection from other troubles more important. I should take this view, and properly, in healthy young people who at times are prone to bleeding from the nose. I should also take this view frequently, in typhoid fever, cirrhosis of the liver, and Bright's disease.

On the other hand, whenever the blood flow from the nose seems excessive and, therefore, of itself liable to injure the patient, it is judicious to make suitable efforts to stop it. Among the people it is popular to do a few simple things—cold locally, with wet compress pressed against frontal sinus, and head bent down, is almost of universal use and acceptance.

If this is not effectual very soon, cold water is sniffed up the nasal passages, with or without some astringent added, such as alum, or tannin, or gallic acid. Pressure outside the nostrils sometimes succeeds when instillations of astringent solutions are of little or no value. As to raising the hand, placing a key or other cold metal object in the back between the shoulders, etc., they have really little or no value.

In a similar way, I know of no internal remedies that practically serve much or truly to arrest an epistaxis when the blood flow is even, in small degree alarming by reason of its quantity, or the depleting and depressing effect on the patient.

After all, the main, essential thing to do in order to stop a too abundant epistaxis is simply to plug the nasal passages properly and effectively. This may be done very simply by taking a strip of aseptic, absorbent cotton, such as comes in layers, and twisting it round and round, so that it becomes about the size of the little finger, and then with a good light, nasal speculum, and a director or stiff probe, fill the lower and middle meatus as far back as possible, on one or both sides of the nose. When I say as far back as possible, I mean, as a rule, until the posterior pharynx is reached. Further, is ill advised, because it occasions useless discomfort.

Postnasal plugging is rarely called for, or desirable, inasmuch as nearly all nasal hæmorrhages are stopped readily with anterior plugging when it is thoroughly done. The posterior plugging may best be done with a pliable Steele's probe, which is coated with hard gutta percha, or varnish. An ordinary catheter, or Belloque's sound may also be used, and with all a thread which holds the tampon should be passed through the edge of the instrument used. Steele's probe is preferable, because it may be used in a very narrow or deflected nasal passage with relative ease.

After twenty-four or forty-eight hours, the plug, or plugs, begin to loosen by reason of the nasal se-

cretions produced and absorbed, and they should be carefully withdrawn and fresh ones substituted, which, as a rule, are not required.

In very many instances it will be found that profuse nasal hæmorrhage, arterial in character, comes from the artery of the septum, not far back from the anterior naris. The area in this spot over the artery is sore and ulcerated and may be induced by frequently picking the nose. Ordinarily, with it there is marked atrophic catarrh. Past middle life the ulceration of the septal artery may be induced primarily by arteriosclerosis, and picking the nose may be a habit, or not, which helps produce ulcer and hæmorrhage. When this condition is detected, surely with the eye, under a good light, and by means of a dilating speculum, a saturated solution of copper sulphate, applied one or more times by means of a cotton covered probe, will probably cure it. It is the best local application to make and is superior to chromic acid, silver nitrate, or electric cautery.

I believe that we are all originally indebted to Dr. George M. Lefferts for this useful knowledge. The rubber pouches, finger stalls, etc., advertised for the purpose of plugging the nares are relatively useless.

The foregoing treatment of epistaxis is the simplest and best. I have tried many sorts and treated many cases, and the result of my experience is here-with given.

There are a few instances of epistaxis that almost defy surgical art to arrest. They are those dependent on a cachectic blood disease in which coagulation does not occur, or only for a very short time, and then imperfectly. The prognosis in such cases, fortunately very rare, is very bad, and the result of the bleeding not infrequently fatal despite all efforts to arrest it.

42 WEST THIRTY-SEVENTH STREET.

A CRITICISM OF THE USUAL SURGICAL TREATMENT OF VARICOCELE OF THE BROAD LIGAMENT.*

By STEPHEN E. TRACY, M. D.,
Philadelphia,

Gynaecologist to the Stetson Hospital.

The surgical treatment for simple varicocele of the broad ligament which I have seen carried out at several clinics is so radical that it seems unjustified and for that reason I wish to call attention to this subject.

Here I wish to state that my remarks apply only to simple varicocele of the broad ligament and not to varicose veins found in connection with neoplasms of the uterus or appendages nor to other pathological lesions in the pelvis.

A varicocele of the broad ligament is a dilatation and tortuosity of the veins, usually situated toward the upper and outer part of the broad ligament, and may result from any condition which causes congestion of the pelvic organs or to anything which interferes with the venous circulation.

*Read before the Northwestern Medical Society, May 1, 1909.

The patient complains of weight and discomfort or of dull pain in one or both sides of the pelvis, is usually indisposed, tires easily, and suffers from backache. There is usually leucorrhœa and there may be dysmenorrhœa. As a rule the bowels are constipated.

The diagnosis will depend upon the symptoms, the absence of any gross pathological lesion or anatomical abnormality, and is made chiefly by exclusion.

In many of these cases the symptoms will persist in spite of local and constitutional treatment and the patient will finally consent, at the advice of a conscientious surgeon, to have an operation. When the abdomen is opened it is found upon inspection that the uterus and appendages are normal, and the only abnormal condition present is a dilatation of the veins in one or both broad ligaments. As I have often seen, the surgeon pulls up the appendage on the side where the patient complained of the greatest pain, takes another look at the healthy organs and then remarks "she had pain on this side and I will remove the appendage." In some cases the ablation is carried out on both sides. The patient is relieved of her discomfort, but has lost one or both ovaries. The surgeon credits himself with another abdominal operation, and, I presume, consoles himself with the thought that his work was brilliant. In removing the appendage what was done? The veins in the broad ligament were ligated and the varicocele, which had caused the symptoms, was cured. Why should not the veins have been ligated and the appendage allowed to remain? The result would have been the same, and the patient would not have been mutilated.

Where is the surgeon who would have the audacity or the assurance to remove a testicle for a varicocele of the spermatic cord, or do an amputation for varicose veins of the leg? Such a surgeon does not exist. Why, then, should not a similar procedure, ligation of the veins of the broad ligament, be carried out in these cases. If a surgeon was to suggest a castration for a varicocele of the spermatic cord, or an amputation for varicose veins of the leg, the patient would immediately lose confidence, and justly so, in the person giving such advice and would seek counsel elsewhere. Why should these poor, suffering, and trusting women be deceived and mutilated simply because the varicose veins are in a part of the body remote from visual examination on the part of the patients and because the condition is one about which they are not familiar. He who removes a tube and ovary because of a simple varicocele of the broad ligament fails in his trust and is not worthy of confidence.

This is the age of conservatism and it is the surgeon's duty to save organs not to destroy them. I trust the time will come when this condition will be treated in a conservative manner by all operators. Every surgeon should follow the golden rule, and when this is done a normal appendage will not be removed to cure a simple varicocele of the broad ligament when a ligation of the veins will procure the same result.

1429 SPRUCE STREET.

NOTE ON RHUS TOXICODENDRON.

(From the Bacteriological Laboratory, Johns Hopkins University.)

By WILLIAM W. FORD, M. D.,

Baltimore.

Several references to the active principle of *Rhus toxicodendron* have appeared recently in the literature, the work of Pfaff being especially emphasized. While the investigation by Pfaff was the first one in which the active principle was definitely isolated, Syme has also contributed to our knowledge of this poisonous plant by showing that the substance obtained by Pfaff is a *poisonous glucoside*, a combination of rhamnose, gallic acid, and fisetin. The work of Syme was carried out under Acree's direction in Dr. Remsen's laboratory.

I have recently pointed out that the poison of poison ivy is contained in active condition in the fluid extract of *Rhus toxicodendron* or *Rhus venenata*. The subcutaneous injection of this extract, in both rabbits and guinea pigs is followed by intense inflammation at the point of inoculation with extensive induration and swelling. The necrotic tissue eventually sloughs, leaving a deep ulcer, which slowly heals. At the same time a severe nephritis develops, the urine being loaded with albumin, and from this complication the animals die. The changes induced by the fresh fluid extract are similar to those found by Pfaff in his inoculated rabbits and there can be no doubt that it contains the active principle of the vine.

Both rabbits and guinea pigs can be actively and passively immunized to the drug, the serum from an immune animal protecting other animals from the effects of the inoculations. Dr. Hitchins has recently immunized a horse for me with this poisonous substance and the serum has now been tried in a few cases of severe ivy poisoning. While the cases are too few in number to lead to any decided opinion as to the curative value of the serum, the results of treatment thus far are very encouraging, both as far as the local and the constitutional symptoms are concerned. It is hoped that a more extensive trial of the serum can be made this summer.

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Syme. Some Constituents of the Poison Ivy Plant. *Johns Hopkins Thesis*, 1906.

Ford. Antibodies to Glucosides, with Especial Reference to *Rhus Toxicodendron*. *Journal of Infectious Diseases*, iv, p. 1, No. 4, October, 1907.

1134 CATHEDRAL AVENUE.

Baths of Tiberias.—According to the *Monthly Consular and Trade Reports*, March, 1909, there is good opportunity for development, under American or European management, of a health resort near the hot springs of Tiberias in Palestine, which may rival Carlsbad. These springs have been noted for their healing properties since Roman times. The temperature is about 143° F., and the waters contain sulphur, magnesium chloride, and iron. Baths have been provided by the Turkish government, but the accommodations are inferior. In Galilee the climate is delightful in the spring, and the season lasts from February to May.—Through the *Journal of the American Medical Association*.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXV/III.—How do you treat epistaxis? (Closed July 15, 1909.)

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Answers due not later than August 16, 1909.)

XC.—How do you treat typhoid fever? (Answers due not later than September 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVII has been awarded to Dr. Beverley R. Tucker, of Richmond, Va., whose article appears below.

PRIZE QUESTION LXXXVII.

THE TREATMENT OF SUPRAORBITAL NEURALGIA.

By BEVERLEY R. TUCKER, M. D.,
Richmond, Va.

The condition known as supraorbital neuralgia is due to an irritation or inflammation of the ophthalmic branch of the trigeminal nerve. This branch of the fifth nerve passes through the sphenoidal fissure and supplies sensation to the anteriolateral half of the forehead as high as the vertex, the anteriolateral half of the skin of the nose, the upper lid, the conjunctiva, the eyeball, and the mucous membrane of the upper part of the nasal cavity and lining of the frontal sinus. Pain may be felt in part or the whole of this distribution, or it may occur in conjunction with other sensory branches of the fifth nerve, and is then known as trifacial neuralgia.

Supraorbital pain may be referred as when experienced after eating ice cream and other cold substances, or from eye strain. It may be due to an exostosis at the margin of the sphenoidal fissure, or to a congestion at this opening, or to extension from meningitis in this location, or to increased intracranial pressure of which the writer knows an instance. We must not forget that pain in this region may be due to frontal sinusitis. It is important to exclude these conditions, as the pain generally known as supraorbital neuralgia is not included among them.

Having thus cleared the field we may say that *supraorbital neuralgia* is a condition having as a cause some underlying disturbance of metabolism or some definite toxic or germ irritation to account for the pain. Among these causes rheumatism, malaria, anemia, diabetes, syphilis, arteriosclerosis, nephritis, and gastrointestinal infection play the most important roles. For inciting causes to an attack, we may have exposure to cold, draughts, straining the eyes,

indiscreet eating, close atmosphere, nervous excitement, and trauma. It follows then that to successfully and scientifically combat the pain, we must ascertain and correct the underlying cause. This requires time and patience, for gastric, fecal, blood, and urine analyses are often necessary. A careful history should be taken with especial reference to rheumatism, malaria, syphilis, and other conditions liable to cause toxic disturbance. The occupation may be important, for occasionally metallic poisons have causative relations.

The pain of supraorbital neuralgia may be paroxysmal, or practically constant with acute exacerbations. Having carefully diagnosed the underlying cause of the pain we proceed then only to treat the case with real assurance of success.

Treatment may be divided into four heads:—

First.—*General management of the case.* This should include the correction of any error of refraction. The patient should be cautioned to avoid draughts, getting wet, and improper eating. It is well at first to clear the intestinal tract with calomel or castor oil and to keep the patient on a simple diet while the case is being studied.

Second.—*Medicinal treatment directed toward combating the causative conditions.* If from the history and necessary laboratory examinations we believe malaria to be the causative factor, arsenic in tonic doses and quinine to the limit of tolerance are our most effective remedies. Quinine acts better in solution and the hydrochloride and bisulphate are the best preparations. Malaria is so frequently the cause that in malarial districts brow ache is the name given supraorbital neuralgia. If *rheumatism* is deduced as the cause of the pain, sodium salicylate is our most useful remedy. That preparation made from the gaultheria plant known as sodium salicylate true is the most efficient. The writer usually gives it in combination with equal parts of sodium bicarbonate and administers ten grains of each, in separate capsules or in solution, every two hours until nausea is produced, then several doses are skipped and then the medication continued in decreasing doses. Equal parts of oil of gaultheria and olive oil applied to the painful area is also useful in these cases. If *anemia* is the cause, iron and arsenic should be given until the anemia is corrected. General massage is also useful in these cases. In those cases caused by *gastrointestinal toxemia*, castor oil, one ounce every day for eight or ten days, is indicated. Purging ceases after the first few doses. A strict buttermilk diet for the effect of the lactic acid bacilli in overcoming the colon bacilli is sometimes of assistance. Guaiac carbonate, grains five, three times daily, or sodium salicylate, grains ten, every four hours, also act as good gastrointestinal disinfectants.

These are the most common conditions causing supraorbital neuralgia. Other conditions, which if they act as causes, as syphilis, arteriosclerosis, nephritis, and diabetes, must be corrected as far as possible by appropriate treatment.

Third.—*Treatment of pain as a symptom.* For this purpose as adjuvants to treatment directed toward the correction of the cause, a hot salt bag, mustard plaster, or menthol may be applied over the painful side of the brow. Patients with supraorbi-

tal neuralgia are often the victims of the use of the coal tar depressants or morphine to excess. These should be prohibited because of their harmful effect. Tincture of cannabis indica, ten drops, three times daily, and increasing one drop a day until thirty drops are reached, or fluid extract of gelsemium, three drops, three times daily, and increasing to ten drops are sometimes useful.

Fourth.—*Operative treatment.* If medical treatment directed toward the correction of the cause is intelligently carried out, but few cases will need operation. However, if these means fail after a thorough trial, alcoholic injections should first be tried. If pain still persists, a peripheral operation should be performed, and if still unsuccessful, and in the writer's opinion not until then, should we resort to the serious Gasserian ganglion operation. Operative procedures substitute analgesia for pain and trophic disturbances frequently follow in their wake.

Dr. Samuel Robbinovitz, of Brooklyn, remarks:

The first thing requisite and essential (as in any case of neuralgia) is to ascertain whether it is due to local or general causes. The class of local causes may be stated to have reference to a cicatrix, neuroma, neoplasm, aneurysm, caries, or traumatism. Hence in this class of cases the treatment must unquestionably be directed toward removal of the underlying cause if such is possible. On the other hand, should the fault be a general one, the neuralgia may occur either as an immediate result of the systemic disease or it may be remote, as the result of anæmia.

Analgetics must many a time be resorted to. Of this class of drugs morphine stands at the head. It will yield almost immediate results if a hypodermic injection of it, one quarter of a grain combined with 1/125 grains of atropine, is made, and if injected directly over the track of the painful nerve. In addition to this, the following drugs may be made use of for the administration by mouth, especially in cases where the neuralgia may linger and there is danger of forming the morphine habit: Phenacetin, gr. v, repeated hourly till relieved. I tried in a vast number of cases the following combination and in the majority of them met with favorable results:

B Acetphenetidin,gr. iv;
Codeine sulphate,gr. ss;
Strychnine sulphate,gr. 1/60.
M. Fiat tablets capsulae, No. x.
Sig.: One capsule every 2 hours till relieved.

If the bowels are sluggish or acute constipation coexists I add hydrarg. chlor. mit., gr. ¼, to each capsule. Antipyrine, veratrum viride, or aconite may be made use of. Vesicants and counter irritants act well in many cases. The galvanic or faradic current may be of benefit. Linimentum chloroformi rubbed in locally at different intervals was followed by relief in many of my cases.

In cases where repeated attacks occur the general health must be given proper attention, bad habits prohibited, bowels perfectly regulated, and eyes examined and corrected for errors of refraction. Rest in bed and nonexposure to inclement weather are absolutely necessary adjuncts in treatment. In very obstinate cases that do not yield to remedial measures the nerve should be removed.

Correspondence.

LETTER FROM LONDON.

Medical Matters in India. —The Coley Treatment of Sarcoma. —The Electrolytic Detection of Tubercle Bacilli. —Sir Felix Semon.

LONDON, July 13, 1909

Your readers will have already learned from other sources of the terrible tragedy that took place at the Imperial Institute on the night of July 1st, when Sir William Curzon Wylie, a retired Indian official, and Dr. Cawas Lalca, of Shanghai, were murdered by Madar Lal Dhingra, a Hindu student at the University College. India and Indian reforms have been much in the foreground of politics recently, and this event will have focussed the attention of the world to the question. The reforms in India will affect the medical profession here considerably. The teeming population of India is very inadequately supplied with medical practitioners. The principal medical appointments are in the hands of the officers of the Indian Medical Service, another Royal Army Medical Corps. Natives are also admitted to the Indian Medical Service, but there are only a few of them in the service. Most of the native medical practitioners are ineligible for these posts, as they have only passed an examination which permits them to practise in India but not elsewhere. Their examination does not qualify them for being placed on the *British Medical Register*, and only registered men are allowed to compete for the Indian Medical Service. The pay and prospects of these medical officers are extremely good, and the service is therefore very popular. The natives have long considered it a grievance that they are ineligible for the *British Register* after passing a qualifying examination in India. There are thus in India two grades of medical practitioners, the officers of the Indian Medical Service and the Royal Army Medical Corps, who have all the principal appointments, and an inferior class, the native medical practitioners, who do the ordinary routine medical work of the country. This condition of things is to be altered. The government of India is now taking steps to promote the growth of an independent medical profession in India. There will be no further increase in the strength of the Indian Medical Service, and civil appointments in India will be increasingly given to native medical practitioners. There is no doubt that this reform will injuriously affect the status of the Indian Medical Service, and if the prospects of these officers are affected, the competition will be less keen and an inferior class of men will enter for the posts. In view of the ever increasing amount of work, medical, surgical, and sanitary that has to be done in India and admitting fully the great abilities of native practitioners, it remains to be seen whether this reform will make for medical efficiency in India.

A special meeting of the Royal Society of Medicine (Surgical Section) will be held this evening, when Dr. W. B. Coley, surgeon to the General Memorial Hospital, of New York, will give an account of his method of treating sarcoma by the injection of "Coley's fluid." During the last two or three years a good many successful results from the treatment of sarcoma by the injection of "Coley's fluid"

have been reported, and Dr. Coley's personal account of his work in this connection is being awaited with very great interest by English surgeons.

At a meeting of the Royal Society held on Thursday last Mr. Charles Russ, M. B. Lond., reported the result of experiments to ascertain whether bacteria suspended in an electrolyte were transmitted during electrolysis to either electrode, with a view to the recovery of pathogenic bacteria from a pathological fluid by such means. During electrolysis of certain salts in which bacteria were suspended, the organisms were found to migrate to one electrode, but in some instances there was no migration. To utilize this bacterial movement, an electrolyte in which tubercle bacilli had shown marked cathodic aggregation was added to tuberculous urine and the cathode arranged in the form of a bacterial trap. After electrolysis tubercle bacilli entered the trap, which was eventually withdrawn and the organisms recognized in a stained film prepared from its contents. A series of such urine was tested in this way, and in each case tubercle bacilli were found in the trap. In the final experiment a small number of tubercle bacilli (estimated at 500) were added to 100 c.c. of normal urine, and their detection attempted by several investigators by means of the centrifuge and current. By the centrifuge none were found, while the current recovered 128 bacilli. The results of this preliminary investigation were summarized as follows: Certain bacteria under the influence of a suitable current aggregate at one or other electrode. The aggregation varies with the nature of the electrolyte and is probably due to affinity between the products of electrolysis and the bacteria. It occurs with killed as well as with living bacteria. The aggregation by electrical currents affords a means of collection and examination. The difference in behavior of various bacteria are such as to suggest the possibility of utilizing the method for purposes of specific discrimination, but in this particular the data hitherto obtained are not sufficient to warrant definite statements.

Sir Felix Semon, the well known laryngologist, is just retiring from practice, and the occasion of his retirement was marked by a banquet held at the Hotel Metropole on Friday, July 2nd. There were present a large number of medical men. Mr. Butlin was the chairman, and in proposing the toast to the "Guest of the Evening" he said he had known Sir Felix all through his professional life in England. In the seventies of the last century the position of the specialties in medicine was very different from what it is now. Only two were at that time tolerated—obstetrics and diseases of the eye. In course of time, however, it became necessary that students should have instruction in the use of special instruments, such as the ophthalmoscope and laryngoscope and that special departments be provided in the hospitals for the purpose. Mr. Butlin gave some illustrations of the position of the specialist in early days. When he was a student at St. Bartholomew's Hospital the ear department was in charge of an assistant surgeon who took some interest in his medical education—meeting him in the hospital square one day, he said: "Butlin, would you like to learn all about diseases of the ear?" On receiving an af-

firmative answer he said: "Then come over to my ear department for three or four weeks and I'll teach you all that's known about them. The truth is, there are only two kinds of deafness. One is due to wax in the ear, and anybody can cure it; the other does not depend on wax, and nobody can do anything for it." Another example was his own appointment to the Department for Diseases of the Throat. Soon after he had become assistant surgeon to the hospital that department fell vacant. At the next meeting of the school committee it was their duty to recommend one of their number to the treasurer for the post. Mr. Savory was in the chair, and he asked first one, then another, whether he would take it. Each replied in the negative, so Mr. Savory said: "Well, then, Butlin must take it. He's the junior and he must do it." While matters were in this state Semon came to London with the intention of spending a few months in the study of English. He spent a large part of his time at the Hospital for Diseases of the Throat in Golden Square, and by and by he and Dr. Lefferts, of New York, who was in London at the same time, were appointed clinical assistants to Dr. Morell Mackenzie. It was suggested to Semon that he might stay in London and practise as a specialist. Accordingly he presented himself for examination at the Royal College of Physicians and obtained the diploma of M.R.C.P., and in the following year, 1877, he settled down to practice in London. In 1881 Semon became physician to the Department for Diseases of the Throat at St. Thomas's Hospital, and occupied the post for a period of fifteen years, gaining during that time a world wide reputation as a laryngologist.

Therapeutical Notes.

The Action of Casimiroa Edulis.—Chevalier (*La press médicale*, June 30, 1909) is of the opinion that the active principle of the fluid extract of casimiroa has an elective action on the brain as certain as that of alcohol or the essential oils. It causes a quick depression of the intellectual and sensorial functions, and a sleep more or less profound is induced. The perception of pain is therefore deadened. With somewhat large doses almost complete anæsthesia comes on, which persists until the grave symptoms of intoxication disappear. It invariably lowers the temperature and arrests the respiratory movements. The action of the extract of casimiroa on the circulation is shown in a diminution of the number and the energy of the cardiac movements. At the same time it lessens blood tension and produces an intense peripheral vasodilatation.

The Cure of Obesity.—Laissus (*Journal des praticiens*, May 1, 1909, and *Revue de thérapeutique*, July 1, 1909), after a study of two hundred cases of obesity, recommends in the first place a reduction in the amount of fats and carbohydrates ingested. To satisfy the hunger during the first few days of treatment the patient is permitted to eat fairly large quantities of fresh fruits and green vegetables; salads without oil and prepared with a light white wine with the addition of a small amount of

lemon juice are permitted, and to moderate the appetite he recommends the taking of three or four light meals a day, with a minimum of salt. The obese demand a large quantity of fluid in the form of drinks, but this should be regulated at meals. For one meal the most that should be allowed is one half pint of diluent containing no sugar. Fluids in the form of drinks are recommended to be taken one hour before and three hours after meals. Exercise, not too excessive, should be taken regularly under specific directions. Hot baths in running water and the hot douche followed by a cold jet is beneficial for fat people. Electric light baths should be prescribed with caution in the case of persons affected with heart trouble, arteriosclerosis, or for persons with a congestive disposition. Massage is useful for its effect in strengthening the muscular system; it should be prolonged for some time and the kneading process is to be preferred. Drugs are of little use, thyreoidine is dangerous; fat people of a lymphatic tendency are sometimes benefited by the administration of a few drops of tincture of iodine in milk.

The Treatment of Pruritus of the Vulvæ.—The following ointment is prescribed by Dalché, according to the *Journal de médecine de Paris* for June 26, 1909:

R	Menthol,	gr. viiss;
	Gualacol,	gr. ivss;
	Zinc oxide, .....	.5iiss;
M.	Petrolatum, .....	.5i.

The Treatment of Herpes Zoster.—Robin in a recent lecture (*La Clinique*, July 2, 1909) recommended the following treatment as one that gave the best results. Two principal therapeutic indications are to be followed, the treatment of the local lesion and of the pain. The following powder is applied freely to the surface affected:

R	Pulverized starch, .....	.5ii;
	Zinc oxide, .....	.5ss;
M.	Finely pulverized camphor, .....	.5ss.

In cases where the vesicles show a tendency to ulceration the foregoing powder is replaced by one containing zinc peroxide, as follows:

R	Pulverized starch, .....	.5ii;
	Zinc peroxide, .....	.5ss;
M.	Finely pulverized camphor, .....	.5ss.

For the neuralgic pains which persist during the eruption and for a short time after it has terminated, internal medicine is best given. One pill of the following composition is given twice daily:

R	Extract of belladonna;	
	Extract of hyoscyamus;	
	Extract of stramonium, of each,	gr. 1/6.

M. et Sig.: One pill is to be taken on rising in the morning, another at 9 o'clock in the evening, and another at midnight.

If this fails to allay the pain the following powders are prescribed:

R	Sodium bromide,	
	Ammonium bromide, of each,	gr. xv.

M. et Sig.: One to be taken in a little water between taking the pills in the evening, or at 10 o'clock p. m.

The pains which persist after the disappearance of the herpes and which are sometimes very tena-

cious are treated by hypodermic injections of a twenty-five per cent. solution of sodium glycerophosphate, fifteen minims of the solution being injected once a day in the site of the pain. The pain disappears as a rule after the fourth day. If it does not cease, the treatment is continued for a week, and in the event of no relief being experienced, the use of the glycerophosphate is discontinued and fifteen minims of a thirty per cent. solution of antipyrine is substituted.

While the relief of pain is being sought by the use of sodium glycerophosphate or antipyrine, it is recommended to give the patient some palliative medication, and Robin recommends the following syrup as an effective remedy in all forms of neuralgia.

R	Pyramidon (dimethylamidoantipyrine),	gr. xlv;
	Ammonium bromide,	
	Ammonium iodide,	ãã gr. lxxv;
	Cocaine hydrochloride,	
	Sparteine sulphate,	ãã gr. iss;
	Caffeine valerate,	gr. ¾;
	Syrup of bitter orange peel, .....	.3v.

M. et Sig.: One tablespoonful twice daily.

The Treatment of Gastric Troubles of Genital Origin.—Dalché remarks (*Gazette de gynécologie*; and *Le Nord médical*, June 15, 1909) that at the critical age of puberty when a young girl is easily fatigued and is disturbed beyond her normal resistance; when the intellectual system is being exercised equally with the physical system, the first bad result observed is a diminution of the appetite. In the absence of chlorosis, this loss of appetite may be combated easily by the administration of some of the ordinary bitters, such as tincture of calumba, tincture of ipecac or tincture of gentian, with a few drops of nux vomica. But he prefers to prescribe condurango in the following form:

R	White condurango bark, .....	.5ss;
	Water, .....	.5viii.

Mix and make a decoction, boiling down until five ounces remain; filter and add

Syrup of gentian,

M. et Sig.: One tablespoonful to be taken with the principal meal.

At other times a slight anorexia may be removed by giving one of the lightly charged alkaline waters

Calcium Hypophosphite in the Treatment of Epilepsy.—M. Ciccarelli (*Il Policlinico*, 5 and 6, 1909; and *La Clinique*, July 9, 1909), after noting the good results obtained by several Italian physicians in the treatment of epilepsy with lime salts, conceived the idea of employing calcium hypophosphite, the phosphorus contained in it being supposed to have a good effect as a reconstituent for enfeebled epileptic subjects. Calcium hypophosphite was given in doses of from ten to fifteen grains in cachets three times daily, and excellent results were observed with twenty-five patients. The author considers the salts of calcium to be preferable to the alkali bromides, as bromidism is avoided, and the general condition of the patient is improved and a more cheerful mental feeling induced. The bromide treatment may be continued at intervals, alternating it with the calcium hypophosphite, bromide being given for a week or ten days and the calcium salt for a fortnight.

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THE PUBLIC HEALTH AND MARINE HOS- PITAL SERVICE.

Only three months ago attention was drawn in these columns to the loss which the Public Health and Marine Hospital Service had sustained by the resignation of Dr. J. H. Kastle, chief of the Division of Chemistry in the Hygienic Laboratory. Dr. Kastle resigned to accept a university professorship, and now Dr. M. J. Rosenau, director of the Hygienic Laboratory, has been appointed professor of hygiene and preventive medicine in the new department established at the Harvard Medical School. Dr. Rosenau brings to the work for which he has been chosen twenty years' experience of so varied a nature that it would have been impossible for one man to gain it in any other capacity than that of an officer in the Public Health and Marine Hospital Service. As a quarantine officer in Cuba and in the United States, he has dealt with the infectious diseases at first hand; as the representative of his service in infected European ports, he has had the international relations of public health problems presented to him in an unforgettable way; and, as director of the Hygienic Laboratory for eight years, he has been bringing to bear upon concrete problems of preventive medicine the newest facts gained in experimental research. The qualifications which make him so valuable an acquisition to Harvard mean, however, an equal loss to the service he is

leaving, and it is with this aspect that we are concerned at present.

The loss of these two men in so short a time lends emphasis to the prediction we made of the effects to be expected from the failure of Congress to increase the attractiveness of the Public Health and Marine Hospital Service, and thus enable it to hold its own with the universities in competition for men of high efficiency. It is a matter of public concern that an organization which has demonstrated its great usefulness should have its effectiveness so seriously threatened. The men who have been carefully selected and specially prepared by a varied and exacting experience to carry on the government's public health activities must be retained, and young men of the best type must be attracted, if the service is to succeed in the widening field of usefulness before it. We are informed that only fourteen candidates (only four of whom were found qualified) presented themselves before a recent examining board, while it is reported that over two hundred applications were received for the examination recently held for admission to the Army Medical Corps. Such conditions did not exist before the legislation increasing the pay and allowances of the army and navy medical services, and the effects of continued delay in making similar provision for the Public Health and Marine Hospital Service cannot fail to be disastrous. An illustration which may serve to show the inequality existing at present is the fact that experienced officers of the service, having brought the fight against plague in San Francisco to a successful termination and having shown in previous epidemics their ability to solve difficult administrative questions, receive the same pay and allowances as newly appointed assistant surgeons attending the Naval Medical School.

A bill was passed by the Senate last year placing the pay and allowances of officers of the Public Health and Marine Hospital Service on the same basis again as those of the medical officers of the army and navy, but a similar bill was not allowed to come to a vote in the House. It is not believed that members of Congress intended to discriminate against the former service, but, if their action was due to ignorance of the part played by that service in the public health activities of the country or of the effects upon its efficiency of their failure to make the proper provision, it is surely the duty of the medical profession to enlighten them. The deficit in the treasury is given as one of the reasons for deferring still longer the necessary legislation, but when the wider interests involved are considered it seems doubtful if this is sufficient reason for such delay as may result in impairment of the efficiency of the service which it will be difficult or impossi-

ble to remedy later. When a man is in temporary financial straits—and few would care to say that that was the present condition of the United States Treasury—he does not dispense with the services of a family physician who has cared for him through dangerous illnesses and in whom he has confidence, and look about for a cheaper, if unskilled, doctor. It is difficult to see why the country should be compelled to resort to such a course.

CAISSON DISEASE.

We recommend all our readers to study Dr. Ryan's article, entitled Compressed Air Disease from a Clinical Aspect, published in this issue of the journal. The title employed by Dr. Ryan is to be preferred, though "caisson disease" has become so established in professional usage that probably it will not readily be given up. Tunnel work is now being carried on so extensively that many a practitioner of medicine may find himself called upon to act as the medical adviser of a construction company, and physicians in general ought to make themselves familiar with the fundamentals of our present knowledge of the effects of working in compressed air.

New York appears to be at present the centre of tunnel work—New York and its approaches, we mean, of course—and the activity of the last few years has enabled a few of our physicians to study the medical problems connected with it to exceptionally good advantage. Among these medical men there is none, so far as we are aware, whose experience in caisson disease exceeds or equals that of Dr. Ryan. In addition, he takes such a practical view of the afflictions of the "sand hog" that what he has to say on the subject should appeal directly to every physician.

THE ACTION OF ENZYMES.

In recent years there has been a growing realization that a prominent factor in biological chemistry is to be found in the action of ferments. The enzymes, whether vegetable or animal, are, like the catalyzers of inorganic chemistry, capable of bringing about chemical reactions when they are present in certain proportion in other substances, without themselves forming any part of the final products or contributing to these products. An interesting study of Kobert's on the action of the enzymes, with particular reference to the alkaloids, glucosides, and esters, is reviewed in a recent number of the *Pharmazeutische Zeitung* (No. 45, 1909). According to Kobert, most of the enzymes exert a hydrolytic action upon albumins, fats, glucosides, etc.

These reactions, however, are reversible, as, for instance, in the synthesis of certain glucosides from their constituents by means of enzymes. Amygdalin has been constructed by the action of maltase. Glucoside splitting enzymes are usually found in plants containing none of the corresponding glucoside. The presence of alkaloid-destroying ferments is inferred in certain plants, such as the poppy, from the disappearance of the alkaloid, in this instance the morphine, as the poppy ripens.

The animal enzymes are divided into three groups, the exenzymes, the endenzymes, and the autolysins. The exenzymes are formed for the most part in the glands of the digestive tract, and are excreted through the ducts of the glands, to do their work outside of the body. The autolysins give rise to the extracellular chemical changes which occur within the body, with the exception of those which may result from the presence of foreign organisms. These include post mortem changes and the disintegration of cells after injury or the action of toxins. Finally, the endenzymes are found in all living cells, animal and vegetable. The endenzymes do not act upon the cells themselves, but work within them. To study their action, it is necessary to work with a suspension of the living cells in some suitable medium, such as physiological salt solution.

The question of endozymotic reactions upon alkaloids, glucosides, and esters is of great pharmacological interest. Kobert experimented at length with a preparation of placenta cells, the most easily obtained living human tissue. He was able with this placenta preparation to split up, in the course of twenty-four hours, large quantities of salol, thus suggesting a similarity of action between placental and liver or kidney tissue. The enzymes of the placenta were shown to have considerable glucoside-splitting power, but to possess little or no influence on the alkaloids.

FLIES AND THE PUBLIC HEALTH

Doubtless there are occasions when, to enlighten unimpressible people, it is necessary to use very striking figures and colors. The circular on the dangers of the house fly, however, issued a short time since by the Florida Board of Health about reaches the limit of the permissible in art. The required information is set forth with a roughly drawn border representing swarms of flies of all sizes—there is only one size of house fly, by the way—led by a giant indeed, very likely Beelzebub himself, circulating impartially about a consumptive's spittoon, a garbage can, a dung hill, a dead dog, a country privy, a typhoid patient, a dinner table, a cream jug, a layer cake, a roast turkey, two peaches, and an old fash-

ioned baby's bottle. We feel convinced that people who require such violent object lessons are quite likely to believe that the paper teaches that flies will steal cream and cake and throw them into spittoons. Even were the lesson unequivocally conveyed, we must say that the circular, we fear, will fail of its object, because the nausea excited by the sight of it may cause it to be shunned.

PENNSYLVANIA'S UNDERGRADUATE MEDICAL ASSOCIATION.

A year ago (*New York Medical Journal*, July 18, 1908) we called attention to the proceedings of the first meeting of the Undergraduate Medical Association of the University of Pennsylvania, which was published in the *University of Pennsylvania Medical Bulletin*. The June number of that publication this year contains the proceedings of the second meeting of this association. The papers read by the members, fourth year students of the Medical Department, were devoted to such subjects, among others, as The Experimental Production of Acute Toxic Ulcer of the Stomach, Transplantation of the Ureters into the Gastrointestinal Tract, and The Occurrence of Acetonuria Following Ether Anæsthesia.

CLAY IN THE TREATMENT OF TROPICAL DYSENTERY.

The *Semaine médicale* for July 14th reminds its readers that four years ago it published an article by Dr. J. Stumpf recommending clay in the treatment of acute and chronic intestinal infections, notably cholera. The *Semaine* adds that two years later its columns contained an account of Dr. Görner's success with the remedy in cases of tuberculous diarrhoea. Moreover, our contemporary adds, a Swiss physician, Dr. Frei, has on many occasions convinced himself of the prompt and efficient action exerted by clay in cases of diarrhoea, both in adults and in children, and has been particularly struck with the success which he met with in a grave case of tropical dysentery by means of the treatment.

The patient was a woman, thirty-two years old, who contracted the dysentery six months before she came under his care, during a sojourn in Egypt. The disease proved rebellious to all the dietetic and medicinal means usually resorted to in such cases. The evacuations, which were never fewer than twelve in twenty-four hours, were extremely fetid and contained a great deal of blood and mucus. They were accompanied, moreover, by sharp pains in the lower part of the abdomen, and the patient

was excessively emaciated, having lost twenty-eight pounds in weight.

Dr. Frei's treatment consisted in the administration of clay thinned by rubbing it up with four times its weight of water. For the first few days, the daily amount of clay given was rather more than an ounce and a half, all in one dose. Then it was reduced successively to ten drachms, an ounce, and five drachms, administered in two doses in the course of the day. Under the influence of this treatment the stools soon became less frequent and began to resume their natural character. At the same time the pain ceased, the patient's general condition improved, and within a month she had gained more than twenty pounds in weight. When Dr. Frei last heard from her, five months later, her recovery had been maintained and she was eating all sorts of food without the slightest inconvenience.

THE PREVENTION OF DIABETIC COMA.

The *Journal de médecine de Paris* presents in its issue for July 17th an abstract of an article on this subject by Professor Albert Robin, published in the *Bulletin général de thérapeutique*. When, says Robin, a diabetic is losing flesh and appetite, finds his muscular strength enfeebled, has imperfect digestion, shows cerebral or nervous excitement or depression and the odor of acetone in the breath, and has trouble with his breathing, no matter how slight, with Gerhardt's reaction of the urine, look upon him as on the verge of diabetic coma and make haste to adopt preventive measures.

Stop the antidiabetic diet immediately and entirely; do not bother about the glycosuria; order an absolute diet of skimmed milk, to avoid the action of fatty bodies. This milk diet is for the purpose of nourishing the patient generously, and the quantity of milk should exceed three quarts a day. It serves also to increase slightly the alkalinity of the bodily fluids and cause copious diuresis. Put the patient to bed, and maintain as complete physical and mental repose as possible. Take good care of the stomach, guarding especially against gastric fermentation. For the latter purpose use ammonium fluoride or the double iodide of bismuth and cinchonidine. Give enough of some alkali to neutralize the acid in the stomach.

If magnesia is administered, its laxative action should be moderated by the addition of bismuth subnitrate. Such laxative action is necessary because it is eliminative, but it should be kept within bounds. (Open the emunctories, urinary, intestinal, pulmonary, and cutaneous. If magnesia does not act sufficiently as a cathartic, use Rochelle salt in addition.

The pulmonary exhalation will be favored by copious inhalations of oxygen. The skin may be stimulated by energetic frictions with a liniment containing tincture of cinchona, spirit of camphor, oil of cloves, and tincture of nux vomica. Sustain the nervous activity by daily hypodermic injections of pure sodium glycerophosphate, a twenty-five per cent. solution. If the circulation flags, the pulse becoming soft and compressible without acceleration, it is best to resort to caffeine by the mouth or subcutaneously. If the pulse is very much accelerated and grows irregular, digitalin should be employed in cardiotonic doses.

Obituary.

CLAIR S. PARKHILL, M. D.,
of Hornell, N. Y.

Dr. Parkhill died suddenly on Tuesday, July 20th. In the midst of his morning calls on patients he was seized with cardiac symptoms. He made his way to his carriage and directed the coachman to drive home rapidly, but he expired before the house was reached. He was in his sixty-seventh year. He was a graduate of the Albany Medical College, of the class of 1866. After practising for a few years in his native town, Howard, N. Y., he moved to Hornell (then Hornellsville) and entered upon a busy and most honorable career as a physician. He became one of the surgeons of St. James's Mercy Hospital and at various times occupied many positions of trust and honor. His consulting practice took him long distances from home, and he was therefore widely known. He was deservedly held in high esteem by those who knew him.

News Items.

The Board of Medical Examiners of the State of Washington announces that 76 of the 113 candidates for medical licenses have passed the examination entitling them to practice medicine in the State. In addition to these 181 osteopaths have passed their examinations and will receive licenses.

The Directorship of the State Pathological Institute.—Dr. August Hoch, of the Bloomingdale Hospital, White Plains, has been appointed successor to Dr. Adolph Meyer as director of the State Pathological Institute at Ward's Island. Dr. Meyer resigned to become head of the new Psychiatric Clinic to be established at the Johns Hopkins Hospital.

Richmond, Va., Academy of Medicine and Surgery.—At a regular meeting of the academy, held on Tuesday, July 27th, the following papers were read: Baldness—Its Causes and Treatment, by Dr. F. H. Beadles; Personal Experiences in the Diagnosis and Treatment of Gastric Neuroses, by Dr. J. A. Hodges; Treatment of Leg Ulcers, by Dr. M. E. Nuckols.

The Northern Tristate Medical Association, of Indiana, Michigan, and Ohio, held its thirty-sixth annual meeting in Toledo, Ohio, on Tuesday, July 13th. The following officers were elected: Dr. C. B. G. De Nancrede, of Ann Arbor, Mich., president; Dr. James A. Duncan, of Toledo, Ohio, vice-president; Dr. George W. Spohn, of Elkhart, Ind., secretary; and Dr. J. A. Weitz, of Montpelier, Ohio, treasurer.

The Pennsylvania State Board of Medical Examiners has announced that 334 candidates out of 354 applicants have passed examinations entitling them to practice medicine in Pennsylvania. The highest average, 94.3 per cent., was made by Dr. George Herman Hungerford, of Philadelphia, a graduate of the Medical Department of the University of Pennsylvania.

The Pennsylvania State Hospital for the Insane at Fairview, Wayne County, was formally begun on Saturday, July 24th, when the cornerstone was laid. Dr. Ferris, president of the Board of Charities and Corrections of New York, delivered the address. This hospital will materially add to the opportunities for the care of the insane by the State of Pennsylvania. The State at present has hospitals at Norristown, Harrisburg, Danville, Warren, and Dixmont.

The Pennsylvania State Board for the Examination and Registration of Nurses organized on Thursday, July 22d. Dr. William S. Higbee, of Philadelphia, was elected president, Miss Roberta M. West, of Erie, was elected vice-president, and Dr. Albert E. Blackburn, of Philadelphia, was elected secretary-treasurer. Applicants for registration will be furnished with official blanks upon communicating with Dr. Blackburn, 3813 Powelton Avenue, Philadelphia.

Gifts and Bequests to Charity.—Mrs. Henrietta F. Loeb has given \$1,500 to the United Hebrew Charities, of Philadelphia, and \$1,000 to the Jewish Foster Home and Orphan Asylum, of Philadelphia, in memory of her husband, Max F. Loeb.

An endowment fund of \$100,000 for Mercer Hospital, Trenton, N. J., is included in the will of Mr. Hampton W. Cook, of New York, which has just been drawn. It will become available on the death of Mr. Cook.

Mrs. Russell Sage has contributed \$500 to the St. Joseph's Hospital, at Far Rockaway, N. Y.

The Lehigh Valley Medical Association held its twenty-ninth annual summer meeting at Delaware Water Gap, Pa., on July 22d. Dr. A. L. Kutz, of Easton, Pa., the retiring president, delivered an address on Some Thoughts regarding Disease, and the annual address was delivered by Dr. W. L. Rodman, professor of surgery at the Medicochirurgical College, Philadelphia. Officers for the ensuing year were elected as follows: President, Dr. O. H. Sproul, of Flemington, N. J.; vice-presidents, Dr. J. M. Wainwright, of Scranton, Dr. W. E. Gregory, of Stroudsburg, and Dr. E. Herbst, of Reading; secretary, Dr. C. J. Kistler, of Lehighton; treasurer, Dr. A. Seem, of Bangor.

The Medical Society of the Missouri Valley.—The annual meeting of this society will be held in Council Bluffs, Iowa, on Thursday and Friday, September 9th and 10th. The scientific programme is already assuming attractive proportions, and it is evident that those who attend will enjoy another successful meeting. On Thursday evening three interesting addresses will be delivered, as follows: The presidential address, by Dr. C. B. Hardin, of Kansas City; the address in medicine by Dr. Alfred C. Croftan, of Chicago; an address by Dr. John E. Summers, of Omaha, Neb., on Cancer a Constitutional Disease; Its Rational Treatment. The local arrangements are in the hands of a committee appointed by the local county society, with Dr. V. L. Treyner as chairman. Further information and complete programmes may be obtained by applying to Dr. Charles Wood Fassett, St. Joseph, Mo.

Personal.—Dr. Watson S. Rankin has been appointed secretary and treasurer of the North Carolina State Board of Health and registrar of vital statistics, to succeed Dr. Richard H. Lewis, who resigned recently. Dr. Lewis occupied the position for nearly seventeen years.

Dr. J. W. Markoe, of New York, sailed for Europe on July 24th.

Dr. Herbert O. Collins has been elected superintendent of the new City Hospital in Minneapolis.

Dr. G. W. Miles, of Oneida, N. Y., has been appointed a lecturer in the State Department of Health.

Dr. J. Helen Dobson has been appointed medical examiner in the department of physical training for women in the University of Wisconsin.

Dr. Charles K. Mills, of Philadelphia, delivered an address before the Cumberland County, Pa., Medical Society, at a meeting held at Mount Holly Inn on July 13th.

Bellevue Officials Under Investigation.—Mr. Michael J. Rickard, assistant superintendent of Bellevue and Allied Hospitals for many years past, has been suspended; Mr. Frank Eckstein, auditor and contract clerk, has been dismissed; and Mr. George A. White, a clerical assistant, has been reprimanded by the board of trustees, as a result of an investigation of the accounts of that institution. This investigation showed that certain articles, purchased and paid for by the institution had been charged up on its accounts as something else, pigs knuckles appearing as Florida oranges, choice butter being charged as Malaga grapes and Rochefort cheese as bananas. It was stated that the bills as rendered by the dealers were changed in the assistant superintendent's office at his direction. Mr. Rickard has been employed in the institution for thirty-five years and at times has acted as superintendent. Mr. Eckstein has been in the department for seventeen years, and at Bellevue for seven. The investigation is still in progress, and it is said that startling developments may be looked for.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 24, 1909:

	July 17-24		July 24-31	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	480	168	537	155
Diphtheria	250	27	195	24
Measles	591	13	443	23
Scarlet fever	197	8	58	6
Smallpox .....	..	..	..	..
Varicella	13	..	16	..
Typhoid fever	60	8	71	8
Whooping cough	47	12	49	10
Cerebrospinal meningitis	7	8	3	4
Total	1,465	234	1,255	230

International Medical Congress.—Dr. Emil Grosz, secretary general of the congress, suggests that the American party should take time to visit the statue of George Washington in one of Budapest's suburban parks, which was erected by the Hungarians who live in the United States, in honor of their adopted country. The American Committee once more announces that arrangements have been made for ample hotel accommodations in Budapest, and all details of the trip have been carefully arranged. A competent guide will be in constant attendance. The cost of the trip, including a week's board in Budapest, meals en route, railroad fares, tips, steamship, first class both ways, carriages for sightseeing, etc., will be \$395. The party will sail from New York on August 12th. Full information and itinerary may be obtained by addressing Dr. Charles Wood Fassett, in care of Hotel Ostend, Atlantic City, N. J., until August 10th, and from that time until the party sails, at the New Grand Hotel, New York. This hotel has been selected as the New York headquarters, and programmes of the congress may be obtained there.

Metropolitan Life Insurance Company Plans Tuberculosis Sanatorium for Policy Holders.—Application has been made to the State Insurance Department by the Metropolitan Life Insurance Company for permission to purchase land and establish on it a sanatorium for the treatment of tuberculous policy holders of the company. They already have an option on a large tract of land, and if the State Department grants permission, this land will be purchased and the work begun immediately. It is said that eighteen per cent. of the death claims paid by the company are on lives ended by tuberculosis; in one year almost one half of the deaths between the ages of twenty and twenty-four years were due to tuberculosis. The company believes that by taking proper care of its consumptive policy holders the death rate will be materially lowered, which means more income to the company, to say nothing of the increased length of life brought about. This is the first time in this country that a private insurance corporation has taken such a step, though in Germany sanatoria of this nature have been successfully operated. In addition to planning the sanatorium, the company has started a vigorous educational campaign, through which it hopes to teach policy holders how to take care of their health. Pamphlets dealing with the causes, treatment, and prevention of tuberculosis are being distributed broadcast among the families represented by the policy holders of the company, and the organization of a nursing service is being considered, also, if feasible, a staff of physicians who will visit in their homes not only the tuberculous, but all bedridden policy holders of the company.

Hospital Nurse Retired on a Pension.—Miss Katharine B. Holden, head nurse in the Willard Parker Hospital, New York, was retired on July 22d on a pension by the Department of Health, after twenty-nine years of steady service under the board, and the doctors and nurses of the hospital gave a reception and dance in her honor on the evening of July 22d. It is said that Miss Holden has worked throughout every epidemic that has occurred in this city since she entered the service, and many stories are told of her wonderful courage and endurance. She is the first woman nurse to be retired on a pension by the Department of Health.

The New Coney Island Hospital, which is situated on Ocean Parkway, Brooklyn, will, it is said, be one of the best equipped hospitals in the borough. It is a branch of the Kings County Hospital, and will be governed by the rules and regulations which govern that institution. Although the new building will not be ready to receive patients until fall, appointments have already been made for the medical staff, and the list contains the names of many of the most prominent physicians and surgeons in Brooklyn. The consultants will be: Dr. W. F. Campbell and Dr. A. T. Bristow, in the department of surgery; Dr. Glentworth R. Butler and Dr. J. M. Van Cott, in the department of medicine; Dr. John O. Polak and Dr. S. J. McNamara, in the department of gynecology; Dr. J. C. Hancock, in the department of ophthalmology; and Dr. Dudley Roberts, in the department of gastroenterology.

A New Organization of Women Physicians.—At the Atlantic City meeting of the American Medical Association it was suggested that the women members of the association form an organization to carry on the work of educating the public in the prevention of disease. A Central Committee was appointed to carry out the plan, with Dr. Bertha L. Glaeser, of Cincinnati, as temporary chairman. Members of this committee from all over the United States met last week at the home of Dr. Rosalie Slaughter Morton, of New York, to discuss plans for carrying on the work. An executive committee was appointed with Dr. Morton as chairman, and Dr. Sarah R. Adamson Dolley, of Rochester, N. Y., the oldest practising woman physician in America, as honorary chairman. The other members of the executive committee are: Dr. Evelyn Carrigue, of New York, secretary; Dr. Emma C. Hackett, of New York, treasurer; Dr. Lillian K. South, of Bowling Green, Ky.; Dr. Laura Liebhart, of Denver, Col.; Dr. Margaret Holliday, of Austin, Tex.; Dr. Sarah Craig Buckley, of Chicago; Dr. Rose Talbott Bullard, of Los Angeles, Cal.; and Dr. Anna Lee Hamilton, of Boston, Mass. Every woman member of the American Medical Association is a member of the new organization, which is called the Public Health Education Committee. Secretaries have been appointed for every State and territory in the Union.

Conference on the Prevention of Infant Mortality.—Announcement is made that a conference will be held in New Haven, Conn., on November 11th and 12th of this year, under the auspices of the American Academy of Medicine, for the purpose of discussing the question of how to reduce the death rate among infants. The discussion of the subject will be divided into four sections—medical, educational, institutional, and philanthropic. The officers of the sections are as follows: Medical, Dr. J. H. Mason Knox, Jr., of the Johns Hopkins Medical School, Baltimore, chairman; Dr. Richard A. Urquhart, Baltimore, secretary; philanthropic, Mr. Edward T. Devine, editor of the *Survey*, chairman; Miss Lilian Brandt, secretary; institutional, Mr. Homer Folks, secretary of the New York State Charities Aid Association, chairman; Miss Mary Vida Clark, secretary; educational, Prof. C. E. A. Winslow, of the laboratory of sanitary research, Massachusetts Institute of Technology, Boston, chairman, and Dr. Henry I. Bowditch, Boston, secretary. The topics discussed will include such as congenital debility, improper care and environment, communicable diseases, unclean or unsuitable food, and the dangers which arise from unhealthful surroundings, special attention being given to the life of the child in a large city. Dr. Helen C. Putnam, of New Haven, is chairman of the executive committee, other members of the committee being: Dr. George Blumer, professor of the theory and practice of medicine in the Yale Medical School; Dr. F. H. Gerrish, of Portland, Me.; Dr. D. C. Hawley, of Burlington, Vt.; Dr. J. Madison Taylor, of Philadelphia; Dr. James H. McBride, of Pasadena, Cal.; and Dr. Charles McIntire, of Easton, Pa.

Mortality Statistics of New Orleans.—The Official Report of the Board of Health of the City of New Orleans shows that during the month of June, 1909, the total number of deaths from all causes was 536; 327 white and 209 colored. The death rate in a thousand of population for the month was 14.81 for the white, 26.88 for the colored, and 17.76 for the total white and colored population. The total infant mortality was 146, 91 white and 55 colored; 119 under one year of age, 74 white and 45 colored; 19 between one and two years of age, 11 white and 8 colored; and 8 between two and five years of age, 6 white and 2 colored.

The Mortality of Chicago.—During the week ending July 17, 1909, the total deaths from all causes numbered 482, as compared with 479 for the previous week and 526 for the corresponding period in 1908. The annual death rate in a thousand population was 11.30. The total infant mortality was 121; 73 under one year of age and 48 between one and five years of age. The deaths from important causes were as follows: Diphtheria, 9; scarlet fever, 3; measles, 2; whooping cough, 7; typhoid fever, 1; diarrheal diseases, under two years of age, 37; diarrheal diseases, over two years of age, 8; pneumonia, 30; pulmonary tuberculosis, 62; other forms of tuberculosis, 13; cancer, 17; nervous diseases, 15; heart diseases, 65; apoplexy, 15; Bright's disease, 43; violence, 43; 6 from suicide, 4 from sunstroke, and 33 from accidents.

Health Conditions in North Carolina.—The Bulletin of the North Carolina Board of Health for May, 1909, showed that reports were received from 81 of the 96 counties which have superintendents of health. The total number of deaths reported for the month was 356; 175 white and 182 colored. The annual death rate in a thousand population was 13.3 for the white population, 23.7 for the colored, and 16.9 for the total white and colored. Of the total number of deaths 22 were due to pneumonia, 50 to tuberculosis, 27 to heart diseases, 58 to diarrheal diseases. There were two suicides during the month. The total infant mortality was 102; 47 white and 55 colored. There were 53 stillbirths. The report of the director of the laboratory of hygiene showed that 2,392 specimens of various kinds were examined, and 83 patients received Pasteur treatment.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending July 17, 1909, there were 1,397 deaths from all causes reported to the department. During the corresponding week in 1908, the total deaths numbered 1,567. The annual death rate in a thousand population was 15.97 in the whole city, and in each of the five boroughs as follows: Manhattan, 14.42; the Bronx, 17.69; Brooklyn, 16.64; Queens, 21.09; Richmond, 25.42. There were 155 stillbirths. The total infant mortality was 558; 399 under one year of age, 90 between one and two years of age, and 69 between two and five years of age. The deaths from important causes were as follows: Diarrheal diseases, under five years of age, 246; diarrheal diseases over five years of age, 251; pulmonary tuberculosis, 158; contagious diseases, 56; pneumonia, 36; bronchopneumonia, 72; heart diseases, 117; cancer, 76; Bright's disease, 92; violence, 93, of which 3 were from sunstroke, 2 from homicide, 16 from suicide, and 72 from accidents.

The Health of Philadelphia.—During the week ending July 17, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 29 cases, 3 deaths; scarlet fever, 22 cases, 2 deaths; chickenpox, 2 cases, 0 deaths; diphtheria, 45 cases, 8 deaths; smallpox, 1 case, 0 deaths; measles, 43 cases, 1 death; whooping cough, 29 cases, 3 deaths; tuberculosis of the lungs, 78 cases, 49 deaths; pneumonia, 12 cases, 20 deaths; erysipelas, 4 cases, 2 deaths; tetanus, 1 case, 0 deaths; mumps, 4 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 85 deaths; puerperal fever, 1 death; dysentery, 1 death; cholera morbus, 2 deaths. The total deaths numbered 505 in an estimated population of 1,565,569, corresponding to an annual death rate of 16.77 in a thousand population. The total infant mortality was 186; 163 under one year of age, 23 between one and two years of age. There were 42 stillbirths; 25 males and 17 females. The total precipitation was 0.92 inch. There was one death from heat and sunstroke.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 15, 1909.

1. Some Aspects of the Pathological Physiology of Intracranial Tumors, By HARVEY CUSHING.
2. Aural Complications in the Exanthemata, By CHARLES R. C. BOWEN.
3. On the Treatment of Chronic Suppurative Nasal Conditions by the Use of Lactic Acid Bacteria, By J. L. GOODALE.
4. A Specimen of an Encapsulated Brain Abscess, By HARRIS T. MOSHER.
5. Congenital Occlusion of the Cartilaginous Canal, By HARRIS T. MOSHER.
6. Anæsthesia for Adenoid and Tonsil Operations, By ALBERT H. MILLER.

1. Pathological Physiology of Intracranial Tumors.—Cushing remarks that, contrary to the common belief, brain tumors are of frequent occurrence, and possibly there is no disease in which the symptoms are more often overlooked or incorrectly interpreted. For the sake of successful palliative or curative measures, a precocious diagnosis is necessary, also the understanding that this condition is merely a stage in the process of choked disk. Inversion or interlacing of the boundaries of the color fields, heretofore regarded as pathognomonic of hysteria, has been found to be a fairly constant early phenomenon in tumors. One recognized characteristic of the brain under pressure is its tendency to herniate through a cranial defect, and as there is normally an opening at the foramen magnum, a certain degree of protrusion is usually present there. In the presence of such a condition, the withdrawal of the cerebrospinal fluid from the spinal meninges by a lumbar puncture is often hazardous, as it may tend to a sudden wedging of the bulb in the opening, with anemia and paralysis of the vital centres. The pituitary body proves to be one of the most important of the ductless glands. It not only may be the primary seat of a new growth, but in the case of intracranial tumors elsewhere, particularly when they are accompanied by hydrocephalus, its function may secondarily become disturbed in ways which are clinically recognizable. The conducting paths in the brain are more often affected by simple pressure from tumors than by actual destruction, and the removal of the growth or simple relief from pressure may often lead to a surprisingly rapid restoration of function. For an accurate focal diagnosis a thorough, early examination is often necessary, for with an advancing lesion symptoms at a distance may greatly confuse the clinical picture. A considerable percentage of patients who present themselves for surgical treatment are so nearly blind that a study of the visual fields, which should be one of the most helpful localizing signs, is precluded. From a histological point of view the classification of brain tumors is most unsatisfactory, and the general behavior and manner of growth of many of them does not conform with accepted views. Some gliomata may be definitely encapsulated and favorable for operative removal, and many tumors of this supposedly malignant type may undergo cystic degeneration or gelatinous transformation.

6. Anæsthesia for Adenoid and Tonsil Operations.—Miller's apparatus for anæsthesia in ade-

noid and tonsil operations consists of a vaporizer which is worked by a foot pump and of several accessory implements which may be connected with the vaporizer by a long rubber tube. The features of this apparatus are: 1. It will vaporize fifteen ounces of ether in an hour and will readily provide sufficient anaesthesia in an adult with the face uncovered for a laparotomy of an hour's duration. 2. Neither the inlet nor the outlet tube dips into the ether. For this reason it is impossible to force liquid ether back into the patient's air passages. 3. The atomizer of the vaporizer sprays directly into the outlet tube. Thus the vaporizer is very sensitive to changes in the air pressure supplied to it. 4. The length of the outlet tube is such that when the ether spray reaches the top of the tube it has been converted into a vapor, imperceptible except from its odor. The accessories which complete this apparatus are a mouth gag which has an ether tube incorporated in one of its jaws, a mouth tube similar to the tube of the Junker apparatus, a soft rubber nasal tube, and a double nasal tip. For the adenoid operation the mouth gag or the double nasal tip is selected. The conduct of ether anaesthesia with this apparatus for an adenoid and tonsil operation is very satisfactory. The patient is prepared for operation in the usual way. The gag, or nasal tip, with a short rubber tube attached, is sterilized with the surgeon's instruments. The vaporizer with foot pump attached, is placed on the floor at the head of the operating table, care being taken that it is not accidentally overturned. A long piece of rubber tubing is brought up from the efferent tube of the vaporizer to the head of the table. The patient is first etherized in the usual way and is placed in the required posture. The surgeon then adjusts the gag to suit his convenience. The etherizer connects the long tube and the short piece which is attached to the gag and continues to administer ether by working the foot pump more or less vigorously. As long as the patient is breathing through the mouth, a satisfactory anaesthesia is maintained. During the later stages of the adenoid operation, nasal breathing may so dilute the ether vapor that the patient begins to recover consciousness. If the mouth and nose are then covered with a towel and the vaporizer is worked for a few minutes, complete anaesthesia is restored.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

July 24, 1909.

1. The Hypophysis Cerebri, By HARVEY CUSHING.
2. Optic Atrophy in Tabes, By EDWARD D. FISHER.
3. Epibulbar Leucosarcoma, By CASEY A. WOOD.
4. The Management of Acute Haemorrhagic Glaucoma in the Presence of Advanced Arteriosclerosis, By CHARLES STEEDMAN BULL.
5. Morphæalike Epithelioma, By M. B. HARTZELL.
6. The Chronic Scaly Erythrodermatia, By WILLIAM B. TRIMBLE.
7. Rodent Ulcer of the Cornea, By ROBERT L. RANDOLPH.
8. Prostatic Cancer, By DEAN LOREE.
9. Pellagra in the United States, By EDWARD JENNER WOOD.
10. The Vitality of Dental Enamel, By R. R. ANDREWS.
11. Minor Points in the Surgery of Cataract, By HOWARD F. HANSELL.
12. Clinical Diagnosis of the Syphilogenous Diseases of the Central Nervous System, By MAX NONNE.
13. Benign Tumors of the Turbinate Bodies Clinically and Pathologically Considered, By RICHARD H. JOHNSTON.

1. **The Hypophysis Cerebri.**—Cushing, in his oration in surgery, read before the section in surgery of the American Medical Association, says that two conditions, one due to a pathologically increased activity of the pars anterior of the hypophysis (hyperpituitarism), the other to a diminished activity of the same epithelial structure (hypopituitarism), seem capable of clinical distinction. The former expresses itself chiefly as a process of overgrowth—gigantism, when originating in youth, acromegaly when originating in adult life. The latter expresses itself chiefly as an excessive, often a rapid, deposition of fat with persistence of infantile sexual characteristics when the process dates from youth, and a tendency toward a loss of the acquired signs of adolescence when it first appears in adult life. Experimental observations show not only that the anterior lobe of the hypophysis is a structure of such importance that a condition of apituitarism is incompatible with the long maintenance of life, but also that its partial removal leads to symptoms comparable to those which we regard as characteristic of lessened secretion (hypopituitarism) in man. A tumor of the gland itself, or one arising in its neighborhood and implicating the gland by pressure, is naturally the lesion to which one or the other of these conditions has heretofore been attributed, though it is probable that oversecretion from simple hypertrophy, or undersecretion from atrophy, will be found to occur irrespective of tumor growth when examination of the pituitary body becomes a routine measure in the post mortem examination of all cases in which the conditions suggest one or the other of the symptoms complex described. When due to tumor, surgery is the treatment that these conditions demand, and at present there are reasonably satisfactory ways of approaching the gland; but clinicians and surgeons must clearly distinguish between the local manifestations of the neoplasm due to involvement of structures in its neighborhood other than hypophysis, and those of a general character from disturbances of metabolism due to alterations of the hypophysis itself.

8. **Prostatic Cancer.**—Loree remarks that the earliest symptoms of prostatic cancer are identical with those of senile hypertrophy. It is very apparent that those cases with an infiltration predominating from the first have certain characteristics evidenced by cystoscopic examination of the bladder base and digital examination of the seminal vesicles. This, however, is after the invasion has gone beyond the capsule and can hardly be regarded as early in the disease. How often the malignant process is grafted on hypertrophy we do not know, but, considering that senile hypertrophy is found in about one third of all men past sixty, the number of cases reported undergoing degeneration in the past would indicate a large ratio between the two. Whether malignancy is suspected or not, the hæmolytic action of the blood should be studied in all cases; although not accurate, according to Crile, in over eighty-five per cent., it should be carried out as a routine procedure. The clinician is dependent on microscopical investigation for an exact distinctive diagnosis, and this examination should be made at the time of operation by means of the frozen section. Under certain conditions, when an extensive pathological examination can not be made immediately, or a more thor-

ough subsequent search reveals cancer, the operation may be performed at two sittings. In those cases in which the lobes enucleate easily with the finger, if a malignant process exists, it will be confined to the interior of the lobe or lobes and the necessity of a more radical operation will not be apparent. This responsibility, however, must rest with the surgeon at the time of operation. Just as we have come to know the danger of leaving benign growths of the mammae, so must the profession regard the prostate, for innocent enlargement does not always remain benign, and there is little satisfaction in the oft repeated statement, "a patient bears catheter life well" if his forbearance brings him to a state of cachexia. A lowering of the high mortality of the past will not come from the perfection of operative procedures alone, but through the knowledge of the efficacy of early intervention. Surgical work is of as little avail on the prostate as on the mammary gland, if we wait for conclusive symptoms before we interfere.

9. Pellagra in the United States.—Wood states that the treatment of acute pellagra is of no avail. We have reason to suspect that the epizootic meningitis among horses is due to the same cause as pellagra in man. If a streptobacillus is the cause of pellagra and the horse is susceptible, we have reason to hope that the serum therapy will soon come to our assistance. It has been shown that the blood of a healed pellagrin is curative in guinea pigs experimentally inoculated with pellagrous material. In the chronic cases it is possible that a cure may result from the removal of all corn food and general tonic treatment. Atoxyl is much vaunted just now, but in his hand the results have not been so brilliant as reported by the European writers on pellagra.

10. The Vitality of Dental Enamel.—Andrews says that it may be assumed that the scant vitality found in young enamel is given to it by a very thin organic layer of dentine origin between the dentine and enamel called the interzonal layer, together with an ingrowth of some of the processes of the dental forming cells which have invaded the enamel substance prior to its calcification. In some instances he has found these processes to have persisted in this invasion of the enamel substance so as to reach, or nearly reach, to the outer surface of the fully formed enamel. These invading dentinal processes are exceedingly irregular in their course, seldom following the line of the cement substance, but more often running in an oblique direction across the enamel rods. In a thin section of the cusp of a human tooth we can count nearly forty of these invading dentine fibers. Where they pass into the substance of the enamel they seem to have become flattened and compressed like lamellae by the force exerted by the rods of the enamel while they were calcifying.

12. Clinical Diagnosis of the Syphilitic Diseases of the Central Nervous System.—Nonne has subjected patients with syphilitic diseases of the central nervous system to four reactions: Pleocytosis, increase of globulin, reaction of deviation of complement in the blood serum and spinal fluid according to Wassermann's test. He has found that paresis gives almost invariably all four positive reactions. Tabes shows almost invariably

pleocytosis, increase of globulin, and Wassermann reaction only in the blood; the same is true of the different forms of cerebral and cerebrospinal syphilis. In these enunciations is expressed the value of the four reactions as applied to the distinctive diagnoses between neurasthenia with and without a syphilitic history. For the distinctive diagnosis between cerebrospinal syphilis and cerebral tumor without a syphilitic history, the Wassermann reaction is of extreme value—even conclusive in that it is negative both in the blood and in the spinal fluid in the latter. Where the patient with cerebral tumor has a syphilitic history, the Wassermann reaction is valueless. Pleocytosis and increase of globulin play no decisive part in the distinctive diagnosis between cerebrospinal syphilis and cerebral tumor. The Wassermann reaction occurs in multiple sclerosis in the spinal fluid not at all and in the blood serum so very rarely that this fact does not come into consideration. On the other hand, the appearance of pleocytosis and increase of globulin is not so rare in multiple sclerosis as to render this reaction of value in the distinctive diagnosis of syphilis. The occurrence of the Wassermann reaction in the blood in presumable idiopathic epilepsy should give rise to grave doubts against the diagnosis and should render it extremely likely that the condition is a syphilitic one (paralysis or cerebrospinal syphilis or epilepsy with syphilitic history). The same holds good for pleocytosis and increase of globulin. In the case of pseudotabes alcoholica without a syphilitic history, the four reactions practically never occur. Their absence may, therefore, be safely regarded as conclusive in the case of tabes.

MEDICAL RECORD.

July 24, 1909.

1. Scleroma of the Upper Respiratory Tract. With a Report of Two Cases: Rhinopharyngolaryngoscleroma and Rhinopharyngoscleroma, (Vaccine Treatment), By J. H. GUNTZER.
2. Brain Arches. Four Grand Arches of the Cerebrum. By WALLACE WOOD.
3. The Rare Forms of Cyanosis: Polycythæmia, Methæmoglobinæmia, and Sulphæmoglobinæmia. By T. WOOD CLARKE.
4. Secondary Carcinoma of the Lung. By L. M. WARFIELD.
5. Percussion of the Lungs. By HUGHES DAYTON.

1. Scleroma of the Upper Respiratory Tract.—Guntzer remarks that scleroma is an infectious disease, whose onset has occurred even in infancy, but usually begins in childhood or adolescence and it is not limited to adult life, as some still believe. The so called Frisch bacillus plays an important rôle in the causation of scleroma, being found in the exudate and in the tissue proper, and our author's work, proving that a vaccine prepared from the Frisch bacillus can create at least a local immunity, is a further point favorable for the assumption that the Frisch bacillus plays an important rôle in this disease. The Frisch bacillus in the tissue is also Gram positive, when hardened in a five per cent. formalin solution as observed by the writer; it has a lively and lasting motility when examined in the hanging drop, and grows smaller and thinner as the age of the culture increases. From the agglutination test, also applied here for the first time, with the Frisch bacillus, no conclusion can be drawn. Further tests

on patients whose immunity has not been influenced by inoculations, might prove valuable. In the biological experiments the time factor has been overlooked, and, in the future, in so chronic an affection as scleroma, a long time for observation must be allowed. Our author believes that a parasite or insect may be the means of transmission for this disease, and when discovered will supply the missing links for the infectious ætiology of scleroma. Even allowing its contagion to be mild, at some time the emigration or health authorities in the United States may have to adopt means to limit the increase in scleroma cases. The examination of a small piece of tissue leads into fallacy in histopathological diagnosis; therefore examine as large a piece of tissue as possible. A deformed contour of the external nose is only found in a small percentage of cases. Metastasis does rarely occur in scleroma. The diagnosis of scleroma, at least in the early stages, is not easily made, and the clinical course must be taken into consideration along with the bacteriology and histopathology in order to arrive at a correct diagnosis. Scleroma does not render a patient immune to other infections, but other infections may favorably antagonize the scleromal process. The x ray treatment, at this time, holds out the best prospects of a possible cure for scleroma; the vaccine treatment has at least caused a local immunity, and may be a means of possible cure if used for a long time, and, as to frequency and quantity, in proper dosage. Surgery has only an elective place in the treatment of scleroma and is useful only as an auxiliary.

5. Percussion of the Lungs.—Dayton states that there is no fixed note corresponding with the term pulmonary resonance; but each individual chest has its own standard tone which should be determined before drawing conclusions as to the existence of pathological conditions. In comparing two tones, the ear more readily recognizes a change from normal pulmonary to impaired resonance than a corresponding increase of resonance from impaired to pulmonary. In simply comparing the notes over symmetrical points on the two sides of the chest, an observer may easily overlook symmetrical impairment of resonance or slight impairment on one side as contrasted with more marked dullness on the other. It is, therefore, important also to percuss each lung independently, especially in cases in which one lung is obviously abnormal. It is of particular value, in order to determine the limits of a pulmonary lesion, to find some portion of the lung over which the tone may be considered the standard pulmonary resonance for the individual chest, and then to percuss the chest both upward and downward from the site of such a normal resonance, so as to approach the dull areas from the normal, whether the former are at the apices or at the bases.

BRITISH MEDICAL JOURNAL.

July 10, 1909.

1. The Treatment of Chronic Degenerative Lesions of the Heart and Aorta, By SIR JAMES BARR.
2. Blood Pressure in Man: Its Estimation and Indications for Treatment, By SIR LAUDER BRUNTON.
3. The Diagnosis and Operative Treatment of Chronic Gastric and Duodenal Ulcer: An Experience of Three and a Half Years, By DAVID DRUMMOND and RUTHERFORD MORISON.
4. Pain in Mucous Colitis and in Irritable States of the Colon in General, By T. STACEY WILSON.

5. A Case of Intussusception Accompanied by Polypus and Stricture: Perforation: Resection: Recovery, By R. V. DE ACTON REDWOOD.
6. Impaction of Gallstone in Small Intestine: Laparotomy: Recovery, By HENRY ROSS.
7. Empyemata Associated with the Bacillus Coli: Treatment by Antitoxine, By J. SIDNEY PEARSON.

1. Treatment of Chronic Degenerative Lesions of the Heart and Aorta.—Barr remarks that the treatment of Stokes-Adams disease has hitherto not been very satisfactory or successful. There seems to have been a block against any progress in treatment as well as against the transmission of the contraction waves. The very slow pulse is supposed to be due to degeneration of the bundle of His, and so only every second, third, or fourth wave is able to jump the barrier, and reach the ventricles. There is no drug yet known which will get rid of this block. The apex of a frog's heart when cut off remains at eternal rest, but if you tie a cannula in it and supply it with nutritious fluid under pressure, its rhythmical contraction starts again. This affords a better indication for treatment than any idea which we may hold about the function of the auriculoventricular bundle. A fair diastolic pressure should be maintained in both ventricles, the patient should wear a tight abdominal belt, or when in bed a heavy shot bag over the abdomen. Frequent shallow breathing is better than long and deep. The degenerative changes in these cases are not confined to the bundle of His, though we may occasionally hear it stated in post mortem records that every other part of the heart was healthy. The effective force of the right ventricle is often more impaired than that of the left, and in such cases it does not keep up sufficient diastolic tension in the left side. If the patient has a large vital capacity a deep breath may so lower the pressure in the pulmonary circuit that there may be two or three beats of the right ventricle before there is any response of the left. The author here remarks that if he was suffering from this disease he would rather be treated according to the principles of Stokes than by any one of the modern school, and he might even take very kindly to his alcoholic prescription. He is inclined to think that a moderate allowance of beer, stout, or claret might do good in these cases by increasing the diastolic tension in the ventricles. The irritability and metabolic activity of the cardiac muscle can be improved by thyroid and iodine, and the sodium salts. There is usually an excess of lime, probably in a stable state, and for this condition large doses of sodium citrate should be recommended with small doses of sodium iodide. This sets free the calcium ions, hastens the elimination of the excess of lime, and lessens the viscosity of the blood. Strychnine is useful, and to a less extent atropine, but nitroglycerin and the nitrites are injurious.

3. Chronic Gastric and Duodenal Ulcer.—Drummond and Morison remark that the physical signs on which we place most reliance are: A tender spot. Over the ulcer, whether in stomach or duodenum, a deep, well localized, tender spot is generally discoverable which serves as an aid to diagnosis. Rigidity of the overlying muscles. The abdominal muscles covering an active gastric or duodenal ulcer will be found to be rigid, and this rigidity is quite localized. The hardness of the upper part of the right rectus overlying an active pyloric

or duodenal ulcer is therefore an important sign. A tumor. A tender nodule or an indefinite induration, especially in the neighborhood of the pylorus, with a history of long standing stomach trouble, are characteristic of chronic ulcer, and furnish its most important sign. A considerable tumor may be caused by inflammatory exudation and induration round a chronic ulcer, but this is rare. A definite movable tumor suggests a cancerous rather than a chronic ulcer. The symptoms which distinguish a chronic gastric from a chronic duodenal ulcer related chiefly: 1. To pain. To the time at which pain occurs after taking food, that is, soon in gastric, later in duodenal ulcer. The influence of food upon the pain; solid food increasing gastric, but relieving duodenal pain. The effect of rest in bed on the pain; rest relieving gastric, but producing no good effect on duodenal pain. 2. To the character of the vomiting. Its close relationship to food and pain; its involuntary character in gastric, and its voluntary appearance in cases of duodenal ulcer. 3. To the form of hæmatemesis. Recurrent, and in relatively small quantities in gastric, overwhelming and followed by mælena in duodenal cases. The diagnosis of stricture in the neighborhood of the pylorus is so easy that no excuse can be offered for mistakes. With the history of a chronic gastric or duodenal ulcer some years back, and periods of remission of the symptoms, each remission being followed by a less perfect recovery until the evidences of stomach dilatation are complete—with such history the diagnosis of cicatricial stricture as a consequence of the ulcer is unmistakable. This is fortunate, as these cases demand operation and are the most satisfactory of all in results. With proper care it is possible in most cases to form a definite diagnosis of gastric from duodenal ulcer, but occasionally this is difficult. The author has performed 123 gastroenterostomies, of which number 118 patients recovered, and five died.

THE LANCET

July 10, 1909.

1. A Case of Unilateral Optic Neuritis from Intracranial Tumor. By SIR WILLIAM R. GOWERS.
2. Ionic Medication in the Treatment of Some Obstinate Cases of Pelvic Disease in Women. By SAMUEL SEOWAN.
3. On Spontaneous Cure of Thoracic Aneurysm. By HERBERT S. FRENCH.
4. The Treatment of Gonococcus Infections by Vaccines. By JOHN W. H. EYRE and BERNARD H. STEWART.
5. Three Cases of Delayed Chloroform Poisoning. By T. C. SOMERVILLE.
6. Notes of a Case of Splenectomy for Injury. By J. CRAWFORD RENTON and J. MILL RENNISON.
7. An Unusual Case of Goitre. By H. NEVILLE CROWE.
8. A Modified Plan for the Preparation of Chronic Catgut. By CHARLES H. CHRISTAL.

2. **Ionic Medication in Pelvic Diseases in Women.**—Sloan speaks of ionic medication, that is, the application of electrochemistry to therapeutics. The human body is an electrolyte in virtue of the salines in its tissues, the principal saline being sodium chloride. The ions or electrically charged atoms are some positive, some negative, and are capable of moving freely about and against each other, so that there must be a constant commotion among these ions. The author uses copper ionization, and states that he has been very successful with his treatment.

He has had a glass speculum made which suits much better than the ordinary one. It can contain more fluid and has openings in it, near to the cervical end, which serve to convey the fluid to the sides of the vagina, thus distending and filling it. The holder of the electrodes is kept in position by a bag of shot which rests on its broad end on the couch, the patient being on her back with a bed slipper under the pelvis. This holder keeps the speculum in position, preventing it from slipping out or from dropping. Everything being therefore fixed, the cervical or intrauterine electrode can, after insertion through the speculum, be kept in position with perfect ease and safety. A spiral of copper wire inserted into the speculum and fixed to it serves for vaginal applications and also, without the speculum for vulvar medication, as it can be used for pressing against a large pad of cotton soaked in the fluid and packed carefully against the opened vulva. The preparation of copper which he employs is the cupric chloride, the solution being 1 per cent., and he prefers now always to insert the cervical and the intrauterine electrodes through the speculum. This ensures asepsis, and the uterine electrode having grooves, the fluid can pass readily along the side and so fill the uterine cavity. Being applied to the positive pole, the current must be reversed for about one third of the time it has been allowed to flow in order to extricate the electrode; otherwise there will be pain and bleeding. In order to avoid shock the current must be started and stopped slowly and steadily. He formerly applied the neutral electrode to the hypogastrium or to the sacral region, but this involved the undressing of the patient and prevented the current from being diffused equally throughout the cavity of the uterus, since it takes the most direct course to the neutral electrode. He finds the hands a convenient place for the neutral electrode, a large clay one, because, being at a distance from the uterus, the current will more readily diffuse itself over the whole of the uterine wall. All rings must be removed, however, whilst the current is flowing, otherwise the fingers may be burnt beneath the rings.

4. **The Treatment of Gonococcus Infection by Vaccines.**—Eyre remarks that 1, in acute gonorrhœa gonococcus vaccine is markedly toxic and exerts a profound influence over the disease. For routine work (hospital, out patients, etc.) vaccine treatment is not devoid of danger and requires the exercise of conservative caution. A stock vaccine comprising a dozen different strains, gives results only slightly inferior to those observed when using a vaccine prepared from the patient's own organism. This is not the rule in most other diseases. Small doses, repeated at short intervals, are more effective than large doses at lengthened intervals. Small doses of vaccine (from 1,000,000 to 10,000,000) are safer and more satisfactory than the large doses (from 50,000,000 to 100,000,000) which are often prescribed. After an injection of from 500,000 to 2,000,000 the negative phase is either absent or extremely transient. An inoculation of from 5,000,000 to 10,000,000 causes a negative phase of usually not longer than forty-eight hours' duration, followed by a positive phase of from three to five days. Vaccines in small doses serve the double

purpose of raising and steadying the opsonic index. A steady index just above normal is found to be the most favorable condition for rapid recovery. 2. In simple chronic gonorrhoea where the gonococcus has ceased to be the infecting organism these cases are on a par with other chronic inflammatory states, but are frequently more difficult to cure owing to environment and local conditions. Chronic cases where the gonococcus is the sole infecting organism have a better prognosis from the point of view of treatment by vaccine than a mixed infection or one of staphylococcus only. 3. In chronic gonorrhoea with complications the estimation of the opsonic index is helpful to diagnosis and is a useful means of determining approximately the opsonic state of the blood. Chronic gonococcus infections, however, present clinical features which themselves afford valuable indications during the course of vaccine treatment. Where the gonococcus alone is the infecting organism, if the opsonic index cannot be obtained as frequently as is desirable, routine injections of from 1,000,000 to 2,000,000 doses every three to five days are safe and satisfactory; a lapse of five to seven days after doses of 5,000,000; an interval of eight to ten days after inoculation of 10,000,000. Larger doses than these are seldom desirable. Treatment by small and gradually increasing doses at frequent intervals should at all times be observed; the use of large doses is even more dangerous than in acute cases, and may be followed by disastrous consequences. In orchitis small doses of vaccine quickly relieve pain and cause a more rapid abatement of symptoms than are obtained by the usual routine treatment alone. In iritis the severe pain, which is a marked and obstinate feature, is relieved in forty-eight hours after an injection, and disappears in from three to four days; cure is much hastened. In arthritis the treatment is of considerable value.

LA PRESSE MEDICALE.

May 22, 1909.

1. Simplified Extirpation of Epithelioma of the Isthmus of the Fauces, By JACQUES.
2. On the Buried Prosthesis in the Treatment of Fractures, By H. CHAPUT.
3. Modern Theory of Surgical Treatment of Wounds of the Abdomen in War, By MAURICE CHAMPEAUX.

1. Extirpation of Epithelioma of the Isthmus of the Fauces.—Jacques reports four cases in whom he performed extirpation of an epithelioma in the pharyngeal isthmus. The patients were all elderly persons, and the cancer was in an advanced stage. The operations were apparently successful. The first has not had a relapse after two years; two died from other causes, while the fourth has been operated upon only half a year ago and is in good health. He describes his method of operation in which he does not extirpate the epithelioma by an external incision but by an incision into the buccal surface.

May 26, 1909.

1. Obliteration of the Common and External Iliac Arteries without Gangrene of the Lower Extremity, By G. ROQUE and J. CHALIER.
2. Antisepsis of the Skin with Tincture of Iodine, By GÉRARD.

1. Obliteration of the Common and External Arteries without Gangrene of the Leg.—Roque

and Chalié remark that as surgical interference in such cases has not been successful medical measures are indicated. If the diagnosis is made early enough the patient should receive the following treatment: Rest in bed; the affected limb to be kept warm with hot bottles, and massaged to favor breaking up of a clot and to prevent formation of a new clot; and the circulation to be stimulated.

May 20, 1909.

1. The Principal Clinical Characteristics of Cerebrospinal Meningitis, By ROBERT DELVÉ.
2. Antimeningococcic Serum Therapy, By GRYSZ.
3. Technique of Lumbar Puncture, By P. DESFOSSÉS.
4. Technique in the Search for and in Identification of Weichselbaum's Meningococcus, By L. LAGANE.
5. Local Serum Therapy in Infection of the Eye, By A. CANTONNET.

2. Antimeningococcic Serum Therapy.—Grysz says that the bacteriological diagnosis of cerebrospinal meningitis is based 1. Upon the existence of polynuclear cells in the cerebrospinal fluid, seldom we find mononuclear cells. 2. Upon the presence of small diplococci in the leucocytes and in the fluid, which are Gram negative, and analogous to the gonococcus. 3. Upon the development of meningococci in the culture medium. 4. Upon the appearance of a uniform cloudiness of the centrifuged fluid, precipitorea of Vincent and Belot. It is very important to make an injection with antimeningococcic serum in a patient presenting symptoms of painful meningitis, even before a bacteriological examination has been made. If the diagnosis has been verified the injection should be repeated the next day and the third day, supplemented by prolonged warm baths.

5. Local Serum Therapy in Infection of the Eye.—Cantonnet observes that general serum therapeutics is called for in infections of the cornea or conjunctiva, produced by the bacillus of diphtheria, the pneumococcus, the meningococcus, the streptococcus or staphylococcus, while local application of a specific serum may be of help. In chronic cases the local application is not called for as a secondary infection has been produced, making the local application of a specific serum inert; but in acute cases local serotherapeutics is indicated.

June 2, 1909.

1. Wounds of the Chest and Thoracocentesis, By PAUL RICHE.
2. Cinesitherapeutic Treatment of Hemiplegia, By T. KOINDJY.

LA SEMAINE MEDICALE.

May 26, 1909.

1. Laryngostomy and Various Methods of Dilatation of the Larynx from Without, By A. SARGNON and R. BALATIER.
2. A Test for Comparative Hyperæmia instead of Amputation in Gangrene of the Foot, By F. LEJARS.

1. Laryngostomy.—Sargnon and Balatier report eighteen such cases with three deaths. They have modified Killian's method, and use during the first week gauze tampons only, inserting the tube after the first week. They are in favor of immediately suturing the larynx to the skin, if it is possible, as the formation of the epidermis is then very rapid. Of their fifteen successful cases all patients but one are on the way to recovery, and this case was in a young woman with tuberculosis of the lungs.

June 2, 1909.

Aortic Insufficiency without Murmur,

By LE BARD.

Aortic Insufficiency without Murmur.—Le Bard refers to his former publications on this subject, that aortic insufficiency without murmur can be diagnosed by palpation, when the *choc en dôme* will be noted, that is a dome shaped elevation of the region of the apex at each aortic impulse without valvular vibration. This *choc* is permanent, somewhat circumscribed but well defined; in the dorsal decubitus of the patient the *choc* is to be found in the fifth intercostal space; in the left sided position of the patient it is more pronounced and is to be located in the sixth intercostal space. In both cases it is visible.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 7, 1909.

1. Adhesions of the Diaphragm, By L. BASSENGE.
2. Transplantation of the Kidney, By ERNST UNGER.
3. Experimental Studies Concerning Digestive Disturbances during Pregnancy, By THEODOR BORODENKO.
4. The Importance and Certainty of Chromocystoscopy, By MAX ROTH.
5. The Antiproteolytic Action of the Blood Serum and Its Relations to the Metamorphosis of Albumenoid Substances, By KURT MEYER.
6. The Value of a "Serum Color Reaction" for the Demonstration of Syphilis, By CARL STERN.
7. Physiology of the Voice and of Speech, By MAX SCHEIER.
8. Surgical and Prothetic Covering of Defects of the Face and Gums, By LUDWIG BRANDT.
9. Contributions to the Study of Facial Paralysis, By HANS HIRSCHFELD.
10. A Peculiar Case of Achondroplasia (Chondrodystrophia Fetalis), By H. ECKSTEIN.
11. Alcohol, By PAUL SCHENCK.

1. **Adhesions of the Diaphragm.**—Bassenge reports seven cases in which the diagnosis of adhesion between the diaphragm and other parts, usually the pulmonary pleura, was made by means of the x rays, although it could not be made by the usual means of physical examination. He sums up the results of his observations in these cases in the following manner: 1. An examination by means of the x rays is desirable in all cases in which the organs of the thorax are affected, and is necessary from diagnostic, therapeutic, and even social grounds when the ordinary methods of examination fail to reveal the cause of pain complained of. 2. Adhesions of the diaphragm, as long as they are outside of the pleural sac, can be demonstrated in no other way. 3. This method is particularly necessary when the troubles complained of have not been preceded by disease of the lungs or of the heart, or by a traumatism of the thorax.

2. **Transplantation of the Kidney.**—Unger reports six transplantations of the kidneys in dogs and cats, in two of which the transplanted kidneys proved able to functionate.

5. **Antiproteolytic Action of the Blood Serum.**—Meyer says that the amount of antitrypsin can be determined practically in many cases on account of its frequent presence in exophthalmic goitre and carcinoma. The increase of antitrypsin is to be considered as a true antibody formation. The secretion of the pancreas and leucocyte ferment probably play only a subordinate part as antigen, it is more likely that the proteolytic cell ferment is the active agent in the antibody formation. Cell destruction as such with setting free of autolytic fer-

ment does not cause the increase in antitrypsin, which is probably to be ascribed to a primary increase of the proteolytic cell ferment. Metabolic poisons may be assumed to be the cause of the abnormal increase in ferment.

6. **"Serum Color Reaction" for the Demonstration of Syphilis.**—Stern asserts that in very dilute human blood serum material is normally present which with the addition of a solution of phenol and iron chloride may give a brown precipitate reaction. In a number of normal sera materials are present which with stronger concentration of the dilutions of the serum may give the brown color. In a number of syphilitic sera the brown color is stronger and more persistent than with normal sera. But a distinction of syphilitic sera from normal is not at present practical in this manner.

9. **Facial Paralysis.**—Hirschfeld states that he has met with five cases of facial paralysis in which instead of the lagophthalmos usually present, due to the paralysis of the orbicularis, the palpebral fissure was smaller than that of the opposite eye, sufficiently so as to suggest the presence of ptosis from paralysis of the levator, but in all the cases a more careful examination showed that the levator functionated properly. In three other cases he noticed clonic spasms of the muscles on the unaffected side which passed off in a few days and did not return. He also reports a case of traumatic paralysis of the branch of the temporal branch of the nerve which supplied the frontalis muscle.

MUNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 8, 1909.

1. Three Contributions to Otolaryngology (Concluded), By S. SHWARTZ.
2. The Influence of the Abolition of the Police and Medical Examination of Prostitutes upon the Spread of Syphilis in Freiburg, By JACOBI.
3. Primary Tuberculosis of the Nasopharyngeal Mucous Membrane, By MERKEL.
4. Croupous Inflammations of the Intestine, By BÄRMANN and ECKERSDORF.
5. A Contribution to the Question of Medullary Pseudoleukemia, By VON DÖBERG.
6. Röntgenology of the Endogenous Concrements of the Prostate, By FORSELL.
7. Volvulus of the Small Intestine after Purulent Appendicitis and Appendectomy, Laparotomy, and Recovery, By KAPFIS.
8. Hypertrophic Stenosis of the Pylorus in Infancy, By KASPAR.
9. New Forceps for the Extraction of the Molar Teeth of the Lower Jaw, By LINHART.
10. Painless Suture of the Perineum, By MATHES.
11. Iron as a Substitute for Bismuth in X Ray Work, By TAEGE.
12. A New Alternating Current Apparatus, By RICHTER.
13. The Importance of Wassermann's Serum Diagnosis of Syphilis in Practice, By KOPP.
14. Tuberculous Immune Opsonin (Bacteriophage) (Concluded), By BÖHME.

1. **Three Contributions to Otolaryngology.**—Schwartz devotes this his third contribution to the discussion of the errors in diagnosis and treatment most frequently made. He speaks very strongly against those physicians who without proper training pose before the community as specialists and are called by him pseudospecialists, and who, he asserts, do more harm than good. First among the errors of diagnosis is the failure to recognize ear disease in association with other diseases, particularly when subjective ear symptoms are absent or transient. As examples he quotes labyrinthine dis-

eases, with their symptoms of dizziness, nausea, vomiting, restlessness, nystagmus, tinnitus, and deafness which may be readily misunderstood to indicate cerebral disease, or gastric disease when the nausea, vomiting, and dizziness are the most pronounced symptoms. Pyæmia from otitis through thrombophlebitis may easily be held to be cryptogenous when the ear is not examined, or may be mistaken for typhoid in the absence of Widal's test, or it may be confounded with acute articular rheumatism. The second diagnostic error is that of recognizing ear disease when no such disease exists, as in the radiating pains in the ear associated with carious teeth, in acute sore throat, and in ulcerations in the nasopharynx, in rheumatic pains in the ear with no local lesion, and in the tinnitus associated with anæmia and chlorosis without reduction of the hearing. Other diagnostic errors mentioned are the confounding of eczema of the auricle and external canal with malignant disease, the mistake of a plug of cerumen covered with epidermis for a cholesteatoma, of a furuncle for a burrowing abscess, of multiple furuncles for caries and cholesteatoma, of a prolapsed, swollen, or sacklike tympanic membrane for a polyp, of the naked labyrinthine wall for the membrana tympani when the latter was totally absent, of the burrowing abscess in the neck due to caries for primary abscesses of the lymphatic glands. First among errors of treatment he mentions purposeless syringing out of the ear. He says that there are physicians who believe they must begin every examination of the ear by syringing it. This is wrong and may do harm as well, as render diagnosis more difficult by alteration of the appearances in the canal. Equally objectionable is the washing out of the ear with warm water in every case of pain in the ear without determination of the cause. Other errors mentioned are the application of vesicatories in acute inflammation of the middle ear, insufflation of powders into the external canal in suppuration of the middle ear, and faulty methods of removal of foreign bodies from the canal. Other faults spoken of are the syringing out of blood clots in the canal in cases of fresh injury, the inflation *ad infinitum* of the middle ear in cases of sclerosis, and the performance of useless operations in the nose.

2. Influence of the Abolition of the Police and Medical Examination of Prostitutes upon the Spread of Syphilis.—Jacobi states that on April 15, 1908, the official supervision of prostitutes was abolished in Freiburg and that this abolition was promptly followed by an enormous increase in the number of cases of syphilis in the city.

3. Primary Tuberculosis of the Nasopharynx.—Merkel gives the clinical history and findings on autopsy in two cases of this rare condition together with the findings on autopsy in three other cases.

4. Croupous Inflammation of the Intestine.—Bärmann and Eckersdorf discuss the distinguishing points of amoeba dysentery, sprue Indica, syphilis of the intestine, intestinal tuberculosis, and simple ulcerative colitis, and then report a number of cases of a croupous inflammation of the intestine met with by them in Sumatra.

6. Röntgenology of the Endogenous Concrements of the Prostate.—Forssell asserts to have demonstrated that the position, arrangement, form,

and density of the concrements of the prostate are very characteristic, and that as a rule their distinction from other forms of concrements within the pelvis is possible. He says that normal and pathological concrements of the prostate are much more common than has been thought and that they can be positively demonstrated by means of the x ray.

14. Tuberculous Immune Opsonin (Bacteriotropin).—Böhme concludes his long paper with this summary: 1, Normal human serum contains no demonstrable amount of bacteriotropin. 2, Tuberculotropin can be found in the serum of the tuberculous. Those who are only slightly affected produce these antibodies only in a relatively small percentage of cases, but in the seriously sick they are produced in the majority. In the four observed cases of miliary tuberculosis bacteriotropin was not found. 3, After treatment with new tuberculin bacilli emulsion these antibodies were found in every case examined, usually in considerable quantity. 4, There is no close relation between the clinical course and the bacteriotropin and no guide in prognosis is furnished. 5, Bacteriotropin is relatively thermostable; it acts only upon the bacilli and exerts no influence upon the leucocytes. 6, Close relations between the phagocytic power of active and inactive sera do not exist. Sera rich in bacteriotropin may become more active through heating and in these cases may exert a restrictive influence upon active serum. 7, The waves of the opsonin curve can be explained only partly or not at all by the behavior of the bacteriotropin, other factors must take part in their production.

ARCHIVES OF PÆDIATRICS.

June, 1909.

1. Inspiratory Stridor and Dyspnoea in Infants.
By A. D. BLACKADER and H. S. MUCKLESTON.
2. Still's Disease: Report of Two Cases.
By DONALD HINGSTON.
3. Diagnostic Value of Lumbar Puncture in Acute Tuberculous Meningitis of Children.
By FREDERIC E. SONDERN.
4. The Relative Frequency of Abdominal Tuberculosis in Children in Great Britain and the United States.
By DAVID BOVAIRD, JR.
5. The Bacterial Content of Whey.
By OSCAR M. SCHLOSS.
6. Sleep Sweats in Chronic Pharyngeal Stenosis.
By J. R. CLEMENS.

1. Inspiratory Stridor and Dyspnoea in Infants.—Blackader and Muckleston report two such cases. Reviewing the literature they find the majority of recent observers regard the cause of the stridor as purely mechanical and consider that in this affection we have to deal with an exaggeration of the normal infantile type of larynx; a condition due to defective development in the larynx itself rather than dependent upon any spasmodic or incoordinated respiratory act, although this latter may have some influence. The stridor, which is persistent for the greater part of the time, appears to be due to the vibration of the aryepiglottic folds, which on sudden and deep inspiration become sufficiently tense to give a high note. The character of the sound, however, is variable, and is dependent upon the condition of the folds themselves, upon the amount of stenosis present, and upon the degree to which the membranes are stretched. It rarely reaches the high stridulous note of true laryngismus, and, except in cases with an associated increase

of reflex excitability, a condition not characteristic of the simple affection, we meet with no apnœa, no holding of the breath, so characteristic of laryngismus. Cyanosis rarely appears because we seldom get the complete closure of the passage that often occurs in laryngismus. When cyanosis does appear it may be due either to a complete approximation of the folds preventing the entrance of air, which is rare; to an associated spasm of the cords; or to a blocking of the narrow passage by a collection of mucus; to an associated narrowing of the trachea by a hypertrophied thymus; or to the presence of atelectasis or bronchopneumonia. The stridor is to be carefully distinguished from the snoring breathing due to adenoids or other nasal and pharyngeal obstructive conditions and from the sawing stridor due to compression of the trachea. In the majority of cases the stridor is noted a few days after birth.

5. The Bacterial Content of Whey.—Schloss says that from the fact that in the process of making whey the paracasein entangles a large portion of the fat globules within its meshes, it occurred to him that it would be interesting to determine to what extent the bacteria share in the fate of the fat by determining the relative bacterial content of whey and the milk from which it had been made. The difference in the number of bacteria in whey and the corresponding milk would indicate the number of bacteria removed with the clot if the whey was not contaminated during the process. In making whey there are many opportunities for contamination and owing to the heat employed the conditions are rendered favorable for the growth of the bacteria already present. An additional chance for variation is in breaking up the clot, for obviously, the more completely the clot is disintegrated, the more opportunity there will be for entangled bacteria to be liberated. For this work two sets of experiments were made. In one the whey was produced, as it would be for infant feeding by any mother or nurse of ordinary intelligence. In the second set of experiments every possible precaution was taken to limit contamination. The whey was made in sterile test tubes, the clot was not disturbed and the whey which was squeezed from the intact clot was used to make the counts. These experiments show that in the rennin coagulation of milk many of the bacteria are included in the clot and the whey contains far fewer bacteria than the corresponding milk.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held in Philadelphia, June 3, 4, and 5, 1909.

(Concluded from page 188.)

Fibroid Tumors of the Uterus Demanding Operation.—Dr. ARCHIBALD MACLAREN, of St. Paul, asked when a fibroid tumor of the uterus should be operated upon. When, he replied, it began to increase in size or to cause symptoms. He thought with Richardson that the same rule should be followed as in ovarian cysts or in appendicitis in the interval, but that a small subperitoneal tumor

need not be removed if it was not increasing in size. It was not always possible to be sure that a certain tumor was uterine and not ovarian in origin; the usual error was to diagnosticate a small ovarian tumor as a fibroid, on account of its smooth, hard, solid feel. The basis of this paper was the last one hundred consecutive hysterectomies for fibroid disease and also the myomectomies, thirty-one in number, which had been performed during this same period of time. The question of first importance was with regard to the age of the patient. A young woman should always have myomectomy if possible. After a myomectomy the tumor might reform, or other small growths, which were too deeply buried in the uterine wall or too small to be palpated, might increase in size, cause a return of the symptoms, and necessitate a second operation. This had occurred only three times in his total experience of over sixty myomectomies. Myomectomy had been done during pregnancy four times, with one miscarriage. He would not advise the removal of a uterine tumor which was producing no symptoms during pregnancy.

In regard to the mortality, there had been five deaths in the 131 cases, or 3.8 per cent.; 3 per cent. in the series of 100 hysterectomies; and two deaths in the myomectomies, making 6 per cent. This looked like an unjustifiable mortality for myomectomy, but, as both were accidental deaths in no way due to the myomectomy, they ought not to be charged to this operation. The first was due to the giving way of the catgut purse string suture about the stump of the appendix, which had just been removed. The second death was probably due to the leaking of a gallbladder which had been opened and drained through a stab wound, several gallstones having been found at the time of the operation for the removal of a fibroid tumor.

One of the principal dangers of myomectomy, as well as hysterectomy, was postoperative hemorrhage. The gradual formation of a hæmatocoele, which occasionally followed either operation, should be carefully watched for. He had been in the habit of establishing vaginal drainage at the time of the operation when there was any difficulty in preventing oozing. And twice after myomectomy he had made a vaginal section on the third day, opening up and draining such hæmatomata, with the most gratifying results.

In his earlier work he lost two patients in whom the puddle of pus in the cul-de-sac was due to the infected, broken down blood clot which had caused the fatal septic peritonitis, which was not discovered until the autopsy. To the recognition and drainage of these accumulations of blood more than to any other one thing did he ascribe his improved results over a few years ago, when he used to find them at the post mortem examination.

The danger of a fibroid tumor producing a suppurative pelvic peritonitis was considerable. In the 100 hysterectomies, three patients came to him with pelvic abscesses complicating the tumor, due either to a perforative appendicitis or to the necrosis of the tumor or to compression of diseased appendages.

In regard to the method of performing hysterectomy, supravaginal amputation had been the operation of choice, and only in malignant disease or a

suspected malignancy had he reverted to complete removal of the uterus, and for two reasons: First, because it was a less dangerous operation in his hands, and, second, because he had never seen a fibroid tumor grow in the stump of the cervix after a supravaginal amputation. Large sized catgut for the vessels, No. 3 or 4, was the best ligature material, or No. 2 double. It was awkward for tying the uterine arteries deep in the pelvis, and much greater force had to be used than would be necessary on the surface, so the ligature must be larger and stronger. It was always wiser to cut the uterine arteries by the side of the cervix before picking them up, for they lay very close to the ureter. The only time that he had ever injured the ureter was in one of his earlier operations, when the uterine artery was ligated *en masse* before cutting the artery.

Dr. MAURICE H. RICHARDSON, of Boston, had had a large experience in operating for the removal of fibroid tumors of the uterus, and felt there was a greater danger attending myomectomy for the removal of multiple tumors than hysterectomy. If you were going to give a patient a most safe procedure in a case of multiple fibroids of the uterus, it was better to do supravaginal amputation. This opinion was based on personal experience after many years of operating on these growths.

The Treatment of Tetanus.—Dr. WILLARD HUNTER HUTCHINGS, of Detroit, directed attention to an experimental study of the various methods of treatment of recognized tetanus, and from the results obtained by these experiments he had become convinced that chlorotone was the best agent or substance that had been employed thus far with which to control the muscular manifestations of the disease. He had treated six cases that were referred to him with chlorotone, with five recoveries. A detailed account of each case was given in the paper. Chlorotone had no effect on the toxine circulating in the blood, nor did it break up the combination between the nerve cells and toxine. Its use was harmless. There had been no fatality following it. It lowered temperature and had a slight diuretic action.

Dr. THEODORE A. MCGRAW, of Detroit, said that in one of the cases related by Dr. Hutchings, in which tetanus developed, extreme care was used in thoroughly disinfecting the wound, and when the wound was opened as a matter of precaution against tetanus, everything was found aseptic, yet tetanus developed.

Dr. WILLIAM H. CARMALT, of New Haven, asked the chemical composition of chlorotone.

Dr. JOHN B. ROBERTS, of Philadelphia, said that we had all realized for many years in our hospital experience that chloral would cure tetanus, but now, with the addition of antitetanic serum, we had a good combination. He would like to know whether chlorotone had any relation to chloral, or whether it was similar in its composition.

Dr. THOMAS W. HUNTINGTON, of San Francisco, had used chloral to the limit in three cases of tetanus, and all three patients had died.

Dr. A. T. BRISTOW, of Brooklyn, wished to emphasize the absolute necessity of putting patients with tetanus in a room by themselves, kept absolutely quiet, free from noise or any irritation of any kind; and would recommend the use of chloral and bromides in large doses.

Dr. DE FOREST WILLARD, of Philadelphia, said that the only patient with tetanus whom he remembered saving was one that he kept saturated with chloral for twenty-eight days.

The PRESIDENT said they had a great deal of tetanus in their section of the country. He had saved the lives of a few patients who had tetanus with chloral. He had never seen any effect from antitoxine after the disease had started.

Dr. NATHAN JACOBSON, of Syracuse, N. Y., said, as to the possibility of controlling tetanus by amputation, that a review of the literature taught that it had little or no effect. As to the manner of introduction of the antitoxine or serum, whether it was introduced intracerebrally, intraspinally, intraneurally, or intravenously, there was practically no difference in the results.

Dr. JOHN E. OWENS, of Chicago, said the use of antitetanic serum must be considered in the light of a prophylactic. During the constructive period of the World's Columbian Exposition they had several hundred cases of nail wounds of the hands and feet, and in not a single instance did tetanus develop. Their treatment consisted in opening the wounds freely, curetting them more or less, then applying ninety-five per cent. carbolic acid and covering the wound with ordinary surgical dressing.

Dr. J. EWING MEARS, of Philadelphia, said that in a hospital at Ceylon, Cannanea, at the time he visited there, tetanus of puerperal origin was treated with injections of antitoxine successfully.

Dr. HUTCHINGS said that, regarding the composition of chlorotone, when he began using it he did not know what it was, but was impressed with its beneficial action. He asked a chemist how chlorotone was made, and he said: "If you will take equal parts of chloroform and equal parts of acetone, and put them in a test tube, and boil for a minute or two, then add, sodium hydroxide, which precipitates the chlorotone—that when purified, is chlorotone." What the chemical composition of it was, he did not know. It was very important to isolate patients with tetanus. Mere amputation, without any other treatment, had no effect whatever on tetanus.

Dr. J. M. T. FINNEY, of Baltimore, presented a paper in which he spoke of transporting skin flaps from remote parts of the body from one individual to another. He believed that the application of this principle was feasible.

Surgery of the Large Intestine.—Dr. WILLIAM J. MAYO, of Rochester, Minn., in a paper on this subject, said that anatomically the large intestine was a connected whole, but embryologically and physiologically it could readily be divided at the splenic flexure into two well defined parts. The proximal half was derived from the midgut and was an important part of the nutritive system, as it absorbed about half of the fluids and ten per cent. of the solids. The descending colon and the sigmoid were derived from the hind gut, had an antiperistaltic movement, and acted as a fecal storehouse. In the large intestine lymph drainage followed the arterial supply, but the lymphatics were not numerous and in the sigmoid were very sparse. Mobilization of the large intestine for operation was most important, and could be readily accomplished by cutting the outer peritoneal fold, which did not contain important structures, where it was reflected to

the abdominal wall, and lifting the gut from its bed. In this way the large intestine could be drawn outside the abdominal incision and the cut ends easily approximated after extensive resections. The inner leaf of the mesentery was very long, extending practically to the midline, and contained the arteries, nerves, and lymphatics. After mobilization the arteries should be tied and divided at their origin, and the entire mesentery with the fat and gland cleanly dissected from the deep structures. The right inferior angle of the duodenum must be identified and separated in operations about the ascending colon and hepatic flexure. The ureters were attached to the peritonæum after crossing the common iliac arteries, and must be isolated, especially on the left side, to prevent injury. If a neighboring organ, such as the small intestine, stomach, bladder, or uterus, was adherent, it should be coincidentally resected, providing the disease was still local. In cancer of any part of the cæcum, ascending colon, or hepatic flexure, all of the large intestine proximal to the disease should be removed with at least six inches of the ileum, and an ileocolostomy performed between the proximal ileum and transverse colon. In cancer of the transverse colon, splenic flexure, descending colon, or sigmoid, union must be made between the two segments of the large intestine, not so safe a union as that between the ileum and colon. It could be made end to end if sufficiently covered by peritonæum; otherwise end to side or lateral where the peritonæum was sound. If obstruction was marked, the three stage operation of Mikulicz and Paul was advisable. In low sigmoid cancers the combined abdominal and perineal operation was best. In fleshy males the posterior, and in debilitated females the Quenu-Tuttle, operations gave good results in low sigmoid tumors. He reviewed one hundred resections, with twelve deaths.

Resection of the Sciatic Nerve.—Dr. KENNETH A. J. MACKENZIE, of Portland, Ore., exhibited a patient with molluscum fibrosum, who had had, first, a tumor of the ulnar nerve, which was removed by another surgeon. Subsequently the patient had a tumor of the sciatic nerve, which grew slowly at first, but after traumatism grew rapidly. Severe pain was transmitted to the foot from the pressure caused by the tumor. The operation consisted in removing the sciatic nerve *in toto*, with a good result. The patient walked well, considering that the nerve was entirely removed and the nerve supply cut off from the groups of muscles that were involved.

Operative Treatment of Fractures.—Dr. JOHN B. WALKER, of New York, reported six cases in which he had operated for the relief of deformity following fractures, with good results.

Dr. WILLIAM B. COLEY, of New York, reported a case of strangulated retroperitoneal hernia of the intersigmoid fossa, and one very rare (probably unique) case of interparietal ventral hernia at McBurney's point.

Suggestions for the Operative Correction of Syphilitic and Other Deformities of the Nose.—Dr. JOHN B. ROBERTS, of Philadelphia, called attention to the importance of the reconstructive surgery of the external nose. He stated that the cosmetic

improvements possible were not fully appreciated by medical men or by the public at large. The inherent difficulty in these operations was obtaining and maintaining a sufficient projection of the reconstructed organ and preventing cicatricial closure of the nostrils. The early recognition of syphilitic lesions of the nasal bones and cartilages and the prompt institution of efficient antisyphilitic treatment would prevent the occurrence of many conspicuous disfigurements. Blows upon the nose in childhood often caused dislocation of the nasal cartilages and bones. These lesions were untreated because of negligence in examination immediately after the injury. The frontal method was probably the best for total rhinoplasty. Brachial flaps might sometimes be used with advantage. Portions of cartilage or periosteum from other regions of the body might be used to give rigidity to the tissues transferred to the nasal region. Paraffin injections into the subcutaneous tissues were sometimes used as an adjunct. Loss of the cartilaginous external nose below the nasal bones was probably best repaired by Keegan's frontal method. Nélaton's frontal method, which consisted in incorporating a portion of costal cartilage in the frontal flap, was valuable when the bony nasal bridge was missing. The author's method of repairing the sunken nose of syphilis with flaps from the cheeks and mid-frontal region was described as a successful operation. Suggestions for repairing irregular deformities of various kinds were made.

A Method of Combining Exploration and Decompression for Cerebral Tumors which Prove to be Inoperable.—Dr. HARVEY CUSHING, of Baltimore, said that the usual osteoplastic method of exploration of the cerebral hemispheres for a tumor which, after exposure, proved to be inoperable, was usually transformed into a palliative or decompressive measure by the removal of the osseous layer of the resected flap. This frequently led to undesirable consequences, owing to the unnecessarily extensive protrusion which might occur when the brain under tension was protected by scalp alone.

In these cases the bone flap might be preserved and a sufficient hernia, under the protection of the temporal muscle, be provided for, through the removal, while the flap was temporarily resected, of the area of bone which underlay the temporal muscle. Thus the advantage of the usual subtemporal decompression could be combined with the more extensive cortical exploration permitted by a temporary osteoplastic resection.

An Unusual Case of Gunshot Wound of the Brain.—Dr. JOSEPH RANSOHOFF, of Cincinnati, in this paper, reported a case of gunshot wound of the brain from a .32 calibre rifle. The patient was shot in the right temple in May, 1899. The immediate left sided hemiplegia which followed the injury disappeared within a year. Three years later general convulsions supervened, the attacks coming on every three or four months, without any focal point of origin being evident. The x ray showed the bullet split into three parts, one evidently in the zygomatic fossa, one in the temporal fossa, and the largest just within the skull, on a level with the cribriform plate, and probably in or near the cavernous

sinus. Later, left sided paralysis supervened gradually, but he did not see the patient again while he was alive. Death ensued with coma in twelve hours after the onset of the acute symptoms, nearly ten years after the injury. The autopsy revealed an abscess in the right temporosphenoidal lobe, with a small piece of the bullet firmly encapsulated in the abscess wall. The largest fragment shown by the x ray had become innocuous and embedded in the cavernous sinus.

The following papers were also read: The History and Microscopical Study of Fifty Consecutive Cases of Excision of the Thyreoid, by Dr. Francis J. Shepherd and Dr. Charles E. Duval, of Montreal; Sudden Death: A Study of Certain Cases Occurring during Physical Exertion or Psychic Shock, by Dr. John B. Blake, of Boston; Observations on the Inequalities of the Right and Left Femora, by Dr. A. T. Bristow, of Brooklyn, and Vesicointestinal Fistulæ, by Dr. F. W. Parham, of New Orleans.

Owing to lack of time, several other papers were read by title, although the authors were present.

Officers.—The following officers were elected: President, Dr. Rudolph Matas, of New Orleans; vice-presidents, Dr. J. M. T. Finney, of Baltimore, and Dr. George H. Monks, of Boston; secretary, Dr. Robert G. Le Conte, of Philadelphia, reelected; recorder, Dr. Richard H. Harte, of Philadelphia, reelected; treasurer, Dr. Charles A. Powers, of Denver, reelected; member of the Council, Dr. C. B. G. De Nancrede, of Ann Arbor, Mich.

Washington, D. C., was chosen as the place of the next meeting in conjunction with the Congress of American Physicians and Surgeons.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Blood Examination in Surgical Diagnosis. A Practical Study of Its Scope and Technics. By IRA S. WILE, M. S., M. D. New York: Surgery Publishing Company, 1908. Pp. 161. (Price, \$2.)

Dr. Wile's book is a summary of hæmatological methods as applied to surgery and gynæcology. It opens with a chapter on technique, to most of which we agree. The author might have said that the person buying a microscope for blood work should insist that the one sixth inch lens should have an aperture of less than 0.82, and preferably an aperture of 0.75. The higher aperture lenses work so close to the cover glass of the hæmocytometer that often the one sixth inch lenses cannot bring out the lines ruled on the disc of the counting chamber. It is curious that the hæmocytometer is called the Thoma-Zeiss instrument in this as in nearly all books on hæmatology. It should, we believe, be called the Thoma hæmocytometer. Zeiss is the manufacturer only.

Dr. Wile's nomenclature of the leucocytes is somewhat different from that used by the majority of American writers. It would be a very good plan for some national body to appoint a committee to agree upon a nomenclature for leucocytes and to recommend that nomenclature to medical writers. It

would save much trouble to readers who are not hæmatologists and to students who have hæmatological ambitions. On page 40 Dr. Wile places the large "mononuclear" leucocytes as a subdivision of the transitional leucocytes. We can hardly agree to such a position for these cells. If either cell is a modification of the other, the transitional leucocyte is a subgroup of the large uninuclear leucocytes. And we should not be in entire agreement as to the normal adult percentage of leucocytes given on page 43. The differences, however, are very slight.

We should advise a little different technique for making smears; but this, after all, is a minor matter. For the average practitioner who wishes to do hæmatological work in his own practice, we feel sure that no stain is superior to hæmatoxylin and eosin for routine work in all climates and at all seasons. Now that methyl alcohol fixation has given such satisfactory results, hæmatoxylin and eosin staining is easy and satisfactory. We do not recommend Jenner's stain as a routine method. We think Dr. Wile lays too much stress on the importance of iodophilia. We prefer the 1/12 oil immersion lens to the 1/6 dry lens for examining fresh blood.

Dr. Wile (page 71) goes on record as being of the opinion that chlorosis is not "anæmia *per se*." Later on (pages 87 and 88) he uses the term chlorosis, inclosed in quotation marks, to be sure, in its usual sense. He does not approve of the classification of anæmias into primary and secondary anæmias. Here again we differ with the author. In the absence of a definite ætiology, we think the classification of the anæmias as primary and secondary, placing in the latter group all those cases of anæmia that are dependent upon some organic disease, a very useful one.

We are in hearty accord with the opening sentences of chapter VIII (page 95): "Surgical hæmatology requires an identity of technique. All blood examinations in any single case, no matter how frequently they may be required, should be made by the same observer. So far as possible, the hæmatologist should be in a position to fully appreciate the clinical progress of the case, in order that his interpretations may be most reliable and trustworthy." We have never been of those who act as though they believed that the laboratory was a short cut to diagnosis. The descriptions of the changes in the blood in the various surgical diseases we believe to be fairly accurate. There is a statement here and there that might be questioned; but in the absence of definite figures from our own experience we would not be dogmatic. The book, in this respect, offers numerous points for an investigation that many men might well engage in collectively. The illustrations are the poorest feature in the mechanical details of the book. The next edition ought to see them much improved.

Catholic Churchmen in Science. Second Series. Sketches of the Lives of Catholic Ecclesiastics Who Were Among the Great Founders in Science. By JAMES J. WALSH, M. D., Ph. D., LL. D., Dean and Professor of the History of Medicine at Fordham University School of Medicine, etc. Philadelphia: American Ecclesiastical Review, 1909. Pp. ix+228. (Price, \$1.)

Dr. Walsh, in this series of his work, becomes the biographer of Albertus Magnus, John xxi, Guy de Chauliac, and Regiomontanus. The two remaining

chapters deal with clerical pioneers in electricity and with the Jesuit astronomers. He might have told us that Albertus Magnus's works on natural science were in many points based upon the works of Aristotle.

To call Guy de Chauliac the father of modern surgery is, to say the least, original. Chauliac lived in the first half of the fourteenth century, and became body physician to the Popes at Avignon. He is best known through his description of the "black death" which raged in Avignon in 1348.

But how did it happen that Dr. Walsh included a Protestant jurist among his Catholic churchmen in science? Dean von Kleist (pp. 170 *et seq.*), the inventor of the Leyden jar, belonged to an old Pomeranian family the members of which became Protestants in 1534. Mr. von Kleist studied law in Leyden, and died president of the Prussian High Court in Köslin. He was a member of the Royal Academy of Science in Berlin and very much interested in natural science. He invented the Leyden jar in 1745, and received the honorary title of "Domdechant" from the King of Prussia. This title is still given by the King of Prussia to well deserving aristocratic Prussians, such, for example, as Count von Moltke, who was "Domherr of Naumburg." Kammin was an old see, the bishop of which accepted Protestantism in 1536, and the Domdechant von Kammin, Herr Ewald Jürgen von Kleist had nothing to do with the Church.

Though we have here pointed out what we take to be some blemishes, we must add that we consider Dr. Walsh's work as a sterling addition to the history of science.

Lectures on the Use of Massage and Early Movements in Recent Fractures and Other Common Surgical Injuries. Sprains and their Consequences, Rigidity of the Spine, and the Management of Stiff Joints Generally. By Sir WILLIAM H. BENNETT, K. C. V. O., F. R. C. S., Consulting Surgeon to St. George's Hospital, etc. Fourth Edition. With 23 illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. x-134 (Price, 6s.)

The author of this little book has been looked upon as a somewhat overenthusiastic advocate of the early use of massage and active and passive movements in cases of fracture, but we judge from the preface to this edition that he is satisfied with the estimate of the treatment now quite largely held. One of the lectures printed in former issues, on dislocation of the semilunar cartilage, is replaced in this edition by two lectures on sprains and on rigidity of the spine. The book abounds in evidences of its author's good sense, and its teachings are reasonable and of a kind calculated to prove of great assistance in practice.

Medicolliterary Notes.

Dr. Quitman Kohnke, in *McClure's* for July, defends the New Orleans Board of Health from the many attacks made upon them for the disasters following the threatened yellow fever epidemic of 1905. The attacks were summarized by Samuel Hopkins Adams in an article published in the magazine a year ago. Dr. Kohnke speaks from his personal experience and with natural warmth, as he

was health officer of New Orleans from 1898 to 1906.

In the same number of *McClure's* Burton J. Hendrick tells the people What We Know about Cancer. While holding out no false hopes, the article is optimistic in tone and will give great comfort to all those not afflicted with any form of malignant neoplasm. *McClure's* owed the public this article as an offset to the outrageous performance of a sensational British medical writer which it published some months ago, wherein the "cure" of cancer was positively announced. Somebody must have hoped to find a pot of gold at the foot of that rainbow.

NEW PUBLICATIONS.

Strauss, H.—Vorlesungen über Diätbehandlung innerer Krankheiten vor reiferen Studierenden und Aerzten. Mit einem Anhang: Winke für die diätetische Küche, von Elise Hanneman. Zweite, vermehrte und verbesserte Auflage. Berlin: S. Karger, 1909. Pp. viii-382. (Price, 7.80 M.)

Elsner, Hans—Lehrbuch der Magenkrankheiten. Für Aerzte und Studierende. Mit 26 Abbildungen. Berlin: S. Karger, 1909. Pp. 490. (Price, 12 M.)

Mackenzie, James—Symptoms and Their Interpretation. London: Shaw & Sons, 1909. Pp. xx-297.

Thornton, E. Quin—A Pocket Formulary. Philadelphia and New York: Lea & Febiger, 1909. Pp. xx-287.

Osler, William—Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Volume VI. Diseases of the Urinary System, Diseases of the Ductless Glands, Diseases of Obscure Causation, Diseases of the Muscles, Vasomotor and Tropic Disorders, and Life Insurance. Illustrated. Philadelphia and New York: Lea & Febiger, 1909. Pp. x-799. (Price \$6.00.)

Politzer, Adam—A Textbook of the Diseases of the Ear. For Students and Practitioners. Translated and edited by Milton J. Ballin, Ph. B., M. D., and Clarence L. Heller, M. D. Fifth Edition, Revised and Enlarged. With 337 Original Illustrations. Philadelphia and New York: Lea & Febiger, 1909. Pp. xiv-892.

Hay, John—Graphic Methods in Heart Disease. With an Introduction by James Mackenzie, M. D., M. R. C. P. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xvii-184. (Price, \$3.)

Garrod, Archibald E.—Inborn Errors of Metabolism. The Croonian Lectures Delivered before the Royal College of Physicians of London in June, 1908. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. (Price, \$1.35.)

Hogarth, A. H.—Medical Inspection of Schools. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. 360. (Price, \$2.)

Still, George Frederic—Common Disorders and Diseases of Childhood. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xii-731. (Price, \$5.50.)

Muir, Robert—Studies in Immunity. In Collaboration with Carl H. Browning, M. D., Alexander R. Ferguson, M. D., and William B. M. Martin, M. D., Ch. B. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xi-216. (Price, \$3.)

Smith, E. Archibald—Suture of Arteries. An Experimental Research. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. viii-70.

Kerley, Charles Gilmore—Treatment of the Diseases of Children. Second Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 629. (Price, \$5.)

Friedenwald, Julius, and Rührh, John—Diet in Health and Disease. Third Edition, Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 765. (Price, \$4.)

Kelly, Howard A., and Cullen, Thomas S.—Myomata of the Uterus. Illustrated by August Horn and Hermann

- Becker. Philadelphia and London: W. B. Saunders Company, 1909. Pp. xix-723. (Price, \$7.50.)
- Hirschmann, Louis J.—Handbook of Diseases of the Rectum. With One Hundred and Forty-seven Illustrations, Mostly Original, Including Two Colored Plates. St. Louis: C. V. Mosby Medical Book & Publishing Co., 1909. Pp. 374. (Price, \$4.)
- Schorer, Edwin Henry.—Vaccine and Serum Therapy. Including also a Study of Infections, Theories of Immunity, Opsonins, and the Opsonic Index. Illustrated. St. Louis: C. V. Mosby Medical Book and Publishing Company, 1909. Pp. 131.
- Bandelier und Roespe.—Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Für Aerzte und Studierende. Dritte, erweiterte und verbesserte Auflage. Mit einem Vorwort von Dr. Robert Koch, Excelenz. Mit 19 Temperaturkurven auf 5 lithographischen Tafeln, 1 farbigen lithographischen Tafel und 4 Textabbildungen. Würzburg: Curt Kabitzsch, 1909. Pp. xi-221. (Price, 6 M.)
- Baumstark, Robert.—Der Einfluss der Mineralwasser auf Verdauungs- und Stoffwechsel-Krankheiten. Halle a. S.: Carl Marhold, 1909. Pp. 62. (Price, 1.40 M.)
- Schmidt, Adolf.—Diagnose und Therapie chronischer Diarrhöen. Halle a. S.: Carl Marhold, 1909. Pp. 39. (Price, 1 M.)
- Gaultier, René.—Les Opsonines et la thérapeutique opsonisante par les vaccins de Wright. Paris: J. B. Baillière et fils, 1909. Pp. 76. (Price, 1.50 fr.)
- Nineteenth Annual Report of the Eye, Ear, Nose, and Throat Hospital of New Orleans, La. January 1, 1908, to December 31, 1908.
- Report of the Commissioner of Education for the Year Ended June 30, 1908. Volume II. Washington: Government Printing Office, 1909. Pp. vii-1090.
- Henkel, Alice.—American Medicinal Barks. Bulletin No. 139, Bureau of Plant Industry, U. S. Department of Agriculture. Issued June 5, 1909. Washington: Government Printing Office, 1909. Pp. 59.
- Motter, Murray Gall, and Wilbert, Martin I.—Digest of Comments on the Pharmacopoeia of the United States of America. (Eighth Decennial Revision.) For the period ending December 31, 1905. Bulletin No. 49, Hygienic Laboratory. Washington: Government Printing Office, 1909. Pp. 295.
- Sixteenth Annual Announcement of the Woman's Medical College of Pennsylvania, Philadelphia. Session of 1909-1910.
- The Quarterly Bulletin of the Northwestern University Medical School (Chicago Medical College). Volume XI, No. 1. June, 1909.
- Annual Report of the Department of Public Health, San Francisco, Cal., for the Fiscal Year ending June 30, 1907.
- Transactions of the Luzerne County Medical Society for the Year Ending December 31, 1908. Volume XVI.
- Barnet, Enrique B.—Sanidad y Beneficencia. Boletín oficial de la secretaría. Publicación mensual. Director, El Secretario de sanidad y beneficencia, Dr. Juna M. Plá. Tomo I. Habana, Mayo de 1909. Núm. 2. Pp. 339.
- Billard, G., et Ferreyrolles, P.—Les Eaux minérales en tant que sérums artificiels. Etude expérimentale et clinique des eaux de la Bourboule en injections hypodermiques. (Travail présenté à l'Académie de médecine par M. le Professeur Gilbert). Paris: A. Maloine, 1909. Pp. 31.
- Nogier, Thomas.—Physiothérapie, électrothérapie. Avec 251 figures dans le texte. Paris: J. B. Baillière et fils, 1909. Pp. xvi-518. (Price, 10 fr.)
- Emerson, R. L.—Legal Medicine and Toxicology. New York and London: D. Appleton & Co., 1909. Pp. xiii-593.
- Onodi, A.—Die Stirnhöle. Beiträge zur topographisch-chirurgischen Anatomie und zur Lehre von den Erkrankungen der Stirnhöle. Mit 107 Abbildungen nach photographischen Aufnahmen in natürlicher Grösse. Wien und Leipzig: Alfred Hölder, 1909. Pp. 83. (Price, 6.80 M.)
- Ärztliche Mitteilungen über Radium und dessen therapeutische Verwertung in Bad Kreuznach. Herausgegeben vom Kreuznacher Ärzteverein. Bad Kreuznach: R. Voigtländer, 1909. Pp. 30.
- Walsh, James J.—Catholic Churches in Science. Second Series. Sketches of the Lives of Catholic Ecclesiastics who were among the Great Founders in Science. Philadelphia: American Ecclesiastical Review, 1909. Pp. ix-228. (Price, \$1.)
- Boyce, Rupert.—Report to the Government of British Honduras upon the Outbreak of Yellow Fever in that Colony in 1905, together with an account of the Distribution of the Stegomyia Fasciata in Belize, and the Measures Necessary to Stamp out or Prevent the Recurrence of Yellow Fever. London: Waterlow & Sons, 1906. Pp. ix-104.
- Transactions of the Tennessee State Medical Association, 1908.
- History, Effect, and Condition of the Massachusetts Milk Standard. Revised Laws, Chapter 56, Sections 55 and 56. Evidence, Expert Opinions, "General Court" Extracts of Report of Hearings, Letters Published and Arguments of Counsel. Worcester: Charles W. Wood, 1909. Pp. 64.
- Raymond, M. F., et Sériex, P.—La Responsabilité et la condition sociale des épileptiques. Amsterdam: Scheltema & Holkema, 1909. (Through G. E. Sterchert & Co., New York.) Pp. 123. (Price, \$4.50 a volume.)
- Havard, Valery.—Manual of Military Hygiene for the Military Service of the United States. Illustrated with Seven Plates and Two Hundred and Twenty-eight Engravings. New York: William Wood & Co., 1909. Pp. xvii-481. (Price, \$4.)
- Jacobson, Arthur C.—Tuberculosis and the Creative Mind. Brooklyn: Albert T. Huntington, 1909. Pp. 39.
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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service during the week ending July 23, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Georgia—Macon.....	July 4-11.....	2	
Indiana—Fort Wayne.....	June 26-July 3.....	1	
Kentucky—Lexington.....	July 3-10.....	2	
Kentucky—Newport.....	July 3-10.....	1	
Louisiana—New Orleans.....	July 3-10.....	2	
Michigan—Grand Rapids.....	June 3-12.....	1	
Michigan—Kalamazoo.....	July 3-10.....	1	
Minnesota—Duluth.....	July 2-9.....	5	
Montana—Butte.....	June 24-July 1.....	5	
Oregon—Portland.....	May 1-8.....	9	
Texas—Fort Worth.....	July 1-30.....	4	
Washington—Spokane.....	June 26-July 3.....	1	
Wisconsin—La Crosse.....	July 3-10.....	1	

<i>Smallpox—Foreign.</i>			
Brazil—Bahia.....	May 21-June 4.....	4	1
Brazil—Rio de Janeiro.....	May 23-June 12.....	22	12
Canada—Halifax.....	June 2-9.....	1	
Egypt—Cairo.....	June 3-10.....	2	5
France—Paris.....	June 19-26.....	4	
Great Britain—Liverpool.....	June 19-26.....	2	Imported
India—Bombay.....	June 25.....	1	
India—general.....	May 28-June 5.....	1,986	1,698
India—Calcutta.....	May 29-June 5.....	18	
India—Madras.....	June 5-11.....	4	
India—Rangoon.....	May 29-June 5.....	1	
Indo-China—Saigon.....	May 22-29.....	1	
Italy, general.....	June 20-27.....	20	3
Mexico—Monterey.....	June 27-July 1.....	7	9
Portugal—Lisbon.....	June 26-July 3.....	7	
Russia—Riga.....	June 26-July 3.....	6	
Russia—St. Petersburg.....	June 5-12.....	23	6
Siberia—Vladivostok.....	May 21-28.....	1	
Spain—Barcelona.....	June 21-28.....	1	5
Straits Settlements—Singapore.....	June 28-30.....	1	
Switzerland—Geneva Canton.....	June 5-12.....	1	
Tripoli—Tripoli.....	May 22-June 19.....	30	10

<i>Yellow Fever—Foreign.</i>			
Brazil—Bahia.....	May 21-June 18.....	7	
Brazil—Manaos.....	June 12-19.....	2	
Ecuador—Guayaquil.....	May 28-June 12.....	6	

<i>Cholera—Foreign.</i>			
India—Bombay.....	June.....	22	
India—Calcutta.....	May 29-June.....	61	
Indo-China—Saigon.....	May 22-29.....	3	2
Russia—Archangel.....	June 26-July 1.....	10	4
Russia—Chernysk.....	June 25.....	1	
Russia—Cronstadt.....	June 28-30.....	5	1
Russia—Estland.....	June 25.....	1	
Russia—Pleskov.....	July 1.....	1	
Russia—Riga.....	July 1.....	1	
Russia—St. Petersburg.....	June 25-July 1.....	11,581	203
Russia—St. Petersburg, govt.....	June 25-26.....	36	12
Straits Settlements—Singapore.....	May 15-22.....	1	

<i>Plague—Foreign.</i>			
Brazil—Bahia.....	May 21-June 4.....	4	3
Brazil—Rio de Janeiro.....	May 23-June.....	90	
China—Canton.....	May 15-June 5.....	70	
Ecuador—Guayaquil.....	May 28-June.....	8	
Egypt, general.....	June 1-July 1.....	81	25
Egypt—Alexandria.....	June 17.....	1	1
Egypt—Port Said.....	June 15-27.....	2	2
India—Bombay.....	June 8-15.....	35	
India—Calcutta.....	May 28-June 5.....	77	
India—Rangoon.....	May 28-June 5.....	19	
Indo-China—Saigon.....	May 22-29.....	2	1
Japan—Tokyo.....	June 25.....	2	
Japan—Yokohama.....	June 12-19.....	2	
Venezuela—Caracas.....	June 28.....	1	
Venezuela—Caracas.....	June 28.....	2	

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 24, 1909:

BETTS, CHARLES A., First Lieutenant, Medical Reserve Corp. Relieved from duty at Fort Lawton, Wash., and ordered to San Francisco, Cal., to sail on September 5th for service in the Philippines.

DAVIS, WILLIAM R., Captain, Medical Corps. Granted leave of absence for twenty days.

DEAN, ELMER A., Major, Medical Corps. Granted leave of absence for ten days.

EDGER, BENJAMIN J., Jr., Major, Medical Corps. Ordered to Fort Meade, South Dakota, for duty.

FISK, OWEN C., First Lieutenant, Medical Reserve Corps. Ordered to Fort Hamilton, N. Y., for temporary duty.

GINNER, HERBERT C., Captain, Medical Corps. Granted leave of absence for twenty days.

HARRIS, HENRY S. T., Lieutenant Colonel, Medical Corps. Relieved from duty at Fort Leavenworth, Kansas, and ordered to San Francisco, California, for duty as chief surgeon, Department of California.

HUTTON, PAUL C., Captain, Medical Corps. Ordered to report at Washington, D. C., for examination for promotion.

MCLEOD, HARLOW C., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his services being no longer required.

MAUS, LOUIS M., Colonel, Medical Corps. Ordered to St. Paul, Minn., for duty as chief surgeon, Department of Dakota.

MORRIS, SAMUEL J., Captain, Medical Corps. Ordered to Washington Barracks, D. C., for temporary duty.

ROBBINS, CHANDLER P., Major, Medical Corps. Ordered to Fort Terry, N. Y., for duty.

USHER, FRANCIS M. C., Major, Medical Corps. Granted leave of absence for one month.

VAN KIRK, HARRY H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for fifteen days.

The following named captains in the Medical Corps have been ordered to report at Manila, P. I., for examination for promotion: Carroll D. Buck, Roger Brooke, Jr., George P. Heard, George M. Ekwurzel, and R. P. O'Connor.

The following named first lieutenants in the Medical Corps have been relieved from their present duties in time to proceed to San Francisco, Cal., and sail on September 5th for service in the Philippines: Mahlon Ashford, Edward G. Huber, Rozier C. Bayly, Thomas F. Leary, Robert W. Kerr, and William S. Shields.

The following named medical officers in the Medical Corps have been relieved from duty in the Philippines Division, and will sail from Manila, P. I., on October 15th, for San Francisco: Major Samuel M. Waterhouse, Major William J. L. Lyster, Captain John A. Murtagh, and Captain Wilson T. Davidson.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 24, 1909:

ALLEN, D. G., Assistant Surgeon. Detached from the *Chalantango* and ordered to the Naval Hospital, Canacao, P. I.

HENRY, H., Pharmacist. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty at the Naval Hospital, Yokohama, Japan.

McMAHON, J., Pharmacist. Transferred to the retired list from July 19, 1909.

PHILLIPS, T. W. K., Pharmacist. Detached from duty at the Naval Hospital, Yokohama, Japan, and ordered home to await orders.

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 21, 1909:

AUSTIN, H. W., Surgeon. Upon being relieved by Surgeon James M. Gassaway, directed to proceed to Stapleton, N. Y., and assume command.

CARTER, H. R., Surgeon. Upon being relieved from duty with the Isthmian Canal Commission, about August 1, 1909, directed to proceed to Philadelphia, Pa., and assume charge.

COFER, L. E., Assistant Surgeon General. Directed to proceed to Reedy Island Quarantine Station upon special temporary duty.

CROLEY, THEODORE A., Pharmacist. Directed to report to the medical officer in command at New York for duty and assignment to quarters.

FOSTER, J. P. C., Acting Assistant Surgeon. Granted twenty-six days' leave of absence from July 17, 1909.

GASSAWAY, JAMES M., Surgeon. Upon being relieved by Surgeon H. R. Carter, directed to proceed to San Francisco, Cal., and assume command.

GLENNAN, A. H., Assistant Surgeon General. Granted twenty-eight days' leave of absence from July 20, 1909.

MCCLINTIC, T. B., Passed Assistant Surgeon. Directed to proceed to Norfolk, Va., upon special temporary duty.

O'REILLY, W. J., Acting Assistant Surgeon. Granted ten days' leave of absence from July 27, 1909.

PORTER, JOSEPH Y., Quarantine Inspector. Directed to inspect Florida quarantine stations from time to time during present season.

SWEET, ERNEST A., Passed Assistant Surgeon. Granted seven days' leave of absence from July 15, 1909, under paragraph 191, Service Regulations.

TROTTER, F. E., Passed Assistant Surgeon. Granted fifteen days' leave of absence from July 21, 1909.

VAN NESS, GEORGE I. JR., Pharmacist. Leave of absence granted June 3, 1909, for thirty days from June 10, 1909, without pay, amended to read twenty-seven days without pay.

WOLFE, J. ALBERT, Pharmacist. Directed to proceed to Cairo, Ill., and report to the medical officer in command for temporary duty and assignment to quarters.

Appointments.

Dr. Bruno L. Schuster appointed an acting assistant surgeon for duty at Port Huron, Mich.

Theodore A. Crolly appointed a pharmacist of the third class.

J. Albert Wolfe appointed a pharmacist of the third class.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Cal., July 26, 1909, to determine the fitness of Pharmacist W. H. Keen for promotion to the grade of pharmacist of class 2. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon J. D. Long, recorder.

Births, Marriages, and Deaths.

Died.

BEACH.—In Des Moines, Iowa, on Tuesday, July 13th, Dr. A. E. Beach, aged thirty-five years.

CHRISMAN.—In Pottsville, Pennsylvania, on Friday, July 9th, Dr. George S. Chrisman, aged sixty-seven years.

CONNER.—In Philadelphia, on Friday, July 23rd, Dr. William Conner, aged fifty-nine years.

EMMERT.—In Atlantic, Iowa, on Thursday, July 15th, Dr. Joseph M. Emmert.

FISH.—In Nicholasville, Kentucky, on Monday, July 19th, Dr. William H. Fish, aged fifty-seven years.

FOX.—In La Grange, Illinois, on Wednesday, July 14th, Dr. George Marshall Fox, aged eighty years.

HARRINGTON.—In Bellevue, Pennsylvania, on Thursday, July 15th, Dr. James C. Harrington, aged seventy-two years.

HIGGINS.—In Boston, on Friday, July 6th, Dr. Mary Higgins, aged seventy years.

HODGE.—In Hudson, New York, on Wednesday, July 14th, Dr. Frank Hodge, aged seventy-five years.

HOLDEN.—In Newark, N. J., on Monday, July 19th, Dr. Edward Holden, aged seventy-one years.

JACOB.—In Cincinnati, Ohio, on Monday, July 19th, Dr. Ernest Jacob, aged forty-five years.

MARVIN.—In South Bend, Indiana, on Saturday, July 17th, Dr. John I. Marvin, aged seventy-seven years.

MORTON.—In Long Beach, California, on Sunday, July 18th, Dr. Bowditch Morton, of New York, aged fifty years.

PARKHILL.—In Hornell, New York, on Tuesday, July 20th, Dr. Clair Parkhill, aged sixty-seven years.

ROBBINS.—In Quincy, Illinois, on Monday, July 19th, Dr. Joseph Robbins, aged seventy-five years.

STRAWN.—In Philadelphia, on Friday, July 16th, Dr. Joseph Strawn, aged sixty-six years.

USHER.—In Sicily Island, Louisiana, on Saturday, July 10th, Dr. John Dudley Usher, aged seventy years.

VOIGT.—In Pittsburgh, on Saturday, July 10th, Dr. Charles H. Voigt, aged sixty years.

WARD.—In Bad Nauheim, Germany, on Monday, July 19th, Dr. Aaron Condit Ward, of Orange, New Jersey, aged forty-eight years.

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Original Communications.

PRELIMINARY REMARKS ON THE BACTERIOLOGY OF GONORRHOEA.*

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and THURSTON H. DEXTER, M. D.,
Brooklyn, N. Y.,

Pathologist of the Methodist Episcopal, Williamsburg, and Bushwick Hospitals; Associate Physician, Brooklyn Hospital.

Ever since Neisser's discovery of the gonococcus in 1879, and the abundant corroboration shortly following, it has been a well established fact that gonorrhoea is caused by and cannot exist without the specific organism.

It is also a well established and well known fact that it has certain characteristics, to wit: within certain limits it has a definite known period of incubation. With possible experimental inoculations as an exception, it attacks only the human race. It has a characteristic morphology, occurring as a biscuit shaped diplococcus, extremely small, and with an extremely fine fissure between the two halves of the organism. It may exist either intracellular or extracellular with a predilection, however, for taking up its habitat within the leucocytes and epithelial cells. It has certain well defined staining and counterstaining peculiarities which aid us in distinguishing it from other pathogenic organisms. This distinction, however, is not as clearly defined as is ordinarily believed. It is extremely tenacious of life and activity within the body, and has only feeble resisting powers without the body, sufficient however, to permit of its being transmitted through the medium of clothing, etc., from one individual to another.

Now, in our opinion, there are several other equally well established though less known features, viz.: The bacilli grow readily on suitable culture media outside of the body; they may be easily obtained in pure culture; they may be obtained from the genitourinary tract in pure culture in cases where there are no other apparent subjective or objective symptoms; that gonorrhoea is essentially a local disease; that the gonococcus does not elaborate a soluble toxine, and that therefore there can be no true antitoxine; that it does elaborate an endotoxine; that when systemic invasion with metastasis does occur, it must be in the nature of a bacteraemia, and the pathological condition of any organ involved must depend upon the actual presence of the organism. Most of these points are generally

accepted facts. A few assertions are made in the face of excellent authority to the contrary, and it is the purpose of this paper to note a few case records bearing on these points and place them in evidence for what they are worth, and, at the same time, to point out the methods which we have at the present time of distinguishing the gonococcus from other organisms which closely resemble it in morphology, staining, and cultural peculiarities.

Before proceeding to the discussion of these cases, we wish to call attention to a few other features of this disease and its specific organism which are poorly understood, if, in fact, they are understood at all.

It has been said that gonorrhoea is a self limited disease, and that those patients who become chronic and difficult to cure do so because of unhygienic living and meddlesome treatment. We doubt this. We see no good reason why patients with gonorrhoea untreated should ever get well. On the contrary we can see very excellent reasons why many patients with gonorrhoea even if well treated never get well. We have been told that in the German army gonorrhoea is treated by placing the patient in bed on a milk diet with saline purgation and no other treatment, and that practically all patients get well in from four to six weeks. We do not know whether this is true, in fact, we shall doubt it until we have seen authentic records to that effect. Nevertheless, it is a fact that some, perhaps many patients, do recover with practically no treatment, and the question presents itself why do they get well? As we have noted before, there can be no typical gonococcus antitoxine. It has been shown, however, by experimental inoculation and otherwise that there can be and is developed in the blood serum a substance which in some way increases the resistance of the organism to the germ. This substance, as we understand it, acts by stimulating the leucocytes to phagocytic action in one of two ways, either by acting directly on the leucocytes themselves in such a way as to stimulate their phagocytic properties, or by acting on the germ and rendering it more susceptible to ingestion and digestion by the leucocytes. Now, it would seem to us that in acute infections with an active hyperaemia, abundant local leucocytosis and free discharge, the cases might go on to cure with or without treatment by virtue of the natural or artificially stimulated phagocytosis. In chronic cases, however, where there is no great degree of hyperaemia or local leucocytoses, it seems to us that the tide of battle is apt to favor the germ. In metastatic affections where the number of organisms is relatively few, the reaction decided, the local hyperaemia and local leucocytoses pronounced, it can be readily understood why the conditions

*Read before the Brooklyn Pathological Society, May 13, 1909.

should proceed to a natural cure, and reasoning along the same lines, it can be readily understood why it is in this class of patients that serum and vaccine treatment has accomplished its only results. We doubt very much if any form of organotherapy ever accomplishes very much in gonorrhœa of the genital tract, unless, and once more reasoning along the same line, that simultaneously with the administration of the vaccines some method is adopted of setting up an acute inflammatory reaction. A plan of treatment along this line might seem well worthy of a trial, and considering, as Finger demonstrated, the gonococcus cannot subsist in a temperature of 104° F. or over for a greater period than six hours, it would seem plausible that acute gonorrhœal infections confined to the anterior urethra might be successfully treated by the local application of heat to 104° F., or over, thereby favoring a local leucocytosis and incidentally retarding or absolutely preventing the further development of the germ by virtue of the heat itself.

The questions are constantly arising, why it is that the gonococcus may become imbedded in the tissues, producing in some cases exacerbations and remissions or even intermissions of trouble, in some cases a constant more or less palpable evidence of trouble, and in other cases apparently causing no trouble at all. Why it is that some men marry with the distinct local evidence of their disease, and have never infected their wives, and while others, who might pass as cured, will, at the first approach, infect their wives with the most virulent type of infection. These and many others are questions which cannot be satisfactorily answered. Of course all this latter is along the line of speculation, but it is interposed merely for the purpose of emphasizing the fact that in this disease, as in many others, there are many problems still unsolved.

Now, it has been estimated that eighty per cent. of all gonorrhœas invade the posterior urethra. Personally, we think this percentage a little low. However, the practical part of it is that a very large majority of patients suffering from chronic gonorrhœa, have in addition to whatever lesion they may have in their anterior urethra, some involvement of their posterior urethra, prostrate, and seminal vesicles. We shall not consider in this paper any of the various lesions of the anterior urethra. We believe it is the custom of most genitourinary men to diagnose gonorrhœa of the prostate and seminal vesicles by the history, by the appearance of the urine (coma shreds, cloud in the second glass, etc.), palpation by the rectum, the appearance of the expression urine, and the presence of pus and occasionally gonococci in the expressed smear. It is also the custom to discharge these patients as cured when the urine is clear, palpation is negative, and the smear contains no gonococci, and only an occasional pus cell, arbitrarily not more than four or five to any one field. Several months ago it occurred to us that this was rather uncertain and unscientific. There is no smear thus obtained in which we cannot demonstrate an occasional polynuclear leucocyte, and it would hardly seem proper for us to declare an arbitrary limit below which the specimen shall be declared free from pus and above which it shall be considered infectious. Accordingly, we determined to depend upon cultures for our diagnoses with the following results:

We were confronted from the beginning with unusual difficulties owing to the fact that the literature upon the subject is scanty; and that the problem of distinguishing the gonococcus from other organisms which closely resemble it, is an extremely complex one. A brief résumé of the literature on the subject up to the present day will illustrate some of the difficulties. The accepted characteristics of the gonococcus are that it is a biscuit shaped diplococcus which is Gram negative. It never occurs in chains, which is another characteristic, but occurs in groups, especially in groups of fours. It takes basic stains, but is readily decolorized by alcohol and acids. Finger in his latest German edition, says that a Gram negative diplococcus, which is not the gonococcus, is found in the urethra of normal individuals and in individuals infected with gonorrhœa in 4.6 per cent. of cases, but that the presence of a Gram negative diplococcus in the urethra is positive proof of gonorrhœa in 95.35 per cent. of cases. There is also a Gram positive diplococcus which may be recovered from the normal or gonorrhœal urethra in a fairly large percentage of cases. The gonococcus is to be distinguished from other germs by its morphology, its staining and cultural characteristics, and by the results of successful inoculation. The morphology and staining peculiarities have been noted before, and are pretty generally understood, but these two properties by no means serve to positively identify the organism as Finger has clearly shown, and the result of our investigation has led us to believe that the possibility of error is even greater than would be inferred from Finger's writings on the subject, and unless other staining peculiarities are developed, we must depend upon the results of culture and possibly inoculations, to distinguish the gonococcus from other organisms which resemble it. It is generally understood that it is a difficult matter to obtain the gonococcus in pure culture. However, Finger, Neisser, Bumm, and others have for several years succeeded in obtaining pure cultures from the organisms, usually from the pus of acute gonorrhœa, using human placental blood serum as a medium. The growth has taken place in from twenty-four to thirty-six hours, appearing in surface growth as gray-white, slightly shining, dew drops, and after seventy-two hours presenting irregular margins, and these cultures have been successfully transplanted to simple nutrient agar, beef and pig serum agar, ascitic and cystic fluids, and peptone agar. They will grow only between the temperatures of 25° C. and 39° C., with an optimum of 36° C. In room temperature they will grow from twenty-four to thirty-six hours. They are very sensitive to heat and are destroyed absolutely by an exposure of twelve hours to a temperature of 39° C., and six hours to a temperature of 40° C. They will live and remain active in pus at the ordinary room temperature till the pus becomes thoroughly dry. They lose their virulence in water in from four to six hours.

Our first culture was made on July 23, 1908, and since that time we have made thirty-four cultures from fourteen patients. In all but five instances the cultures were made from expressed prostatic fluid from patients in whom there was some doubt as to the location of the gonorrhœal lesion, or in patients with known prostatitis, who have been subjected

to treatment and in whom it was reasonable to hope that a cure had been effected. In the twenty-nine prostatic cases, we obtained from cultures in twenty-one a Gram negative diplococcus having all the morphological characteristics of the gonococcus. Of these twenty-one cultures, sixteen were pure and five were mixed cultures. Of these five mixed cultures, three showed, in addition to the diplococcus, a bacillus growth, one a typical *Staphylococcus pyogenes aureus*, and one a Gram positive, biscuit shaped diplococcus and a long diplococcus. In the eight cultures in which a Gram negative diplococcus was not obtained, a Gram positive diplococcus was obtained in six cases, while in two there was only a bacillus growth. Only two of the Gram positive growths were pure cultures, the other four being mixed with a bacillus growth. In all but one of the cultures contaminated by a bacillus growth, the bacillus appeared late (after forty-eight hours) and was nonliquefying. In the one exception the bacillus appeared early (within twenty-four hours) and the medium was rapidly liquefied. Of the thirty-four cultures, eleven were made on Loeffler's beef serum media only, three were made on serum and transplanted to agar, fourteen were made on the beef serum and transplanted to agar and potato, five were made on beef serum and transplanted to potato only, one was made on beef serum and on the ascitic fluid peptone agar. Of the six cultures in which a Gram positive diplococcus was obtained, three were made on beef serum media and transplanted to potato, three were made on beef serum and transplanted to both potato and agar. Of the cultures in which a Gram negative diplococcus was obtained, twelve were made on beef serum only, eight were made on beef serum and transplanted to agar and potato media, two were made on beef serum and transplanted to agar only, one was made on beef serum and ascitic fluid agar.

Pus cells were found in the smears in all these cases varying from a minimum of two or three in fifteen to eighteen fields, to a maximum of sixty to ninety in one field, and the number of pus cells seemed to bear no relation to the rapidity of growth of the organism and the virulence of the culture. Clinically, those patients in whom a Gram negative diplococcus growing only on beef serum was demonstrated, presented other symptoms which suggested that they were not yet cured, whereas those patients in whom a Gram positive diplococcus was demonstrated, or in whom a Gram negative diplococcus growing on media other than beef serum was demonstrated were, so far as all other symptoms were concerned, cured. However, we have not so far been able to prove conclusively which of these diplococci are and which are not gonococci, nor do we think we have any means at our disposal of proving this other than by inoculation which we propose trying in the near future. In many of these cases in which a Gram negative diplococcus growing only on beef serum was demonstrated, the patients had no discharge, a clear urine and no other objective symptoms other than the cultural findings which would suggest the existence of a latent gonorrhoea. Of the five patients other than those suspected or known to be suffering from a gonorrhoeal prostatitis, one was taken from the pus of an acute gonorrhoeal urethritis in which great

numbers of Gram negative intracellular diplococci were shown in the smear. In this case the culture was made on beef serum, and there was no growth of a diplococcus, but there was a growth of the bacillus which liquefied the medium. This bacillus was successfully transplanted to agar. There was no growth of diplococci on the transplanted culture. One was taken from the discharge of the patient suffering from acute gonorrhoea of five days' duration who had been treated by injections of hydrogen peroxide and in whom the smear showed no diplococci. In this case there was a growth of two Gram negative diplococci on beef serum, which was successfully transplanted to agar and potato. One was taken from the discharge of the same patient six days later at which time smear showed numerous Gram negative diplococci, both within and without the cells. In this case there was a growth of Gram positive with a few Gram negative diplococci on serum. The other two cultures were made from the same patient, a man who had never had any venereal disease, but who suffered from a chronic posterior urethritis due to masturbation. One culture was taken in beef serum from his expressed prostatic fluid. There was a growth of the Gram negative diplococcus on beef serum, and also on agar and potato. The smear from this same case showed many fields containing from two to seven polymorphonuclear neutrophils. The other culture was taken from the anterior urethra of this same patient and showed a growth of the *Staphylococcus albus*. It is interesting to note at this point that the posterior urethra is normally sterile.

One of these cases for the purposes of illustration we wish to report in detail:

The patient, male, E. L. C., thirty-one years of age, born in the United States, married, had gonorrhoea at twenty-two which lasted four months and was cured. Next attack at twenty-five, which lasted four months and was cured. The last attack in June, 1906, following exposure by four days, was treated by another physician with sounds, prostatic massage, irrigations, etc., and the patient was discharged as cured on January, 1907. From that time until he was married in June, 1908 (one and a half years) he had no intercourse, drank freely, and had no symptoms referable to his genitourinary tract, no discharge, and clear urine. He attempted intercourse on his wedding night; there was no penetration, but he had an emission. The following night was a repetition of the first. Five days after his wedding his wife was attacked with an acute Bartholinitis, from which one week later the Gram negative diplococcus, to all apparent purposes the gonococcus, was obtained. He presented himself to us for examination and treatment on July 28, 1908. He had no symptoms. Examination showed external genitals normal and well developed, the meatus ample, no discharge, urine clear, examination of urethra with bulb negative, prostate and seminal vesicles normal to the touch. Examination of the expressed secretion from his prostate: Slide preparations showed only a few pus cells, many fields containing none, and but a few containing more than three or four. A few squamous epithelial cells were present. Cultures on blood serum showed a pure culture of a Gram negative diplococcus, the first colony appearing in about eighteen hours. He was placed on prostatic massage on full bladder.

His examination October 10, 1908, was negative except prostatic secretion. Slide preparations showed numerous pus cells six to thirty to a field. Blood serum cultures showed a pure growth of a Gram negative diplococcus in twenty-four hours.

Examination on November 20, 1908: Slide preparations showed most of the field bare of pus cells, some fields had from two to six, and one field had nine, no bacteria. Culture showed a pure growth of a Gram negative diplococcus in twenty-four hours.

January 16, 1909: Examination was negative except for prostatic secretion. Slide preparations showed no bacteria, very few pus cells, many fields had none, in other fields the numbers varying from two to five. Culture from beef serum showed a Gram negative diplococcus in twenty-four hours. Transplanted to bouillon agar the same organism was obtained in less than thirty-six hours. Another culture taken from the same patient on the same date in blood serum showed a bacillus staining irregularly, having two or three granular bodies or spores Gram positive.

Examination of February 20, 1909: Negative except prostatic secretion, smear sterile, pus cells maximum of three to a field, culture on blood serum on agar and on potato showed a Gram negative diplococcus. Patient tentatively discharged to report later for subsequent cultures.

Our conclusions are as follows: That there are numerous cases of uncured gonorrhoea which have no subjective symptoms or apparent objective symptoms other than those which can be determined by cultures made from secretions from the genitourinary tract. That freedom from pus cells in the expressed smear from a prostatic secretion is by no means an evidence of cure of chronic prostatitis, nor is the presence of pus cells in a smear from the expressed secretion an indication of gonorrhoeal infection of that gland, nor is the presence of a Gram

negative diplococcus in the smear of this secretion a positive indication of the existence of gonorrhoea of the prostate. That at present we have no means at our disposal by which we can positively assure a patient that he is cured of his gonorrhoeal prostatitis. That our best prospects of determining that fact lie along the line of perfecting methods of distinguishing the gonococcus from other organisms which so closely resemble it, and which may be accomplished by further experimental work with various culture media and proved by experimental inoculations. That so far as our work has carried us up to the present time, the growth of the Gram negative diplococcus on blood serum only and which cannot be transplanted to other culture media is strongly significant of the gonococcus, whereas Gram positive diplococci, or Gram negative diplococci growing on various other media such as plain agar, potato, etc., are doubtful. That the number of cases of uncured and incurable gonorrhoeal prostatitis is far in excess of what most of us are ready to believe.

A schematic report of cases is appended:

Date.	Case No.	History.	Discharge.	Urine.	Urethra.	Rectal examination.
July 23, 1908.....	1 1	Single. Thirty-three. No previous venereal history. Present attack began four months ago, from exposure of five days. Had been treated with various internal remedies	Slight morning drop	I. Clear, moderate short, thick shreds II. Clear	Negative to bulb	Prostate slightly enlarged particularly left lobe
September 1, 1908.	2 2	Single. Thirty-one. Two previous attacks of gonorrhoea. Last attack two years ago. Was treated six months. Discharged cured, apparently well one and one half years. Married and infected wife	None	Clear	Negative	Negative
October 1, 1908...	2 3	Single. Twenty-six. Gonorrhoea seven years ago, lasted six to seven weeks. Thought he was cured. Past five weeks sacral ache	None	Clear	Stricture 23 in bulb	Prostate and vesicle normal to touch
October 10, 1908...	3 4	Single. Twenty-six. Gonorrhoea seven years ago, lasted six to seven weeks. Thought he was cured. Past five weeks sacral ache	Occasional morning drop	I. Clear, numerous comma shreds II. Clear	Stricture 23 in bulb	Prostate and vesicle normal to touch
November 7, 1908.	2 5	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	None	Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
November 7, 1908.	3 6	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	Occasional morning drop	I. Clear, moderate comma shreds II. Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
November 28, 1908	2 7	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	None	Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
November 28, 1908	4 8	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	Moderate mucopurulent on pressure	I. Slightly cloudy; numerous long and short shreds II. Clear; few comma shreds	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
December 5, 1908.	5 9	Married. Forty-one. Gonorrhoea fourteen years ago. Was cured. Married one year later. Two healthy children. Wife had persistent leucorrhoea. Contracted present trouble four months ago following exposure by one week. Was treated with internal medication	Occasional mucous drop. Examination showed drop on pressure	I. Clear; numerous long shreds; few comma shreds II. Clear	Stricture 25 3" back and in bulb	Prostate and vesicle somewhat large and soft
December 16, 1908	1 10	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	None	Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
January 4, 1909...	1 11	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	None	Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
January 10, 1909...	5 12	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	Still had drop	I. Clear, moderate comma shreds II. Clear, occasional comma shreds	Stricture 22 in bulb	Prostate and vesicle normal to touch
January 16, 1909...	6 13	Widower. Thirtiesix. Had gonorrhoea at twenty-one which lasted three or four months. Thought he was cured, although there had been occasional drop ever since. Exacerbation following exposure of twenty-four hours, two months ago. Free discharge since	Moderate mucopurulent	I. Slight cloudy, long and short shreds II. Clear	Negative	Negative to touch
January 16, 1909	2 14	Single. Twenty-four. Two previous attacks five and twelve years ago. Was apparently cured. Contracted present trouble six weeks ago. Had had rather indifferent treatment	None	Clear	Stricture 22 in bulb	Moderate infiltration of upper border of prostate, particularly right side; thickening around right vesicle
January 31, 1909	7 15	Married. Thirtiesix. No previous venereal history; outside exposure eight years ago, three days ago contact and discharge	None	I. Very cloudy II. Clear	Not examined	Negative

Date.	Case No.	Series No.	History.	Discharge.	Urine.	Urethra.	Prost. examination.
January 31, 1909...	8	16	Single. Twenty-five. Gonorrhoea twice, two years and one year ago. First lasted six months, second lasted three months. Had had occasional morning drop for the past two months. No exposure.	Slight mucous discharge on pressure.	I. Clear, numerous shreds, long and short. II. Clear.	Stricture 24 in. halo.	Negative to touch.
February 3, 1909...	1	17	.....	None	Clear.	.....	Prostate and vesicles negative to touch.
February 4, 1909...	5	18	.....	Occasional drop	I. Clear, one or two shreds. II. Clear.	.....	Prostate and vesicles large and soft.
February 7, 1909...	9	19	Single. Thirty-six. No venereal history. Never had intercourse. Frequency and urgency of urination. Nocturnal emissions. Neurasthenic.	None	Clear.	Negative. Was not endoscoped.	Negative to touch.
February 14, 1909...	9	20	.....	None	Clear.	.....	.....
February 20, 1909...	2	21	.....	Occasional drop	II. Clear, few comma shreds.	.....	Negative.
February 20, 1909...	3	22	.....	.....	II. Clear.	.....	.....
February 28, 1909...	10	23	Single. Twenty-nine. Gonorrhoea at seventeen. Lasted thirteen months. Has no discharge, but doubts if he was cured. Has marked sacral ache and feeling of fullness in rectum.	None	Clear.	Negative.	Prostate large and soft. Vesicles distended.
February 28, 1909...	6	24	.....	Occasional drop	I. Slight cloud, numerous shreds, long and short.	.....	Negative.
March 1, 1909...	8	25	.....	.....	Clear.	.....	Negative to touch.
March 1, 1909...	1	26	.....	None	Clear.	.....	Negative.
March 1, 1909...	5	27	.....	Occasional morning drop	I. Clear, one or two long shreds. II. Clear.	.....	Prostate negative to touch.
March 29, 1909...	11	28	Married. Thirty-one. Gonorrhoea seven years ago. Lasted two months, was apparently cured. One year ago exacerbation with no exposure, lasted two months, was apparently cured with argisol injections. Six months ago another exacerbation. No exposure. Had trouble since.	Slight drop on pressure.	I. Clear, one or two short shreds. II. Clear.	Negative.	Prostate moderately enlarged and soft.
March 31, 1909...	12	29	Single. Thirty. Gonorrhoea five years ago. Was apparently cured. Contracted what appeared to have been an acute gonorrhoea five days ago. Had been using hydrogen peroxide injections.	What appears like a mucous discharge on pressure.	I. Slightly cloudy. II. Clear.	Negative.	Prostate and vesicles negative.
April 6, 1909...	12	30	.....	Profuse	I. One and two cloudy. II. Cloudy.	.....	.....
April 10, 1909...	1	31	.....	None	Clear.	.....	Negative.
April 11, 1909...	13	32	Married. Thirty-four. Had gonorrhoea nine years ago; lasted six weeks, and was entirely cured. Two and one half years ago contracted present trouble. Had been under our treatment for past eleven months.	Occasional morning drop	I. Clear, occasional comma shred. II. Clear, occasional comma shred.	Negative.	Negative.
April 11, 1909...	14	33	Single. Eighteen. Contracted gonorrhoea six months ago, irregular treatment and exacerbations and remissions. No discharge for one month.	None	I. Clear, one or two fine shreds. II. Clear.	.....	Slight hard lump in left vesicle.
April 24, 1909...	4	34	.....	None	I. Clear, few comma shreds. II. Clear.	.....	Negative.

Date.	Case No.	Series No.	Expressed content, slide preparation x 1,000.	Primary cultures, blood serum, 37° C.	Secondary cultures, peptone agar, 37° C.	Secondary cultures, potato 37.5° C.	Remarks.
July 23, 1908...	1	1	.....	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus.	.....	.....	Primary inoculation using agar released the same Gram negative diplococcus as did also ascitic fluid agar.
September 1, 1908...	2	2	No bacteria. Pus cells rare. Many fields containing none, and but a few containing more than three or four pus cells. A few squamous epithelium cells.	In about eighteen hours a pure growth of a Gram negative diplococcus having the morphological characteristics of the gonococcus.	.....	.....	.....
October 1, 1908...	2	3	No bacteria. Numerous pus cells from six to thirty to a field.	In about twenty-four hours a pure growth of a Gram negative diplococcus having the morphological characteristics of the gonococcus.	.....	.....	.....
October 10, 1908...	3	4	No bacteria. A few pus cells. The maximum number was six. Many fields showed no pus cells.	In about seventy-two hours a pure growth of a Gram negative diplococcus having the morphological characteristics of the gonococcus.	.....	.....	.....

Date.	Case No.	Series	Expressed content, slide preparation x 1,000.	Primary cultures, blood serum, 37.5° C.	Secondary cultures, peptone agar 37.5° C.	Secondary cultures, potato 37.5° C.	Remarks.
November 7, 1908.	2	5	No bacteria; pus cells average about thirty to a field (0. im)	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus.			
November 7, 1908.	3	6	No bacteria. Pus cells from five to twenty to a field	In from twenty-four to thirty-six hours a Gram negative diplococcus morphologically resembling the gonococcus.			
November 28, 1908	2	7	No bacteria. Pus cells rare. Most fields bare of pus cells, some have from two to six and one field contained nine pus cells	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus.			
November 28, 1908	4	8	A few biscuit shaped diplococci. Some intracellular were demonstrated. Loewler's alkaline methylene blue stain used. Many pus cells from three to thirty-two to a field	Within forty-eight hours a Gram negative diplococcus morphologically resembling the gonococcus.			
December 5, 1908.	5	9	No bacteria. Pus cells numerous, about fifty to a field	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus.			
December 16, 1908	1	10	No bacteria. Pus cells numerous, about ninety to a field	Within forty-eight hours a liquefying bacillus and a few Gram negative diplococci, morphologically resembling the gonococcus	Within forty-eight hours a growth of the bacillus only occurred	Within forty-eight hours a growth of the bacillus only occurred.	
January 4, 1909...	1	11	No bacteria. Pus cells sixty to one hundred and twenty to a field	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus	No growth	No growth.	
January 10, 1909..	5	12	No bacteria. Very few pus cells, many fields none at all, others contained one or two cells. In a few fields the maximum of five was reached. A few squamous epithelium cells	In twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus. In forty-eight hours or more a bacillus developed not unlike in appearance the diptheria bacillus, the two or three granules along its body staining more deeply than other parts and occasionally being Gram positive			The bacillus was Gram negative organism, although occasionally the two or three granules referred to were Gram positive. The media was not liquefied.
January 10, 1909..	6	13	No bacteria; pus cells rare; in eighteen fields a total of only three pus cells was observed	Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus. In forty-eight hours a typical and luxuriant staphylococcus pyogenes aureus developed in same tube.			
January 16, 1909..	2	14	No bacteria, very few pus cells. Many fields have none. In other fields the numbers vary from two to five. A few squamous epithelium cells	Tube A: Within twenty-four hours a Gram negative diplococcus morphologically resembling the gonococcus. Tube B: In forty-eight hours a bacillus staining irregularly like the colon bacillus having two or three dark bodies or granules. It was Gram negative, but occasionally the deeply staining bodies were Gram positive	Tube A: In less than thirty-six hours a Gram negative diplococcus morphologically resembling the gonococcus. Tube B: The bacillus developed in less than thirty-six hours		The bacillus was not liquefying.
January 31, 1909.	7	15	Active discharge acute. Fields crowded with intracellular and extracellular forms of Gram negative diplococci of biscuit form. Fields crowded with pus cells	Examined in about forty-eight hours (although no apparent growth), a biscuit shaped Gram negative diplococcus with broken down pus cells. On fourth day medium semiliquid and bacilli as described previously	Under the bacteria present obtained		The bacillus is on with two or four Gram positive spots or granules; or other stages of development it occurs as wholly and evenly Gram negative with Loewler's methylene blue these two or four granules stain with slight depth of intensity.
January 31, 1909.	8	16	No bacteria. Thirty to sixty pus cells to a field. A few squamous epithelial cells.	Tubes A and B in less than eighteen hours showed a Gram negative diplococcus, biscuit shaped, resembling the gonococcus	From tubes A and B in less than thirty-six hours a small Gram negative diplococcus, biscuit shaped but considerably smaller than the usual serum growths obtained in		
January 31, 1909.	9	17	No bacteria. Pus cells few, many fields none. Maximum seven cells	In eighteen hours or less a Gram negative, biscuit shaped diplococcus	No growth	No growth.	
January 31, 1909.	10	18	No bacteria. Pus cells few, many fields none. Others from four to ten cells	In eighteen hours or less a Gram negative, biscuit shaped diplococcus, with quite uniform tetradococcus grouping	Same	Same	
January 31, 1909.	11	19	No bacteria. Pus cells rare, many fields had none, others showed from two to seven cells	Within twenty-four hours a Gram negative, biscuit shaped diplococcus	Same	Same	Never had venereal disease.
January 31, 1909.	12	20	No bacteria. Pus cells rare, many fields had none, others showed from two to seven cells	Within or about forty-eight hours (incubated in waister pocket), a diplococcus, biscuit shaped	Same	Same	Culture from anterior urethra developed in waister pocket, about forty-eight hours.

	Case No.	Series No.	Expressed content, slide preparation x 1,000.	Primary cultures, blood serum, 37.5° C.	Secondary cultures, peptone agar 37.5° C.	Secondary cultures, potato 37.5° C.	Remarks
ry 20, 1909.	2	21	No bacteria. Almost all the fields are free from pus cells. A few have one, two or three pus cells	Within twenty-four hours Gram negative, biscuit shaped diplococcus	Same	Same.	
ry 20, 1909.	3	22	No bacteria. Pus cells rare. Many fields contain none. Others have from one to three cells	Within twenty-four hours Gram negative, biscuit shaped diplococcus and a Gram negative bacillus (previously described) containing in some stages of growth deeply stained gram positive granules and in other stages Gram negative granules.	Within thirty-six hours same	Within thirty-six hours same.	
ry 28, 1909.	10	23	No bacteria. Pus cells five to seven in a field	Within twenty-four hours a Gram positive, biscuit shaped diplococcus and a small Gram negative bacillus with weakly positive staining granules usually at ends of bacillus and two in number.		Within thirty-six hours same	
ry 28, 1909.	6	24	No bacteria. Pus cells absent in many fields, but are present in varying numbers to a maximum of thirteen cells in one field	Within twenty-four hours Gram positive, biscuit shaped diplococcus		Within thirty-six hours same	Discharged, tentatively cured.
ry 1, 1909.	8	25	No bacteria, no pus cells	Within twenty-four hours Gram positive, biscuit shaped diplococcus and a Gram positive bacillus in size and shape resembling the tubercle bacillus. Liquefied medium with production of warm, wet, hay odor		Within twenty-four hours same.	
ry 1, 1909.	1	26	No bacteria, pus cells absent from many fields, the maximum number to a field was three cells	Within twenty-four hours Gram positive, biscuit shaped diplococcus, and a Gram positive bacillus	Within thirty-six hours Gram positive, biscuit shaped diplococcus and a few Gram negative biscuit shaped diplococci	Within thirty-six hours a Gram positive, biscuit shaped diplococcus.	
ry 29, 1909.	5	27	No bacteria, pus cells profuse; twenty to one hundred to a field	Within eighteen hours Gram positive, biscuit shaped diplococcus, and a small Gram negative bacillus with Gram positive granules	Within twenty-four hours same	Within twenty-four hours same	Discharged, tentatively cured.
ry 29, 1909.	11	28	No bacteria, at rare intervals a pus cell	About eighteen hours Gram positive, biscuit shaped diplococcus and an occasional scattered group of Gram negative biscuit shaped diplococci. Also a few end to end diplococci	Within twenty-four hours a Gram positive, biscuit shaped diplococcus	Within twenty-four hours a Gram positive, biscuit shaped diplococcus.	
ry 31, 1909.	12	29	A small Gram negative bacillus at rare intervals. Pus cells profuse. Squamous epithelial cells numerous. A careful search revealed no diplococci	Tube A within twenty-four hours almost pure culture of Gram negative, biscuit shaped diplococcus. Few Gram negative bacilli	Within thirty-six hours same	Within thirty-six hours same.	
ry 6, 1909.	12	30	Active acute discharge. Gram negative biscuit shaped diplococcus in all the characteristic groupings of the gonococcus (intracellular and extracellular, bursting, etc.), pus cells profuse, squamous epithelial cells numerous	Tube A within forty-eight hours a Gram negative bacillus, during many fields it showed the development of two and occasionally three Gram positive granules. Tube B within forty-eight hours mostly a Gram positive diplococcus, biscuit shaped, and a few small collections of Gram negative biscuit shaped diplococci.			
ry 10, 1909.	1	31	No bacteria, an occasional pus cell	Within twenty-four hours a Gram positive, biscuit shaped diplococcus tending to group in chains		Within thirty-six hours same as in primary culture	Discharged, tentatively cured.
ry 11, 1909.	13	32	No bacteria, pus cells six to twenty in a field	Within twenty-four hours Gram negative bacillus with Gram negative and in some cases Gram positive granules, partially liquefied medium produced an odor like that of warm, wet hay	Within thirty-six hours same	Within thirty-six hours same.	Discharged, tentatively cured.
ry 11, 1909.	14	33	No bacteria, almost all fields were free of pus cells, occasional fields contained from one to six cells	Within twenty-four hours a Gram negative bacillus with Gram positive granules and some with small Gram negative granules taking the stain more deeply than other parts of the bacillus		Within thirty-six hours same	Rich in leukocytes developed twenty-four hours after examination. A few in sediment in a week.
ry 24, 1909.	4	34	No bacteria, most fields free of pus cells, some contained three to twenty-five cells	Within eighteen hours a Gram negative, biscuit shaped diplococcus	Within twenty-four hours same		

A STUDY OF THE LEUCOCYTES IN TROPICAL MALARIAL INFECTIONS.*

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Of recent years our attention has been called to the study of various tropical diseases. Our researchers and investigators have realized that in them we are dealing with peculiar manifestations often seen in our section of the country and until recently little understood. Since the marked increase of work in that direction new diseases and valuable information unthought of have been given to the medical profession.

During my service in the medical wards of the Charity Hospital my attention was repeatedly called to a group of malarial cases, which on account of their peculiar history and marked anaemia suggested to me a necessity for careful study. All these patients had seen recent service in and around Central America, the majority coming from Spanish Honduras and giving history of ague, but known, or called by physicians and laity of their locality, tropical anaemia.

Beginning with these observations I was able to follow nine cases in my wards. Subsequently I collected fifteen more; nineteen of the total I have observed personally, the others collected from the records of the Charity Hospital.

On careful study I was immediately impressed with the relative white blood count of such cases which showed a constant increase of the small lymphocytes; contrary to previous teachings on malaria, coupled also with a very erratic form of plasmodium.

The mosquitoes are very numerous in the states of Central America, and the ordinary layman at work has no protection from their bites. Entering Central America as healthy individuals, some would receive the infection early, others later. They would begin to have chills and fever, associated with a severe anaemia and rapid loss in flesh, some losing forty to fifty pounds in the course of a few weeks showing that a severe toxæmia existed. This anaemia is very marked, and in the earlier cases led me to believe that patient had primary anaemia. Only one out of the number had any previous malarial infection, this being three years previous to the present infection, the majority of the patients being very healthy and hearty individuals before infection.

A great amount of physical depression existed and in the most virulent cases some mental hebetude. During their stay in the tropics they would usually try by antimalarial treatment to relieve their symptoms. Even in those successful, this peculiar depression and anaemia would continue.

In every case, regardless of the time or length of infection, this clinical picture was always present.

From their history supported by observation, the return of the chills was not as periodic and regular as in the ordinary forms of malaria, and very often

the chills would be absent, supplanted by a severe headache and other symptoms of toxæmia.

From a study of the fever charts from these cases, very interesting and instructive data was obtained, for, from Cases III, IV, VI, VII, X, XII, XVI, XVIII, XX, all of which showed æstivoautumnal parasites in their blood; two (namely Cases III and IV) were distinctly remittent, whilst seven (namely Cases VI, VII, X, XII, XVI, XVIII, XX) were intermittent in character; showing conclusively that the æstivoautumnal parasite does not always produce a remittent type of fever. We also find that Cases IV, XII, XV, XVI, XX, represent the quotidian type, whilst Cases III, VI, VII, X, the tertian, and Case XVIII whilst the chart promised a tertian course, terminated as a quotidian.

A study of the fever charts from Cases II, IX, XIV, XIX, all having tertian parasites in their blood, showed nothing, but a typical intermittent course, one however, viz.: Case XIV, was probably a double tertian, as the chart shows us a daily rise. Of the so called mixed infections of tertian and æstivoautumnal or quartan and æstivoautumnal, I have been fortunate to be able to include in this series six undoubted cases.

Cases XI, XIII, XVII, XXIV, XXV, XXVIII, contained tertian and æstivoautumnal parasites. Cases XI, XIII, XXV were distinctly intermittent, Case XVII remittent, and from two Cases, XXIV and XXVIII I was unable to draw definite conclusions.

These features would not seem especially rare in themselves but when supported by a close study of the blood they form a very unique condition.

The blood findings were those of a marked secondary anaemia, associated with leucopenia, and the hæmoglobin ranged from thirty to seventy per cent.

The distinctive white blood count mentioned before is herewith tabulated, as is also the type of parasite found in each case.

	Small lymphocytes.	Large lymphocytes.	Neutrophils.	Eosinophiles.	Transitionals.	Form of parasite.
Case I—						
" II—A. T.	41	10	46	1	2	Tertian parasite.
" III—W. S.	35	10	53	1	1	Æstivoautumnal parasite.
" IV—W. C.	37	12	51	0	0	Æstivoautumnal parasite.
" V—						
" VI—J. E.	48	14	30	0	8	Æstivoautumnal parasite.
" VII—F. L.	35	10	55	0	0	Æstivoautumnal parasite.
" VIII—						
" IX—A. K.	35	8	57	0	0	Tertian parasite.
" X—H. K.	38	8	52	2	0	Æstivoautumnal parasite.
" XI—P. O.	44	6	45	4	1	Æstivoautumnal and tertian parasite.
" XII—J. M.	47	3	40	7	2	Æstivoautumnal and tertian parasite.
" XIII—H. L.	49	2	47	2	0	Æstivoautumnal and tertian parasite.
" XIV—L. R.	33	8	59	0	0	Tertian parasite.
" XV—						
" XVI—I. L.	31	7	61	1	0	Æstivoautumnal parasite.
" XVII—W. M.	45	5	45	0	2	Æstivoautumnal and tertian parasite.
" XVIII—E. T.	35	10	50	5	2	Æstivoautumnal parasite.
" XIX—A. M.	41	12	42	2	3	Tertian parasite.
" XX—E. T.	39	6	54	1	3	Æstivoautumnal parasite.
" XXI—E. L.	32	10	55	2	1	Tertian parasite.
" XXII—D. T.	36	18	36	6	4	Æstivoautumnal parasite.
" XXIII—						
" XXIV—P. O.	36	14	43	0	7	Tertian parasite.
" XXV—A. D.	36	10	50	2	2	Tertian parasite.
" XXVI—						
" XXVII—						
" XXVIII—P. E.	54	16	30	0	0	Æstivoautumnal parasite.
" XXIX—						
" XXX—						
" XXXI—						
" XXXII—						
" XXXIII—						
" XXXIV—						
" XXXV—						
" XXXVI—						
" XXXVII—						
" XXXVIII—						
" XXXIX—						
" XL—						
" XLI—						
" XLII—						
" XLIII—						
" XLIV—						
" XLV—						
" XLVI—						
" XLVII—						
" XLVIII—						
" XLIX—						
" L—						

*Read at the 44th annual meeting of the American Society of Tropical Medicine, held at the U. S. Naval Medical Station, Washington, D. C., April 16, 1920.

Summary.

In six cases, the blood of these patients showed the tertian parasite and in same specimen or in subsequent examinations, forms which resembled the æstivoautumnal type.

In five cases, tertian parasite.

In thirteen cases, æstivoautumnal parasite.

AVERAGE DISTINCTIVE WHITE BLOOD COUNT.

	Normal blood count. (Cabot.)	Common malarial count. (De Casto.)	Tropical anemia. (Talbot.)
Small lymphocytes	20 to 35%	15%	39.5%
Large lymphocytes	4 to 8%	15%	9.2%
Neutrophils	62 to 70	67%	48
Transitional	0	2	1.8
Eosinophiles	1 to 4%	2%	1.5%
Basophiles	1 to 3%	0	1.0

Synopsis of Cases.

CASE II.—A. T., age thirty-five, native of Maryland, laborer, admitted December 4, 1906. Never had any previous

during which time he had had chills and fever for which he had taken quinine frequently before admission.

Physical examination: Patient anæmic; heart normal; lungs normal; spleen and liver both enlarged and palpable; urine normal.

RELATIVE WHITE BLOOD COUNT.

	Following quinine.	Before quinine.
Small lymphocytes	16	48
Large lymphocytes	15	14
Neutrophils	65	30
Eosinophiles	2	0
Transitional	2	8

No ova in stools.

CASE VII.—P. L., native of Germany, admitted November 25, 1907, no history of any previous malaria. Some three weeks ago previous to admission while in Central America, began having chills and fever, the chills occurring every third or fourth day.

Physical examination: Patient anæmic; heart normal; liver not enlarged.

CASE IX.—Age thirty-five, native of Germany, admitted

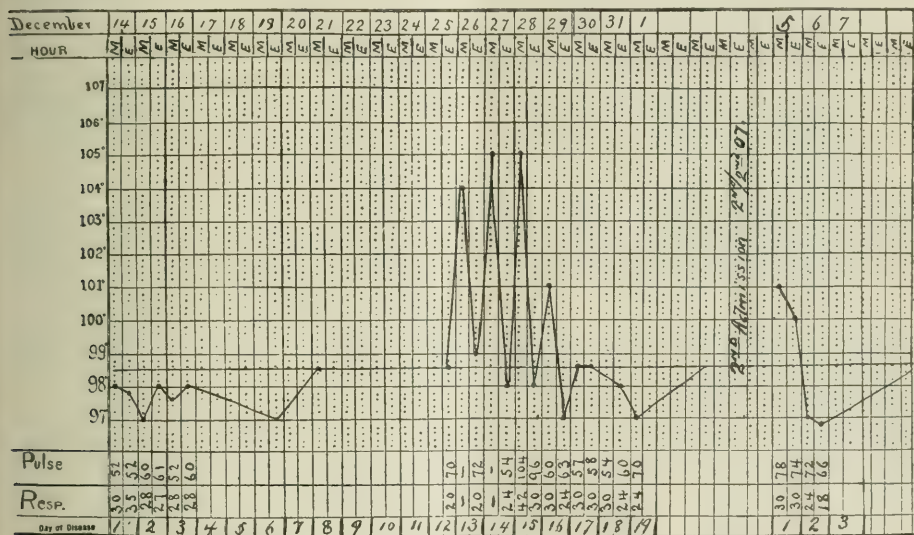


Chart 1.—Case XI.

malaria, entering Spanish Honduras May 4, 1906, remaining for two weeks, began having chills and fever which continued for six months.

Physical examination: Heart was enlarged, no murmur; liver dullness increased three quarters of an inch in mammary line; spleen was enlarged and easily palpable.

CASE III.—M. B., age twenty-four, native of Germany, sailor, admitted November 19, 1906. Never had any previous similar sickness, entering Spanish Honduras October 4, 1906, in two weeks began having chills and fever, sick for four weeks.

Physical examination: Heart, anæmic blow at the apex; liver, not palpable; spleen was enlarged and palpable, very smooth.

CASE IV.—W. C., age thirty-nine, native of Ireland, sailor, admitted November 26, 1906, very healthy as a boy and never having chills and fever previously, five days after entering Spanish Honduras received the infection, continuing for two months previous to admission.

Physical examination: Heart, no murmurs audible and not enlarged; liver enlarged and palpable; spleen was enlarged and palpable.

CASE VI.—J. E., age twenty-six, native of Honduras, admitted December 4, 1906, healthy up to present illness, had been living in Spanish Honduras for the past five months,

December 6, 1906. At twenty-two had chills and fever in the country; healthy as a child. Some nine weeks ago began having chills and fever irregularly in Spanish Honduras. Coming to United States some three weeks ago began having chills and fever every day.

Physical examination: Heart normal; patient anæmic; liver and spleen easily palpable and enlarged.

CASE X.—H. K., native of Mississippi, admitted December 11, 1906. Patient had never had any previous chills and fever. For past two months had been in Central America, when four weeks previous to admission he began having chills and fever, irregularly at first every day, later every two days.

Physical examination: Patient was anæmic; heart normal, spleen barely palpable, liver same.

CASE XI.—P. O., aged twenty-five, native of Ireland, admitted February 2, 1907, healthy young sailor, never had had any previous similar sickness. Entered Spanish Honduras four months ago, one week later he began having chills and fever which continued at irregular periods up to the time of admission.

Physical examination: Anæmic young male; heart enlarged, and palpable, liver negative, urine negative.

CASE XII.—J. M., aged twenty-three, native of Canada, admitted January 29, 1907. All diseases common to child-

hood, alcoholic, no previous similar sickness; some four months ago he entered Spanish Honduras; two months later he began having chills and fever, the paroxysms appearing every other day.

Physical examination: Heart, anæmic blow at the apex;

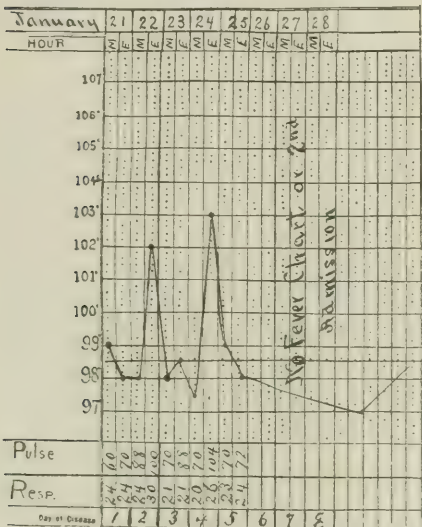


Chart 2—Case XIII.

spleen and liver enlarged and palpable; patient very anæmic in appearance; urine showed chronic interstitial nephritis.

CASE XIII.—H. L., age thirty-six, native of Canada, admitted January 1, 1907; healthy as a child, never having had malaria before. Some nine months ago he entered Spanish Honduras and one or two months later he began having chills and fever which continued very irregularly.

Physical examination: Patient was anæmic, heart enlarged with anæmic blow at the apex, liver and spleen enlarged and palpable.

RELATIVE WHITE BLOOD COUNT.

	Before Following quinine.	Before quinine.	After After quinine.
Small lymphocytes, ...	18	49	37
Large lymphocytes, ...	13	2	8
Neutrophils, ...	63	47	55
Eosinophils, ...	1	2	0
Basophils, ...	3	0	0
Transitionals, ...	2-100	0-100	0-100
	Tertian parasites.	Aestivoautumnal parasites.	

CASE XIV.—L. R., age twenty-one, native of Denmark, admitted October 25, 1907, ordinary diseases of childhood, no malaria, three months ago he entered Panama and some ten days later began having chills and fever, which continued very irregularly.

Physical examination was negative.

CASE XVI.—J. J., aged thirty-five, native of England, admitted October 25, 1907. Some three months ago he began having chills and fever in Colon, coming to this country the paroxysms continued.

Physical examination: Patient was anæmic, poorly nourished; skin yellowish; mucous membranes anæmic; heart negative; spleen enlarged; urine negative. Count made following quinine.

CASE XVII.—W. M., age thirty-six, native of Ireland, admitted October 25, 1907. Some five weeks previous to admission he began having chills and fever daily in Panama.

Physical examination: An anæmic, well nourished pa-

tient; sclera pale and yellow; mucous membrane pale; spleen palpable, one inch below costal border; abdomen tender.

RELATIVE WHITE BLOOD COUNT.

	9/18/07. After quinine.	10/15/07. Before quinine.
Small lymphocytes, ...	22	48
Large lymphocytes, ...	20	5
Neutrophils, ...	51	45
Transitionals, ...	7-100	2-100
	Aestivoautumnal parasite.	Tertian parasite.

CASE XVIII.—E. T., age twenty, native of Italy, admitted October 5, 1907. He had been living at Colon when he was taken sick with chills and fever; no interpreter obtained.

Physical examination: Patient was anæmic; skin yellowish; mucous membrane pale and anæmic; abdomen tender and painful; unable to palpate spleen.

CASE XIX.—A. M., age twenty-one, native of Spain, admitted October 18, 1907. Through an interpreter, it was learned that he had been down in Spanish Honduras and there taken with chills and fever.

Physical examination: Patient anæmic, skin and sclera very yellow; spleen enlarged and palpable; urine negative; no ova in stools.

CASE XX.—E. F., age eighteen, native of Tennessee, admitted September 13, 1907. Never had had any previous malaria; some months ago while working in Spanish Honduras he began having chills and fever; returning to the States he was well for two weeks when he began having a return of symptoms.

Physical examination: Well nourished young male; heart negative; rest negative.

CASE XXI.—H. L., age twenty-one, native of New York, admitted February 16, 1907. Some three years ago had had malaria, sick for two months. Six months ago he went to Spanish Honduras and after being there for two weeks began having chills and fever.

Physical examination: Young looking male; sclera and conjunctiva pale and anæmic; heart negative; spleen palpable and enlarged; liver enlarged; urine normal.

CASE XXII.—Dr. T. had been around the coast of Spanish Honduras and southern parts for several years having chills and fever.

Physical examination: Large, healthy looking male; heart normal; liver and spleen palpable; no ova found in stools after repeated examinations.

CASE XXIV.—P. O., age twenty-nine, native of Massachusetts, admitted January 14, 1908, no history of any previous malarial infection. Some two years ago he entered Spanish Honduras and one year and four months later began having chills and fever, which continued very irregularly; when patient came to the States had the chills every day.

Physical examination: Anæmic patient; heart normal; liver and spleen both enlarged and palpable; urine normal.

CASE XXV.—A. D., age twenty-one, native of Spain, admitted January 18, 1908. She lived in Spanish Honduras for three years when she began having chills and fever associated with loss in flesh and appetite.

Physical examination: Anæmic young female, well nourished; skin doughy and pale; heart enlarged and hæmic murmur at apex; liver and spleen enlarged, stools showed uncinariasis and trichocephalus dispar.

CASE XXVI.—Received the present infection in Spanish Honduras. Came to the hospital suffering from pains in various joints and back.

CASE XXVII.—Concise history lost, some months before admission while down in Spanish Honduras, he began having chills and fever which continued very irregular up to the time of admission.

CASE XXVIII.—P. E., age twenty-two, native of Sweden, admitted January 27, 1908. Very healthy as a child, and for the past four years had been a sailor. After living in Spanish Honduras for eight years, some four years ago he began to have chills and fever. First admission to the hospital December 21, 1907, when both aestivoautumnal and tertian parasites were found in his blood.

Physical examination: Anæmic young male; heart normal; spleen and liver enlarged and palpable; urine negative; no ova found in stools.

RELATIVE WHITE BLOOD COUNT.

	11-20-07, 1st day.	2d day.	3d day, after 4 days.
Small lymphocytes, ...	41	50	37
Large lymphocytes, ...	12	7	10
Neutrophiles, ...	47	33	50
Transitionals, ...	0	7	0
Eosinophiles, ...	0	0	7
Basophiles, ...	0	0	0

100

100

100

Aestivoautumnal and tertian.

Second admission, January 27, 1908.

Small lymphocytes, ...	41
Large lymphocytes, ...	16
Transitionals, ...	1
Neutrophiles, ...	42

Aestivoautumnal parasite.

CASE XXIX.—J. E., Italian, never had any previous malarial infection, being sick with present illness in Spanish Honduras for three months.

Physical examination: Very anæmic patient; liver and spleen only slightly palpable; other examinations negative.

In the study of these cases all the concomitant diseases that were thought to have any influence upon the lymphocytes were shown to be absent. On looking at the counts, we notice at once the relative and constant increase in small lymphocytes ranging from thirty-five to fifty-four per cent. This is the point to which our attention would at once be called and to which I desire to lay especial importance.

In the study and research work done on our blood diseases in this country and lower tropical ones, we have come to depend upon a relative count as of great aid and help in assisting one to diagnosticate various blood diseases, both of primary and secondary origin. In fact, it is of absolute value before we can begin to understand the diseased condition.

Every blood disease has its picture within certain bounds, e. g.; pernicious anæmia, splenomedullary leucæmia, lymphatic leucæmia, malarial fever, parasitic diseases, and others. Although the relative leucocytic count has not been studied in

every disease we at present must infer that there must be some change in the leucocytes yet, undetermined representing a certain organism or toxine.

The constancy of the relative blood count in any disease must depend upon the liberation of a certain toxine or some other influencing agent upon the

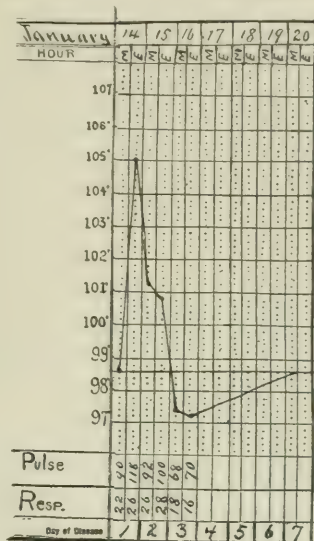


Chart 4—Case XXIV.

blood. The leucocytes respond in a peculiar relation differently for different toxins, being constant for that toxine. If our study continues along proper lines, it seems possible by finding the

relative leucocytic count we will be able to recognize different toxins by this relation. In the cycle of reproduction of organisms, which are supposed to be producing a certain train of symptoms in a patient, toxins are liberated which are peculiar to that organism alone. As every organism breeds true to themselves, the same toxine is constantly being liberated. This causes a reaction upon the constituents of the blood manifested mostly upon the leucocytes, the relation of which should be constant for every different toxine or disease when uninfluenced.

In the ordinary forms of malaria present in this section and in the tropical region where the common organisms (tertian, aestivoautumnal, and quartan) are found, we find in the relative leucocytic count a very valuable aid in their diagnosis.

We find the most prominent writers on this subject to agree with the conclusion and depend upon it for diagnostic value in malaria, that there is a relative increase of lymphocytes, mostly evi-

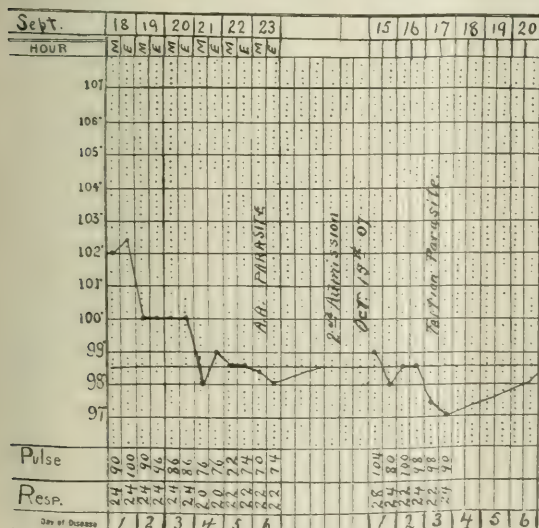


Chart 3—Case XVII.

denced in the large lymphocytes. When we find this relation existing and being unable to find the parasite in a case presenting malarial symptoms we treat it as such with the best of results.

These cases which I have collected, however, present a different feature in their leucocytic relation.

While as a rule I have found an increase of lymphocytes, the increase is shown in the small, rather than the large varieties. In addition to this the parasites found have been of a very erratic form, at times presenting outlines of a tertian then again of an aestivoautumnal parasite in the slide of blood and in the same patient's blood at different periods of the illness as shown in the charts. How are we to interpret such a phenomenon, a blood picture which was constant in a series of twenty-four cases as presented? Shall we designate it along with the ordinary forms of malaria or shall we infer that we are dealing with a different toxine produced by a differ-

ACHYLIA GASTRICA AND INSUFFICIENTIA PYLORI.

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My attention has been called to a question as to the existence of achylia gastrica by Dr. Mark I. Knapp, in articles published in the *New York Medical Journal* of October 31, 1908, and in the *Medical Record* of February 27, 1909. Without wishing to enter into a controversy, the statement of actual experience and of opinions by as many impartial observers as possible, seems desirable.

Dr. Knapp's articles seem to imply that a certain disease or symptom complex has been described by Dr. Max Einhorn as achylia gastrica while he himself, in 1902, showed that the same disease was an insuffientia pylori. The term *achylosis* is given in Dunglison's Dictionary of 1874, and defined in substantial agreement with the term achylia. Ewald apparently ascribes the use of the term achylia, as a more general and less committal substitute for anadenia, to Einhorn in 1895, though my recollection is that the term achylia gastrica was in common use before 1890. Certainly, insufficiency of the pylorus was recognized long before 1902.

Knapp criticises Einhorn's definition of achylia gastrica—"the absolute cessation of all gastric secretion"—as not warranted and grossly misleading. Excepting that the definition should perhaps be worded so as to exclude the secretion of mucus, it is difficult to conceive how the term could be defined in any other way. Even if the conception of achylia gastrica is purely imaginary, the term once introduced must be defined and, subject to Dr. Achilles Rose's criticism of the nomenclature itself, the words can have no other logical meaning. Similarly, the term insuffientia pylori carries its own unmistakable definition.

We have to deal with something more than a dispute between two individuals, however learned and skillful. Not only gastroenterologists in the limited sense but internists generally have believed that there is a secretory failure, sometimes due to organic atrophy or other lesion, sometimes to a fault of innervation or other functional disturbance. They have also recognized, though perhaps usually under the name relaxation, without thought of a muscular weakness sufficiently characteristic to deserve a technical term, that there might be an insufficiency of the pylorus, as of any other sphincter. These are radically different conceptions; there might be an error of diagnosis in a given case or coexistence of conditions, but it is difficult to believe that so many observers have been mistaken as to the actual existence of one or the other conception, or that there is one actual abnormal condition so differently interpreted by the same men at different times.

If, as Knapp states, Einhorn has declared that

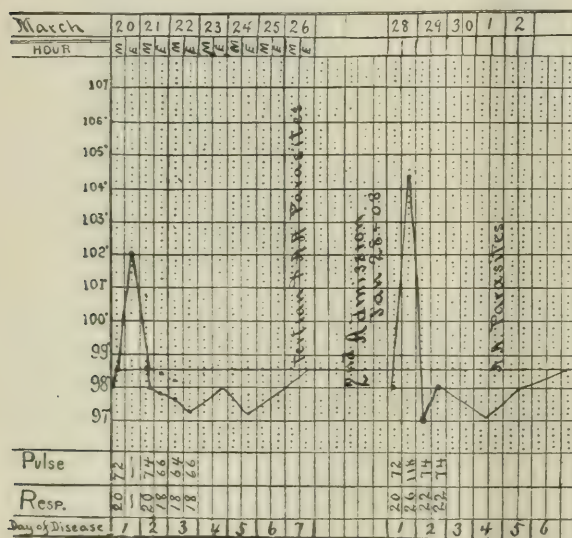


Chart 5—Case XXVIII.

ent parasite? This last conclusion seems to me the most plausible, for after a careful study of the blood the history and clinical symptoms of the cases we must infer that a very strong chain of evidence is thus produced. If we infer that these classes of cases represent a type of the aestivoautumnal malaria then the usual distinctive leucocytic count (relative large lymphocytosis) used as an aid in the diagnosis of malaria would not hold true in the hæmatology of malaria. The blood of these patients is continued to be studied, and, while as yet I have found no definite and constant cause for the condition, the results obtained so far have been very favorable.

In presenting my paper I am greatly indebted to our retired professor of medicine, Dr. J. B. Elliott, for his untiring aid and ready suggestions in the work without which I would have been considerably handicapped.

achylia gastrica is a condition in which "there is either nothing at all in the stomach one hour after the test breakfast, or else there is but a trace of chyme—if chyme it may be called," then the latter author virtually states that achylia and pyloric insufficiency always coexist and that the former, chemical, state may be safely inferred from the latter, dynamic state. I have never understood Einhorn to make this assertion, but, if he does, I am inclined to start a three cornered dispute.

Pyloric insufficiency, or relaxation, in the sense that a simple test meal, as of fifty grammes of bread, five of butter, and 250 c.c. of water, has passed through the pylorus and has left the stomach practically empty, one hour after ingestion, is a fairly common condition. Allowing a leeway of ten or fifteen minutes after the expiration of the hour, for cases in which some accidental delay has occurred, I fail to get the stomach contents, and prove the stomach empty or practically so by lavage—in about one case in five, as they run in actual practice. Rather than extract the stomach contents at a much shorter interval, which scarcely leaves time for secretion, I have made a practice of increasing the bulk of the test meal. In one case, stomach contents were not obtained till the fifth trial, when the test meal had been gradually increased to about three times the standard stated.

As I stated at the time Cannon presented his paper to the American Gastroenterological Association in 1906, to the effect that hydrochloric acid was the determining factor, physiologically, of the relaxation of the pylorus; clinically, just the reverse was true, that is to say, the cases in which the contents slip quickly through the pylorus are those of hypochlorhydria or achlorhydria. But, only in a few instances, have such cases justified the use of the term achylia gastrica by showing failure of ferments and, in the great majority, there is not a true achlorhydria but simply a lack of free hydrochloric acid.

Personally, I believe absolutely in the existence of achylia gastrica, in the sense of a lack of secretion of hydrochloric acid, pepsin, and rennin. In passing, I may say that I am still skeptic as to the existence of separate proteid digesting and milk curdling ferments. At any rate, when one test is negative the other usually is also, and the few instances in which one has been positive and the other negative, in my own experience, I am inclined to attribute to some failure of technique or some condition of the milk used as a reagent for, since making a control test of the milk with gastric filtrate of known activity, I have never encountered such a divergence and have several times found the milk to be noncoagulable. These statements are made in the first person singular, not from egotism, but because I do not want to call in question the reports of laboratory workers of much greater chemical attainments.

In the same spirit, the same form of statement will be continued. If the ordinary clinical tests for hydrochloric acid, pepsin, and rennin are reliable and if I am skillful enough to apply them, achylia gastrica does exist, though I have not been so fortunate as others in finding such cases often. Usually, even when free hydrochloric acid is entirely absent by dimethyl and by resorcin and sugar—which

seems to be practically identical in its result with with the phloroglucivanillin test—the ferment tests have resulted positively, at least after supplying hydrochloric acid *in vitro* or therapeutically, and then testing the gastric contents. Thus, while I quite often find a case that comes very near to the definition of achylia gastrica and which may properly be termed hypochylia, in only a few instances have I made the absolute diagnosis of achylia. Two of these cases proved to be Addison's disease.

Most of my comparatively few cases of absolute or practically absolute achylia gastrica have been phases of advanced gastric cancer. Several have been demonstrated by examination of vomited matter, long retained in the stomach, as in a case of asthma, a few of uræmia, and a few of surgical or medical shock from various causes.

As stated, if my examinations have been correct—and the fact that positive reactions far outnumber negative ones, gives me confidence in them—achylia gastrica and, more often marked hypochylia, does exist. As just implied, achylia gastrica cannot be simply a false conception of pyloric insufficiency, for it has been found in very few cases in which food passes quickly through the stomach, and it has been found more often, though still very seldom, in cases in which there was considerable stagnation. In some of these, it is true, the nature of the case was functional and temporary and it might be held that the pylorus was insufficient but that stagnation occurred merely on account of lack of peristalsis. But, in others, especially those of cancer, the condition was neither functional nor temporary.

Speaking generally, I do not believe that it is possible to give a description of either pyloric insufficiency or achylia gastrica in the sense of presenting a clinical picture. I do not remember ever to have diagnosed these conditions in advance, from the symptomatology. They have simply been discovered from the actual results, respectively, the failure to get the gastric contents and the failure of certain chemical tests. In making this statement, I do not mean to say that I have never suspected the occurrence of these conditions in advance or that my conjectures have always been wrong but that there is no unmistakable or reasonably characteristic clinical picture of either and that a diagnosis—literally a thorough knowing—of a case, can not be made till the examination has actually been made.

In this connection, I may allude to the existence of cases in which there is insufficiency or spasm of either the pylorus or the cardia or of both and especially to the therapeutical puzzle presented when one is relaxed and the other spastic.

It is hardly necessary to allude to cases of achylia gastrica, previously unsuspected, and discovered simply because some concurrent affection leads to an examination of the gastric contents, either because of some intestinal failure, or on general principles of thoroughness. Some cases make such perfect symptomatic recoveries that one cannot but suspect, or even be convinced, that achylia gastrica is quite frequent in persons ordinarily considered perfectly healthy; nor is it necessary to allude to the explosion of the pretty *a priori* theory

that achylia gastrica was a common cause of pernicious anæmia. Probably, if anything, the anæmia is the cause of the achylia.

I would most cordially oppose Dr. Knapp's statement that "the pyloric region is the lowest part of the stomach, hence all ingesta drop there by mere gravitation." In a perfectly normal stomach, the pyloric region—but not the pylorus—is only slightly higher than the greater curvature; in comparatively slight degrees of atonic dilatation and ptosis, which should not be confounded, it is practically a long way from being the lowest part. Both anatomical studies, and the experience of surgeons and internists who have examined carefully, show that the circular muscular coat of the stomach normally offers some obstruction to the dropping of ingesta to the pyloric region, and even a bismuth emulsion drops rather slowly to the pyloric region. See Gaultier's (not Souppault's) *Dilatations de l'estomac*.

I would also object to Dr. Knapp's implication that supermotility of the gastric muscle generally is necessarily associated with pyloric spasm, or that achylia gastrica is necessarily atrophic and insufficiency of the pylorus hypertrophic, or that an exaltation of one function may not coexist with a depression of another function.

I most heartily concur with his statement that achylia gastrica should not be inferred from the absence of stomach contents an hour after a meal. Such an inference is as absurd as, to hold that the absence of stolen goods on a suspected person is conclusive evidence that he has made "way with them." Indeed, we might go farther and say that it is a bad plan to deduce from one clinical condition any other that can be directly tested for.

To sum up, there is such a condition as achylia gastrica and such a condition as insufficientia—or at least, relaxatio—pylori. They are absolutely different conditions, having in common only the element of depression of function, which may be functional in the ordinary sense or as secondary to an organic lesion. They are so different that there can be no question of correct nomenclature or interpretation of a single disease or symptom complex, so different that they may exist independently or may coincide in the same case. There is no characteristic, diagnostic, much less pathognomonic, symptomatology of either. The diagnosis must depend upon actual investigation.

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DOES ZYMOSIA GASTRICA SOLVE THE SOIL PROBLEM OF TUBERCULOSIS?

A Study of the Gastric Condition of One Hundred Cases of the New York Board of Health Clinic for Pulmonary Tuberculosis.

By MARK I. KNAPP, M. D.
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In the issue of September 6 of the *Medical Record* appeared my article entitled *Organacidia gastrica*. By that term I described a condition of the stomach the symptoms of which are produced by the presence within the stomach of organic acids. The pathological condition which manifests itself clinically is still being misinterpreted as "gastric neu-

rosis" and is ordinarily known by the name of "sour stomach." I am very glad to see that since my several publications in which I speak of organic acids, these organic acids have begun to attract quite a good deal of attention. It is the organic acids which produce symptoms, it is the volatile character of these acids which irritate parts quite distant from the original source. Wherever the gaseous, volatile acids do enter, their bad effect is impressed. And those acrid, volatile, nauseating, irritating gases go wherever there is an unobstructed passage. Hence the affection of the ear through the Eustachian tube, because of its communication with the pharynx; hence the affection of the conjunctivæ, because of their communication with the nose through the lacrimal canals and the nose in its turn communicating with the pharynx; hence the affection of the frontal cells, because of their communication with the nose through the foramina of the cribriform plate of the ethmoid, which again communicates with the nose, etc.

In my first paper I have distinguished three distinct subdivisions of organacidia gastrica, viz.: organacidia gastrica simplex, gastrostia fungosa, and zymosia gastrica. Since then I have added a fourth subdivision, namely organacidia gastrica ab amylo.

Organacidia gastrica simplex is caused by the introduction into the stomach of an excess of organic acids, as in fruits, salads, etc. *Gastrostia fungosa* derives its name from the growth within the stomach of fungi, mold. During the metabolic changes attendant on the growth of these plants acrid, irritating, volatile acids are generated and discharged; the musty, pungent smell of mold is not unknown to us. *Zymosia gastrica* marks the condition of the stomach which is caused by growing, budding yeast cells. This is again the cause of the development of organic acids which irritate. Whenever budding, sporulating, growing yeast, yeast as mother and daughter cells, and yeast chains are seen in quantities we are dealing with a pathological condition. *Organacidia gastrica ab amylo* is the result of eating of large quantities of starches either in the shape of plain bread or cakes or potatoes, etc. It is the third subdivision of organacidia gastrica with which we have to deal in this article.

In February, 1908, I approached Dr. John S. Billings and requested him to permit me to study the gastric condition of the tuberculous patients that come to the clinic of the Board of Health. Dr. Billings consented after hearing my views and I wish to take this occasion to thank him for his courtesy. I was given permission to study first fifty cases and report, but I have added another fifty cases during the elaboration of the report. The report which here follows is only on fifty cases, but it holds good with very slight variation in the other fifty cases as well.

Dr. John S. Billings,
Dear Doctor:—
Herewith I beg to submit to you my report on the examinations of fifty patients. Some I have examined only once, others were examined more than once, especially those cases which showed the condition of insufficientia pylori.

When I came to ask your permission to study the

digestive condition of the tuberculous I had no pre-conceived idea of what I might find. It was simply a question of exploring some unknown region, and unable to tell what I might encounter I reasoned that, insofar as, remedially, we cannot do anything else than to attempt to build up the patient aside of fresh air and sunlight and, insofar as the building up involves a question of digestion, I reasoned that possibly by studying the digestive conditions we might get some valuable information. The result of my investigations proved the correctness of such reasoning.

In my present investigations I attempted to go no further than to note the physical condition of the chyme, its microscopical picture, and its reaction with respect to free hydrochloric acid. As I said before, these examinations were intended as a sort of general surveying without going into details. The result of these examinations entirely exceeded my expectations. Indeed, had I not had my previous ten years' experience in the specialty of diseases of the stomach, the groundwork for which was laid under the personal tutorship of our master Ewald, had I not had the experience of hundreds, if not thousands of gastric analyses, I surely would have felt impelled to construe as "normal" the gastric conditions which I found in these investigations simply because of the uniformity of the microscopical picture. Every case showed the same pathological picture which I have described as denoting the condition of zymosia gastrica; every case showed growing, budding, sporulating yeast cells and quite a variety of bacilli; the normal chyme shows neither.

The examinations were conducted in the following way: The patients were told to have a full meal of soup, meat, potatoes, bread, and vegetables between 6 and 7 in the evening and then not to eat or drink until they saw me the following morning at 9 and to bring along a dry, fresh water roll, i. e., to fast for fourteen hours before the examination. First the stomach was aspirated, and then the patients were given thirty-five grammes of roll and 300 c.c. of filtered water. They ate in my presence. After this they waited one hour. This is my usual routine procedure in every case. After they had waited for one hour I again introduced the tube for aspiration. In some cases I could get some chyme in others I could not. Those patients in which I could not aspirate any chyme I asked to come again the following day for another test meal. But this time I did not wait for an hour but aspirated in less than an hour, in three quarters of an hour; if again no chyme was aspirated, the patient came the following day when I attempted to aspirate the chyme in half an hour. If this attempt was fruitless the patient came again the succeeding day, and I waited only fifteen minutes. This is the way I described to proceed in order to diagnosticate insufficientia pylori, a condition which was present in eleven out of the fifty patients. The normal stomach should contain, one hour after eating the above described test meal, from thirty to forty c.c. of contents, about one third of which should be solid in the form of a floury sediment on the bottom of the beaker with a clear, odorless and somewhat yellowish fluid above this sediment. If considerably more is aspirated it signifies pro-

longed contraction of the pylorus, and if less is aspirated it shows a weakening of the pylorus. Of course I do not wish to tie myself down to exactly thirty or forty c.c., nor do I wish to call a quantity of but twenty or sixty pathological. But when there are aspirated only about 20 c.c. and instead of separating into two distinct layers as mentioned before the chyme has the appearance of a sponge, is "spongy," this indicates the beginning weakening of the pylorus, and if no contents at all are aspirated the condition confronting us is one of insufficientia pylori which I have first described in the *Philadelphia Medical Journal*, May 24, 1902, and which condition has since been recognized by many authorities among whom I would mention Boardman Reed in his book on *Diseases of the Stomach and Intestines*, 1904.

The fallacious teaching still prevails that the free hydrochloric acid serves as a disinfectant and hence bacilli cannot be found with free hydrochloric acid. I had repeated occasions to contradict this in my many writings and in medical societies, and the series of these investigations again proves such to be a fallacy. The aspirations one hour after eating the test meal yielded the following quantities:

A.	2 Patients	100 c.c.
B.	1 Patient	80 c.c.
C.	3 Patients	50 c.c.
D.	1 Patient	50 c.c.
E.	3 Patients	40 c.c.
F.	1 Patient	30 c.c.
G.	2 Patients	10 c.c.
H.	10 Patients	5 c.c.
I.	13 Patients	less than 5 c.c.
K.	11 Patients in whom nothing was aspirated.	

We see that out of fifty cases 15 patients—G and H—showed the beginning of weakening of the pylorus and 11 patients—K—showed absolute insufficiency of the pylorus. We see then that 39 patients out of 50—G, H, I, K—show that the pylorus is incapable of retaining the food sufficiently long for thorough chymification. The result, naturally, is that the food enters the bowels in an inadequately prepared condition. Of course we have been taught that the bowels take up the work of the stomach, but such fanciful ideas are not corroborated by facts. The very large proportion of sufferers of insufficientia pylori which I have seen and treated did not prove the correctness of such theory. It stands to reason that in every case where there is insufficiency of the pylorus the bowels harbor food which has not been digested properly by the stomach and which must needs have entered the bowel in a more or less unprepared condition, and which therefore undergoes a not inconsiderable degree of fermentation in the intestine. This fermentation, undoubtedly, must add some factors to the production of the febrile state. In all but three cases "A, B" mucus was present in a greater or less quantity. Of the 39 cases in which chyme was aspirated 30 patients showed the presence of free hydrochloric acid; in three patients no free hydrochloric acid could be demonstrated, but possibly the free hydrochloric acid was neutralized by the mucus. Out of the 11 cases of insufficiency 7 patients showed free hydrochloric acid if the stomach was aspirated one half or one quarter of an hour after the test meal.

The facts that present themselves here are:

Every case is one of zymosia gastrica; fifty-six per cent. show the beginning of weakening of the pylorus and twenty-two per cent. show absolute insufficiency; so that the pylorus was affected in seventy-eight per cent. of the cases—this is very significant. Out of the total of fifty cases forty-three patients, or eighty-six per cent., showed the presence of free hydrochloric acid. What impresses most, however, is that each and every case is one of zymosia gastrica.

What relation does zymosia gastrica bear to the genesis of tuberculosis? Does it cause tuberculosis, or is it the result of tuberculosis? I believe this most important question should not be answered until there are concurrent opinions from all over as to the presence of this condition in every patient or at least in a large percentage of patients. We know that tuberculosis is the product of the seed in a proper soil, and whilst we believe that we have solved the problem of the seed we are absolutely at sea regarding the question of soil. Will zymosia gastrica lead us to the discovery of the conditions which are necessary in order to produce and prepare the proper soil? If so, a very great advance will have been made in our science of tuberculosis.

Here I will cite the following occurrence:

CASE 1,376/08.—A young woman, twenty-six years old, came to the clinic a few days ago. She recognized me as having treated her stomach some seven years ago. At present an examination of her lungs showed consolidation of both upper lobes. I hunted up her history of seven years ago and found that the microscopic examination of the aspirated stomach contents showed yeast growth. As I found no symptoms mentioned by the patient referring to her lungs nor did I myself find any pathological condition in her lungs I assume that there was no pathological condition present in her lungs at that time or, possibly such that only an expert might have discovered. The patient at that time did get well, gained in weight under my treatment, and married.

If subsequent and continued research in a large number of cases will prove that zymosia gastrica is present in every patient then we shall have found another very important condition for the early diagnosis of tuberculosis. And, had such been known to me seven years ago, a great deal could have been gained in this case, possibly the full development of pulmonary tuberculosis could have been entirely averted.

Regarding the beginning of the relaxation of the pylorus and the fully established condition of insufficiency pylori I have this to say. That, had the patients come to my office without me knowing that they were tuberculous and had they asked me for the prognosis of their gastric condition my answer would have been very favorable. Of course I would have to go by my previous experience of unqualified success in the treatment of this gastric condition. I have selected one patient, No. 1084/08, also an advanced pulmonary case, with a view of treating her insufficiency. She now shows general improvement and has gained one and three quarter pounds in less than four weeks. Whether such improvement will steadily continue I do not know.

To sum up:

- 1, Every case is one of zymosia gastrica;
- 2, In seventy-eight per cent. of the cases the pylorus is affected;

3, In eighty-six per cent. of the cases free hydrochloric acid is present alongside with various and abundant growth of microorganisms.

Yours very truly,

Mark I. Knapp.

This report I have sent to Dr. Billings after my tabulation of the first fifty cases. But I have continued my investigations of another batch of cases, a few more than one hundred altogether. The only difference was in the number of insufficientia pylori which here was slightly less. (I have either mislaid or lost some of the reports and therefore cannot give the exact figure.) But also here every case was one of zymosia gastrica, also here almost every patient had free hydrochloric acid.

What deduction can be made from the foregoing study?

We find that each and every one of the one hundred consecutive cases is one of zymosia gastrica; every one without exception. We find that one patient showed zymosia gastrica many years before pulmonary conditions developed. It would seem that this occurrence of sporulating, budding yeast is rather more than a mere coincidence, and that zymosia gastrica must bear a certain relation either to the development or to the progress of tuberculosis. To be sure that my assumption that zymosia gastrica may possibly be held responsible for the soil condition of tuberculosis is very daring; yet it apparently constitutes some factor in the condition of tuberculosis. The interest of science demands that we get more information on the subject, and that such of the profession who interest themselves in the scientific research of tuberculosis inquire with especial care into the gastric condition. Let me hope that this article will be widely copied and cited and so be brought to the attention of many in the different parts of our country, and that it may cause others to devote time to inquire into the same subject without prejudice, without bias.

616 MADISON AVENUE.

HERPES SIMPLEX.*

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When the title of this paper is read, the thought will naturally occur to the average physician, I know all about herpes simplex, the so called fever blister or cold sore. When the subject, however, is investigated and the medical literature on the subject is carefully perused many interesting details are discovered.

The term herpes (*ἔρπειν*, to creep) was originally used in dermatology as descriptive of various eruptions with a spreading border. Herpes zoster, "shingles," and herpes simplex resemble each other markedly in certain cases, but as a rule can be easily distinguished. The chief points of difference are, that zoster is almost invariably one sided, following usually the nerve distribution, it very rarely recurs,

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there is frequently a considerable amount of pain with the attack, which may also be present before the vesicular outbreak and may last for a considerable period after the eruption has disappeared; the simple form of herpes is usually bilateral, recurrent, and the pain, if any, is slight and transitory. The outbreak of herpes simplex is frequently preceded by a feeling of heat and burning in the area to be attacked. The eruption usually consists of pinhead and slightly larger sized vesicles, frequently on an erythematous base. Malaise, pyrexia, and chilliness may precede or accompany these outbreaks in extensive cases.

Ætiology.—To state the ætiological factors of herpes simplex is impossible, we can simply name the various conditions or diseases that apparently predispose or are associated with the outbreak. Herpes usually occurs in early life. It can be excited in predisposed individuals by local irritation, exposure to cold winds, sunlight, sea air, or local traumatism. It may be associated with some slight indispotion, as disorders of the gastrointestinal tract, slight coryza, etc. An irritated or decayed tooth seems to be the exciting factor in some of the recurrent cases. Dr. M. B. Hartzell referred to one of his patients who had an attack of labial herpes whenever cheese was eaten. In a goodly number of cases recurrences occur without any determining factor.

Distribution.—The usual distribution of herpes simplex is the mucous membrane or the mucocutaneous border of the lip. The outbreak may consist of one or several clusters of vesicular lesions. If the face is attacked by several groups of herpes, the lips may also be involved. During the last six years, I have made reports of the cases of herpes simplex, not occurring on the lips, from one of the largest dermatological clinics, the Pennsylvania Hospital, where I am connected; of thirty cases, five occurred on the ear, four on the neck, four on the chin, three on the nose, five on the right cheek, and four on the left, one on the buttock, one on the right upper thigh, one on the scrotum, and two on the glans penis. These patches varied from a three cent piece to the palm of the hand in size; six of the cases had more than one group of lesions. Seventeen of the patients were under fifteen years of age; the youngest was an infant of eleven months. The duration of the cases was from a week to ten days.

Herpes of mucous membranes.—Groups of vesicles may not only occur on the cutaneous surface but also on the external and internal mucous membranes. Herpes of the mucous membrane of the gums have been reported by Herzog, and also by Heller. Several authors have written on herpes of the mouth, the hard and soft palate, and the tonsils. among them Haviland Hall, Larmoyez and Barozzi, Kahn, Flatau. In Flatau's article he mentions recurring herpes of the roof of the mouth. Depres described herpes of the tongue with partial glossitis. The mucous membrane of the nose was attacked in the case described by Wodon. Fischel recorded an instance of herpes of the uvula. The larynx was involved by groups of vesicles in the cases reported by Bettman, Rosenberg, Stephanov (two cases), Bereyszaszy, Scheff. Papers have been written on pharyngeal involvement by Lubliner,

Glas, Lermoyez and Barozzi. Recurrent herpes of the œsophagus has been reported by Holub. The vagina may be attacked by herpetic lesions, as referred to by Unna, Duparque, Bärensprung. Urethral herpes, in a male, has been reported by LeFur.

Lermoyez and Barozzi reported an interesting instance of herpes simplex of the mouth and the pharynx. The attack began with a chill and pain in the head. The eruption was bilateral, most marked on the tonsils; the pharynx, the larynx, and the lips were also involved. The outbreak lasted for six days. The pain in the pharynx and the larynx was very slight; swallowing was not impaired.

Holub recorded a case of extreme interest, in which the œsophagus was attacked by herpes. The patient was a male of forty-eight years, who had been always healthy, with no ailment excepting rheumatic pains in the shoulders and the extremities. He was attacked in certain periods, lasting eight day to three weeks, with sudden severe pains of a few minutes' duration, which would as suddenly disappear; this pain started between the shoulders and radiated forward into the chest and stomach. During these attacks the patient had hiccup, and solid food stuck just above the cardiac end of the stomach; water only entering this organ. There was no loss of weight, and the organs were normal. The x ray and the stomach tube gave negative findings. The œsophagoscope showed the cardiac end of the stomach star shaped, and at the top of the fold were two round grayish white groups of lesions; consisting of vesicles with a reddish areolar. Two weeks after admission œsophagoscopic examination gave a normal picture. He had another attack of the same character the following month and every few months there would be a new outbreak.

Menstrual herpes.—It is a well known fact that herpes associated with the menstrual period is not of infrequent occurrence. So much so is this true that Legendre says: "It thus happens that some women are attacked one or two days prior to every menstruation by an eruption of herpes." Fournier, and also Unna mention menstrual herpes. Bruneau states: "The herpetic eruption frequently coincides with every menstrual epoch, whence the name, *bouton de règle*, which has been given to it." Bergh has written an elaborate paper on this subject with numerous references. He refers to cases in which herpes occurred on the genitalia, before, during, or immediately after each menstrual period. He also states the same in regard to herpes facialis. Diday and Doyon also refer to patients who habitually had menstrual herpes. Bettman related in a recent paper, the history of a patient who was attacked by an herpetic eruption of the laryngeal mucous membrane, only during the menstrual period. Dr. Charles N. Davis has very kindly given me the details of two cases of menstrual herpes that he had under his care. The first patient was an unmarried girl, who at each menstrual period was attacked by groups of vesicopustules, with a markedly inflammatory areolar, and great swelling of the labia majora. These lesions had been diagnosed as syphilis, and had been excised on one occasion by another physician. On their reappearance a second operation had been advised. The girl suffered naturally from syphilophobia. The second patient was a married

woman, who had a vesicular outbreak on the right hip, at every menstrual epoch.

Herpetic fever:—As the name implies, an herpetic attack is important in the diagnosis of the disease. Two interesting papers have been written on this subject; *Febrile Epidemic Illness in a School*, by Seaton; *Epidemic of Herpetic Fever*, by Savage. Both of the epidemics occurred in large schools for boys; Seaton reporting 157 cases during a period of four months, and Savage thirty-nine. Each described practically the same symptomatology, a sudden onset with hardly any premonitory symptoms, with rigors, and severe frontal headache, followed in a few hours by hyperpyrexia and vomiting (often severe without diarrhoea; scantiness of urine and almost complete absence of chlorides; herpes would appear usually on the second or third day of the disease, the temperature, in most cases, would fall at the same time; almost every case had well marked herpes, not only on the lips, but on other portions of the face, and in a few instances on the extremities; a vesicular eruption was noted also in some of the cases in the throat, and on the pharynx.

Herpes simplex in croupous pneumonia:—It is a well recognized fact that an herpetic outbreak occurs frequently in croupous pneumonia. According to Wells, in a very complete paper on the subject, herpes frequently appears upon the lips and borders of the nostrils, and occasionally upon the chin, about the eyes, ears, anus, genitalia, and on other parts of the cutaneous surface. The vesicles may rarely be seen in the prodromal stage, but usually in two to five days after the beginning of the attack. Certain authors have stated that the eruption is invariably preceded by rigor, but this has not been Wells' experience. In one of his cases, however, successive crops of vesicles followed recurrent chills. Herpes simplex was present in twenty-six per cent. of his 498 cases of croupous pneumonia. Wells refers to seventeen other authors who have written on this subject; Townsend having the smallest number of herpetic outbreaks, seven per cent., Kissel had the largest number, with an eruption of vesicles in every one of his patients. According to the collective statistics of these eighteen authors, some thousands of cases being represented, herpes simplex occurred in 33.9 per cent. of patients with croupous pneumonia.

Herpes in cerebrospinal meningitis:—Councilman, Mallory, and Wright refer in the *report of the State Board of Health of Massachusetts*, for 1898, to the fact that herpes of the nose and the lips frequently occurs in this disease, and also in some of the cases on other portions of the body.

Herpes in malaria:—Griesinger observed herpes in 117 out of 390 cases of malaria, or about thirty per cent. Powell states that it is of frequent occurrence.

Herpes in influenza:—The German Collective Investigation Committee found this symptom present in influenza in six per cent. of the cases collated. Apparently, however it is not very usual.

Herpes in typhoid fever:—As the statistics on typhoid fever are reviewed, it is seen that this eruption seldom occurs in the disease. D. J. M. Miller found but four patients with herpes, out of a series of 250 cases of typhoid fever in women and chil-

dren. He found also but two cases in 350 male patients with the disease; only one per cent. in 600 cases. In the Johns Hopkins Hospital series of 839 cases, herpes were noted twenty-nine times; 3.5 per cent. Zinn met with it in five per cent. of 100 cases.

Herpes in other diseases:—According to Schamberg herpes are of great rarity in variola, in over three thousand cases it occurred but twice. He thinks that this eruption is present in about three per cent. of the cases of scarlet fever. In diphtheria the outbreak may in a few cases be present.

Herpes progenitalis:—This form of herpes simplex should probably be taken up under a separate heading. Numerous papers have been written on the subject. Unna's paper will be taken as our basis of study. Unna stated that he had met with 2,000 cases of herpes simplex of the genital region, in women, in four years practice, but these occurred in his work among the *puellæ publicæ* of Hamburg. Genital herpes among women of chaste habits, is rare, and very few cases are found in private practice among married women, as pointed out by Greenough, Duhring, and many others. Unna believes that fully twenty-five per cent. of the prostitutes that are under observation in Hamburg have herpes of their genitalia. Fournier considers that the chief causes of this condition are, congestion and great vasomotor irritation. Various ætiological factors which have been mentioned as causing the condition, in the male or female, are uncleanness, decomposing secretions, hot weather, obesity, rape, impeded penile erection due to an overlong foreskin, and in a few cases venereal disease. Certain men have an attack of herpes after every coition with their wives. Injuries and surgical operations may predispose to the outbreak. Unna considers that the constitutional relapsing herpes may be explained by the existence of recurring local disturbances. He thinks that the chief cause of herpes progenitalis is the excessive genital irritation to which prostitutes are exposed, all other causes being secondary. As has been mentioned previously, some women have herpes of the genitalia at every menstrual period. In certain individuals pregnancy and the puerperal state may induce the disposition to the eruption.

Pathology:—Howard performed a thorough autopsy on a case of croupous pneumonia, in a bartender of forty-one years, who died on the sixth day of the disease. Two days before his death a well marked herpetic eruption appeared on the upper lip and the nose. The postmortem examination showed congestion of the veins about the origins of the superior maxillary branches of both Gasserian ganglia; hæmorrhage into the capsule and tissue, with interstitial cellular infiltration and compression and degeneration of the ganglion cells, near the origin of the superior maxillary branch of the left Gasserian ganglion; a few small areas of cellular infiltration in the same part of the right Gasserian ganglion. There was marked congestion of the veins of the neck, the brain, and the cerebral sinuses. According to Councilman, Mallory, and Wright there is in some of these cases (cerebrospinal meningitis) an acute inflammation of the Gasserian ganglion, with destruction and an acute inflammation of the nerve cells composing it. They

made examinations of the Gasserian ganglia in five cases, and of the spinal ganglia in two cases. They thought that the inflammation was due to the spread of the infection, in cerebrospinal meningitis, along the nerves. They examined in one case the herpetic vesicles on the lip and found extensive infiltration with pus cells in the tissues around the vessels, and proliferation of the fixed cells. Only a few histopathological examinations have been made in herpes simplex, probably not more than a couple of dozen at the most. Unna with his practically unlimited supply of material has made but four biopsies, three of genital herpes and one of facial. Unfortunately the cause of this vesicular outbreak is still undetermined, further investigation, alone, will prove the origin of the condition; whether toxic, traumatic, or a specific organism, acting centrally or peripherally on the nervous system.

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THE SYMPTOMATOLOGY AND DIAGNOSIS OF PANCREATIC DISEASE.*

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For two years I enjoyed the privilege of presiding over the edifying sessions of this embryo society. During that time it was my pleasure to be an interested listener in the scientific proceedings. Now, I am called upon by our honorable secretary to present to you a paper on the symptomatology and diagnosis of chronic pancreatitis. I do not assert to be able to present anything that it new and original on this subject; as an internist it has not been my lot to contribute aught to the knowledge of this disease, yet I shall be satisfied if I can interest you in a concise presentation of the modern status of the question of pancreatitis, one of the diseases belonging to the borderline between medicine and surgery.

There is scarcely any other organ in the body whose diseases are so difficult of detection during life as those of the pancreas. The reason for this lies in the peculiar anatomical topography of this organ, particularly its close juxtaposition to the stomach, duodenum, and gallbladder, and the intimate association of its main duct with that of the latter viscus. It is beyond the purpose of this paper to review in detail the anatomy of the pancreas, an exact knowledge of which, however, is indispensable in order that one may appreciate the ætiology of its diseases, and correctly interpret their symptomatology. Let it suffice to recall that the head of the pancreas is closely embraced by the duodenum and lies just beneath the pylorus, its body is behind the stomach and covers the great vessels, while its tail reaches over to the spleen and left kidney. It is therefore impossible to consider the diseases of the pancreas apart from those of contiguous organs, as Mumford has so quaintly expressed it, "the pancreas, the liver and ducts, and the stomach hang like three apples on a single stem, the duodenum." It is a fact of considerable practical bearing, that the pancreas develops as two separate outgrowths of the primary foregut, which afterward coalesce; the two separate ducts remain as those of Wirsung and of Santorini, the latter undergoing complete obliteration in twenty per cent.

*Read before the Williams Medical Society at its meeting of March 8, 1909.

of the cases, while in the remainder it anastomoses with the duct of Wirsung and empties by a separate orifice into the duodenum. In one individual out of ten the duct of Santorini is even of larger calibre than the duct of Wirsung, which fact amply accounts for the ability of the pancreas to empty its secretions into the duodenum, even when the duct of Wirsung is entirely occluded. In conjunction with the common bile duct, the Wirsungian duct opens on the papilla of Vater at a point from eight to twelve centimetres below the pylorus. The close association of the main duct of the pancreas with that of the gall bladder has its physiological significance in the intimate cooperation between the pancreatic juice and the bile in the process of digestion. From the viewpoint of pathological physiology, this close anatomical relationship is an unfortunate one, for herein lies the secret and the cause of many of the morbid processes to which both the pancreas and the biliary passages are subject. In two thirds of all cases the common bile duct passes directly through the head of the pancreas on its journey to the duodenum. This most unhappy anatomical anomaly is responsible for the numerous tragedies in what Dieulafoy has aptly termed "the pancreatic drama."

The sheltered position of the pancreas behind the stomach renders the palpation of the former organ, even when enlarged, next to impossible, excepting when the stomach is displaced downward. It is this difficulty that has for such a long time veiled all knowledge of the affections of the pancreas in such dense obscurity, from which it has slowly emerged in the light of the autopsy room and the operating theatre. It is to the genius of an Opie and a Gamidge on one hand, and of a Robson and a Mayo on the other hand, that we owe most of our present knowledge of the diseases of this organ.

The complex anatomical relationship of the pancreas finds its physiological parallel in the multiple role which this organ plays in the animal economy. It not only furnishes an external secretion possessing marked proteolytic, lipolytic, and diastatic properties, but it also furnishes to the organism an internal secretion, that presides over the metabolic conversion of both sugar and fat. This parallelism goes further. The diseases of the pancreas are not only to be considered as both cause and effect of diseases of contiguous organs, but are also, reciprocally, in close physiological relationship with diseases of remote organs, in the evolution of disordered metabolism. It is therefore, from the viewpoint of chemical physiology, that the most recent advances have been made in the study of pancreatic disease, and from which most is to be anticipated in the near future. In no other field of internal medicine is there necessary such close association for purposes of investigation between surgeon, internist and laboratory worker, as in the study of diseases of the pancreas.

It would be impossible within the narrow limits of this paper to discuss all of the diseases to which the pancreas is subject. Much has been written upon this theme, and he who would turn to the writings of Fitz, Opie, Oser, Mayo, Robson and Gamidge, and others, will be amply rewarded. Let it suffice to allude to the fact that little has been recent-

ly added to what has for a long time been known about malignant disease and cysts of the pancreas, while the acute forms of pancreatic disease, originally classified nearly twenty years ago by Fitz into acute hemorrhagic, gangrenous, and suppurative pancreatitis, have been hardly supplemented by more modern observations. On the other hand, the recognition of chronic interstitial pancreatitis is the triumph of more recent years, and one of the signal contributions of American pathology, through Opie, to medical science. It is this chronic form of pancreatic disease that is the most common, and practically the only form amenable to cure, for it is the only form whose pathology and ætiological relationships have been carefully worked out. It is, on the other hand, a form most difficult to recognize, challenging the keenest diagnostic resources of the clinic and laboratory.

Chronic interstitial pancreatitis has been described by Opie, as consisting of two forms, namely interlobular and interacinar: in the latter of which the new growth of connective tissue encroaches upon the glandular acini, causing the atrophy of their secreting cells and the disappearance of their secretion; at the same time, it destroys the cells comprising the islands of Langerhans, and thus occasions severe derangements in carbohydrate metabolism. These forms of pancreatitis have been produced experimentally by means of the injection of irritant substances into the pancreatic duct, such as bile, oil, gastric juice, etc., and these experiments suggest a strong clue as to the natural ætiology of chronic pancreatitis. For a long time, surgeons have noted the frequent coexistence of chronic pancreatitis and cholelithiasis, and the most plausible explanations of this coexistence have been the retrojection of bile into the pancreatic duct on account of occlusion of the orifice of the ampulla of Vater by a stone; or the passage or stasis of a stone in the common duct pressing on the adjacent pancreatic tissue causing necrosis and subsequent infection; or the explanation has been, that occlusion of the pancreatic duct by means of a calculus has caused a damming back of the pancreatic secretion and consequent irritation of the glandular substance. Other theories of the pathogenesis of chronic pancreatitis take their cue from the close vascular and lymphatic communication between the pancreas and the gallbladder, so that infections of the latter are easily transported to the former. It must not be overlooked, that constitutional diseases, like tuberculosis, syphilis, and arteriosclerosis occasionally involve the pancreas in their evolution, while last, but not least, must be mentioned the close association between pancreatitis and mumps. This association is all the more remarkable, inasmuch as the infection of the pancreas may be the initial sign of the constitutional invasion, and is now considered to be the rational cause of epidemic jaundice, from pressure of the swollen head of the pancreas upon the common bile duct. As a causative factor of pancreatitis, mumps comes next in frequency to gallstones and duodenitis, accounting for ten per cent. of the cases, according to Egdaahl's collective investigation.

The symptoms of disease of an organ, whose anatomical and physiological connections are so many

and complicated, must needs be numerous and varied. In spite of this fact, the diagnosis of chronic pancreatitis (except by direct inspection of the diseased viscus on the operating table) is one of the most difficult tasks in internal medicine. This seeming paradox receives its explanation from the fact that the clinical symptoms are frequently closely interwoven with, or masked by those of the diseases which pancreatitis most generally complicates, namely cholelithiasis; they are usually of slow evolution; other organs may vicariously perform some of the functions, that are impaired in the diseased viscus; and the methods for the detection of the various changes in the body's secretions and excretions on account of the impairment of pancreatic function are among the most difficult and complicated known in the laboratory. Little wonder, then, that the diagnosis of pancreatitis in most cases is made first in the operating room, or is revealed only at the autopsy.

The symptoms of chronic pancreatitis may be subdivided into the four following categories: 1, Those referable to pressure on the common bile duct; 2, those referable to diminution in the activity of the cells elaborating the digestive secretion; 3, those referable to the impairment of the internal secretion that presides over carbohydrate and fat metabolism; and 4, symptoms more directly referable to the inflammatory process seated in the pancreas.

The symptoms of the first category, which are caused by pressure upon and narrowing of the common bile duct by the swollen head of the pancreas that envelops it, and which consist essentially in the interference with the discharge of bile into the duodenum, cannot be sharply differentiated from those due to cholelithiasis. Both conditions cause jaundice, but the jaundice caused by pancreatitis is more apt to be persistent, while that accompanying gallstone disease exists only during the acute attacks of biliary colic, during the temporary passage of a calculus through the biliary ducts. The jaundice caused by the infectious type of pancreatitis, analogous to mumps, has already been alluded to. In addition there are acholic stools and urobilinuria.

The symptoms of the second category, namely those caused by the impairment of the secretory activity of the pancreatic acini, are the most prominent in the pancreatic syndrome. These symptoms may be characterized as those of pancreatic insufficiency, or of achylia pancreatica. The absence or diminution of the important digestive secretion of this gland, with its fat splitting, proteolytic, starch converting, and milk curdling ferments, cannot but have a profound effect upon the nutrition of the body, and the composition of the faeces. Thus, may be explained the marked emaciation occurring in pancreatitis, which has so frequently erroneously suggested malignant disease. The study of the peculiar character of the faeces in pancreatitis has furnished a number of important diagnostic criteria. One of the most striking characteristics of the stools is their offensive character and enormous bulk. In addition to this, there is steatorrhœa, or the presence of an excessive amount of fat in the stools. This may be so abundant, that the oil may be seen floating on the top. The excess of fat may not be evident to the naked eye, in which case the stools

are gelatinous, clayey, gray, or colorless, and occasionally of asbestoslike appearance. This appearance of the stools is not characteristic of pancreatic disease only, for it may occur in the diminished secretion or elimination of bile, in amyloid disease of the intestines, or atrophy of its mucous membrane, in caseation of the mesenteric lymphatic nodes, in tuberculous peritonitis, and in abnormally active peristalsis. More characteristic than the steatorrhœa is the diminution in the proportion of split fats in the stools. Ordinarily from seventy to eighty per cent. of the total amount of fat is split by the pancreas; this may be reduced to from twenty to fifty per cent. This changed relationship between the amount of split fat and neutral fat is even present when macroscopic steatorrhœa is absent. According to Solomon there is an abnormally large amount of lecithin in the stools of patients suffering from pancreatitis. Associated with this inability of the patient to digest fats, is his general distaste for fatty foods and meats.

Another important characteristic of the stools is the presence of a large amount of undigested muscle fibres. This condition is known as azotorrhœa. Like many of the other symptoms of the pancreatic syndrome it is not absolutely pathognomic, for it may occur in many other and widely diverse conditions, chief among which are disorders of the small intestine. More important than a discovery of muscle fibres in the stools is the identification of their nuclei, for failure to digest these is a special feature of pancreatic insufficiency and occurs in pancreatic disease only. *Schmidt's* test is designed to determine the presence of the muscle nuclei. The patient is given small cubes of meat one half centimetre square, hardened in absolute alcohol, and after being enclosed in silk gauze, preserved in alcohol. After washing in water for three or four hours, the wrapped up cubes are taken by the patient in wafers, together with a special diet. The sacks are recovered from the faeces, dehydrated in alcohol, and the contained fibres are embedded and stained with nuclear dyes. The fibres are then examined for muscle nuclei, which in the case of pancreatic insufficiency are usually present in large numbers. The gastric juice does not digest the muscle nuclei. On the other hand, a severe diarrhœa may not give the pancreatic juice time to digest the muscle nuclei; while if these are permitted to remain in the intestine longer than twenty-four hours, they may undergo autolysis or self digestion as the result of putrefaction. *Sahl's* method of testing the efficiency of proteid digestion consists in the administration of gelatine capsules, hardened in formol and filled with iodoform. The capsules resist the action of the gastric juice, but are rapidly dissolved by the pancreatic secretion. After they are swallowed by the patient, the urine or saliva is at regular intervals tested for iodine, which should appear, in the normal individual, in from four to eight hours. In pancreatic insufficiency this reaction is delayed.

Miller's test has been devised for the purpose of discovering the degree of tryptic activity of the faeces. It consists in giving the patient a test meal and two hours later a calomel purge. A few drops of the stool are sterilized by heat and then placed

on an agar plate containing Loeffler's serum. This is kept at a temperature of 131° to 141° F. for twenty-four hours. The presence of trypsin is indicated by marked indentations on the surface of the plate which are evidences of its proteolytic activity. If trypsin is absent, the surface remains smooth.

An important constitutional effect of pancreatic insufficiency is the profound and progressive loss of weight in spite of a rich diet.

The third category of symptoms, which arise as the result of the defective metabolic activities of the pancreas, are not always present, owing to the fact that a small portion of the gland may, if healthy, preside over the metabolism of sugar and fats, in spite of extensive disease of the remainder of the organ. For this reason, in the early stages of pancreatic disease, these symptoms and clinical signs may not be present. The failure on the part of the pancreas to liberate a ferment that presides over the destructive metabolism of sugar, causes hyperglycemia and consequent glycosuria. This, however, does not occur in all cases of pancreatitis, even of the interstitial variety. It occurs only in the form of interacinar pancreatitis, in which the fibrous tissue is apt to invade the islands of Langerhans, causing sclerosis and hyaline degeneration of these structures. Extensive disease of the head and neck of the gland is not associated with glycosuria, for the islands of Langerhans are most abundant in the tail of the pancreas. Even when the entire organ is involved, this sign does not always occur, for the glands of Brunner located in the wall of the duodenum, and which have the same genetic origin as the pancreas, are capable of taking on vicariously the metabolic activities of this organ. The absence of glycosuria is, therefore, no indication that pancreatitis does not exist, but its presence, particularly when associated with jaundice or cholelithiasis or any of the other symptoms of pancreatitis, is a sign of no little value.

That diabetes mellitus is in many cases the result of chronic interstitial pancreatitis there can be no doubt, but diabetes may also be due to hepatic insufficiency, and in the presence of the various symptoms of cholelithiasis, it would be well nigh impossible to decide whether the diabetes is the result of the defective liver function, or whether it is the result of a pancreatitis complicating the cholelithiasis. There is one form of diabetes that should without question be attributed to a pancreatitis, namely, the *diabète bronzé*. This is an expression of haemochromatosis, or the deposition of blood pigment, not only in the skin, but also in the internal organs. The presence of this pigment in the pancreas sets up a chronic interstitial pancreatitis and a consequent diabetes. The discoloration of the entire integument is similar to that which occurs in Addison's disease, with this difference, that unlike the latter the bronzing of the skin is a uniform one, and there are no pigmentary spots in the mucous membranes. It has been noted that certain cases of pancreatitis are associated with diseases of the adrenals. This association may be more than a coincident, and may stand in some causal relationship with the bronzing of the skin, occurring in both Addison's disease and *diabète bronzé*. In this con-

nection the experiments of Loewi are significant. He found that the instillation of a one per mille solution of adrenalin into the conjunctival sac does not produce mydriasis, except in animals whose pancreas has been removed. Possibly the future will show that this observation may be employed as a means of detecting the presence of advanced atrophy or complete destruction of the pancreas.

Instead of a true diabetes, pancreatitis may be the basis of an alimentary glycosuria. That is, the patient is unable to tolerate as much sugar in his diet as a normal individual, without the appearance of glycosuria. Wille's test consists in the administration of from seventy to one hundred grammes of sugar dissolved in half a litre of coffee and administered in the morning before the taking of other food. In fifteen cases in which as the result of this test a temporary glycosuria has been produced, out of 800 miscellaneous patients experimented upon by Wille, there were revealed at autopsy grave lesions of the pancreas in ten cases, including chronic interstitial pancreatitis and carcinoma of the gland. Moreover, it is recognized, that diabetes may exist as the result of disease of the pancreas without any apparent organic changes in this organ.

Another of the evidences of the metabolic disturbances due to pancreatic disease, is the oxaluria that is frequently observed. This may be of value, but only so when associated with other more suggestive symptoms.

To this group of metabolic disturbances arising as the result of pancreatic disease belongs the so called "pancreatic reaction" discovered by Cammidge in 1904 and modified more recently by the same investigator in 1907. The essence of the Cammidge "C" reaction consists in the isolation from the urine of patients suffering from an inflammatory disease of the pancreas of a substance, which, when boiled with strong hydrochloric acid, splits off a body having the chemical character of the sugars. In eighty-seven cases of pancreatic disease Cammidge obtained the reaction in eighty-two per cent. It is a most difficult and laborious method of analysis, which, reduced to its simplest terms, consist in boiling of 40 c.c. of the urine, filtered, of acid reaction and free from albumin and sugar, with 2 c.c. of strong hydrochloric acid for ten minutes; after partly cooling, eight grammes of lead carbonate are gradually added to neutralize the mixture. After this is chilled and filtered, 10 c.c. of distilled water are added to 10 c.c. of the filtrate, which is then precipitated with two grammes of tribasic lead acetate, filtered, the excess of lead removed by the addition of two grammes of sodium sulphate; the mixture is then boiled, chilled and filtered to 20 c.c. To this filtrate there is added a mixture of phenylhydrazine hydrochlorate, 0.8 gramme; sodium acetate, 2 grammes; and one gramme of fifty per cent. glacial acetic acid; and the whole is boiled on a sand bath for ten minutes. The solution is then filtered, while hot, and set aside to crystallize. The appearance of the characteristic crystals of ozones of golden yellow color and occurring in sheaves and rosettes, constitutes the positive reaction. The exact nature of the substance causing the reaction is unknown, although in one case Cammidge found it to be pentals. There can

be no doubt, that the Cammidge "C" reaction is of great diagnostic value, but its complexity makes it practically unavailable for the general practitioner. Moreover, it must be remembered that pneumonia, adenitis, and cancer may also give the reaction. In cancer, the crystals are larger and broader than those of inflammatory origin, while the crystals of chronic inflammation are larger than the very fine crystals of acute inflammation. If a thirty-three per cent. solution of sulphuric acid is added to the crystals, those from acute pancreatitis dissolve rapidly in from a few seconds to three quarters of a minute, those from chronic pancreatitis take longer, one to two minutes, while the crystals from cancer take from three to five minutes to dissolve.

Another urinary reaction for pancreatitis is named after its discoverer, Hewlett. It consists in the detection in the urine of lipase to an extent greater than is normally present. This ferment appears in the urine in larger amount particularly in cases of acute pancreatitis, complicated with fat necrosis, caused by the escape of pancreatic juice into the body cavity; here the lipase splits up the fats into fatty acids and glycerin, the latter of which is absorbed, and the former uniting with lime salts to form deposits of lime soaps that are unmistakably revealed in the form of opaque, yellowish white spots, studding the fat of the regions about the pancreas and even sometimes remote from it. It was fat necrosis that to the surgeon frequently presented the first optical evidence of the existence of some lesion of the pancreas. The fact that lipase is set free coincident with the genesis of fat necrosis, and is detected in the urine by Hewlett's reaction, renders the latter a valuable diagnostic method for determining the existence of fat necrosis without recourse to an exploratory incision.

There is considerable evidence that there occurs during pancreatic disease a diminution in the power of the body to consume its own fats. The experiments of Lombroso have recently shown that the pancreas yields an internal secretion that enables the body to dissimilate its stored up fat. This may serve to explain the occasional existence of peculiar accumulations of fat on the chest and abdomen in cases of pancreatic disease, resembling in certain respects Dercum's disease, or adiposis dolorosa.

The fourth group of symptoms of chronic pancreatitis include those due to enlargement of the organ and its pressure on neighboring structures. In rare instances the hypertrophied pancreas may be palpated. More frequently, however, only an increased resistance is felt in the epigastrium. Tumor formation has been found by Robson to be more common than the textbooks acknowledge. The inflammation and the pressure on neighboring nerves give rise to pain. According to Walko, this pain is due to pressure on the solar plexus, to a neuritis of its pancreatic branches, or to a local peritonitis. But pain alone is not sufficient for diagnostic purposes, although its character may be somewhat suggestive. It is not agonizing, like that seen in the acute or fulminant types of pancreatitis, and is not accompanied, as in the latter, by shock and severe collapse, with symptoms of anxiety, rapid pulse, and vomiting; all of which also form the clinical pic-

ture of acute intestinal obstruction. The pain may be continuous or periodical. Continuous pain is also observed in pancreatic cysts, calculi, and carcinoma. In the last the pain is very severe, causing the patient to avoid movement, talking, or taking of food. The periodical pain may have the character of epigastric colic, the occurrence of which, however, even in the left hypochondrium is not sufficient as a diagnostic criterion of chronic pancreatitis. Similar attacks of pain may be caused by renal calculi, appendicitis and a beginning pericolitis in the region of the splenic flexure. It is difficult particularly to differentiate these attacks of pain from those of gallstone colic, even when there is accompanying jaundice or any of the other symptoms of cholelithiasis, for both conditions frequently co-exist, the one complicating or being complicated by the other. Nevertheless, in gallstone disease the pain is never associated with the extreme weakness which has been observed in pancreatitis. Nor is it possible to differentiate the epigastric colics of chronic pancreatitis from those caused by pancreatic stones, which occasionally, though by no means always, appear in the stools as the characteristic white concretions of calcium carbonate. The necessity of close differentiation from this condition is not important, because pancreatic stones are themselves a potent factor exciting connective tissue proliferation in the pancreas. The character of the pain frequently prompts a diagnosis of nervous gastralgia, which should never be made, without first disposing of the possibility of a chronic pancreatitis.

In most cases of chronic pancreatitis, in addition to the pain there is a point of marked tenderness midway between the tip of the ninth rib on the right side and the umbilicus, (Robson's point), and an area of tenderness and muscular spasm along the right rectus, a little to the right of the umbilicus and extending upward from it for several inches. There is also reflex pain referred to the region between the scapulæ or about the left scapula alone. These signs are, however, subject to considerable variation. At times the localization of the pain is definite, and at times, with extensive lesions of the pancreas, there may be no pain, or the pain may be diffused.

There are other symptoms of the chronic inflammatory process seated in the pancreas that are still less characteristic than the pain, and are present in a host of other condition. These symptoms are: Dyspepsia, constipation, vomiting, emaciation, attacks of syncope, hæmorrhagic stools, and jaundice. The occurrence of a salivation that cannot be otherwise explained is suggestive of a pancreatitis, in which it may occur as a reflex compensatory activity. The emaciation is progressive and profound, and that which occurs in malignant disease is not more so. The attacks of syncope observed in two cases by Walko could not be explained merely on the basis of the cachexia present. The icterus is a frequent and significant symptom and has already been alluded to in the discussion of the disorders caused by the topographical relations of the pancreas. In the jaundice caused by pancreatitis the irritation of the skin is apt to be greater than in that which is associated with diseases of the gall-

ducts. Many conditions that cause compression and finally total occlusion of the bileduct, such as tumors of the head of the pancreas, of the duodenum, of the hilum of the liver, and the lymphatic glands, give rise to the Bar-Pick syndrome, namely a deep, chronic, gradually increasing icterus, a progressive emaciation and cachexia, an enormous distension of the gallbladder, with usually a subnormal temperature, and the absence of a marked enlargement of the liver. This group of symptoms will point to pancreatic disease, only, when associated with the more characteristic symptoms of the latter, such as diabetes, and the impaired digestion of fats and muscle fibres. The diarrhoea of pancreatitis is characterized by large, soft, greasy, stools, while the dyspeptic symptoms center chiefly about the distaste for fats and meats. Fever is not a prominent symptom of chronic pancreatitis, while in malignant disease a subnormal temperature is not uncommon. Ascites is sometimes produced by pressure of the enlarged pancreas upon the portal vein.

In this condensed sketch of the symptomatology and diagnosis of pancreatitis I believe that I have included all that has been observed by our masters at the bedside and in the clinical laboratory, but what practical conclusions may one be justified in drawing from this profuse array of clinical and chemical data? In the first place, pancreatitis is not a rare disease; it frequently masquerades under the guise of chronic indigestion, indefinite epigastric colics and many other vague abdominal manifestations. Can it be denied that many of the chronic visitants of our offices are possibly suffering from some chronic pancreatic affection, rather than from the functional disease with which they are usually labelled? Secondly, while internal medication can hardly claim any glory in the successful treatment of pancreatitis, it is the internist and general practitioner who must appreciate the complex picture of this disease, and recognize its salient symptoms.

249 HEWES STREET.

TUBERCULOUS INFECTION THROUGH THE TONSIL AND ADENOID.*

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At our last meeting, I stated that I believed the tonsil and adenoid were only a detriment and had no beneficial function. At this "symposium" on tuberculosis it certainly would be proper to give my reasons.

We have been taught and told that the situation of the lymphatic tissues of the throat are ideal to ensnare and destroy the invading microbes of disease. If it had been placed there for that purpose would it not have been better to have evenly distributed it underneath the mucous membrane of the buccal, nasal, and pharyngeal cavities, where it would more easily ensnare from its extended surface? While the picture of the defensive host of phagocytes is very thrilling, peace is much better than war in body economy. The least work we can throw on the phagocytes the better health will we enjoy.

We cannot tell you the function of the tonsil for the simple reason that it has no function in our present body economy. Our present day tonsil is a vestigial organ which at some remote time was the gill of our amphibious ancestors. The crypts were the openings through the gill and were lined with membrane. Between and around the crypts, or opening, of the gill was deposited the lymphoid tissue or battlement against the invading disease hosts. When our amphibious ancestors became land animals, this gill was closed by a thick membrane now called the capsule of the tonsil, which closed the gill openings at one end, and our crypts were formed. On account of the crypts forming receptacles for germs and debris, Nature deposited more lymphoid tissue to better protect the weak part, and to-day, in our present time of evolution, we have the disease-producing tonsil, which, together with the appendix, are two very troublesome vestigial organs, and we have found in past experience that we are better off without them.

The inherent resistance of all mucous membrane to germ invasion and the bactericidal properties of its secretion gives protection, but when there is abrasion invasion takes place. In the crypts and fissures closed, as they often are, by secretion plugs and attachments of the pillars and mucous membrane, and swollen by chronic and acute inflammation, the path is opened and the invading germs go on their way to the lymphatic glands to be destroyed or to establish infected centres.

In reference to the lymphatics the difference between a lymphatic gland and the tonsil is, that while the lymphatic vessel passes through the lymphatic gland it originates in the tonsil, so that the infection has a freer pathway, and its first greatest resistance after passing the mucous membrane would be the first lymphatic gland. The course of infection through these conditions is well illustrated in Dr. J. Grober's three experiments:

First experiment, September 16, 1902: A young rabbit was anesthetized by ether and chloroformed, and 1 c.c. of a sterilized emulsion of black Chinese paint injected into the left tonsil.

September 23, 1902, the autopsy showed black particles in the blood. Behind the left tonsil there was a mass composed of coloring matter and leucocytes. The lymph glands on the left side of the neck, as far as the upper border of the thyroid cartilage, were stained black. The microscope demonstrated the lymph vessels filled with free coloring matter, as well as leucocytes which enclosed small particles of pigment.

The glands and lymph vessels were fairly packed with the coloring matter. Beyond the zone of the lymph glands and vessels little coloring matter was found.

Second experiment: A small dog was narcotized by morphine injections. $6\frac{1}{2}$ c.c. of the sterilized emulsion of black pigment was injected into the tonsil.

The autopsy, after complete exsanguination, showed the following conditions: Very little coloring matter in the leucocytes, none being free in the blood. The tonsil and the loose connective tissue containing the afferent lymphatic vessels of the tonsil were of a deep black color. Along the muscles

*Read before the Aurora Medical Society, March 11, 1909.

of the neck, as far as the hyoid bone and to the median line, there were streaks of pigment. The pigmented area also spread downward below the hyoid bone, where it extended one centimetre beyond the thorax and to the parietal pleura, which, when stripped off and examined by transmitted light, showed the black pigmentation. The lymph vessels of the peritracheal connective tissue and of the oesophagus, as far as two or three centimetres above the bifurcation of the trachea, were also colored, whereas on the left or uninjected side no such phenomenon was found. All the lymph glands on the lateral wall of the pharynx, hyoid bone, larynx, along the deep vessels of the neck and supraclavicular fossa on the right side were black. The parietal pleura at the apex showed an exudate, but no adhesion to the visceral pleura.

The microscope showed that in all these positions there were no other changes present. In the glands the coloring matter occupied the paravascular spaces. In the lymph vessels between the supraclavicular glands and the parietal pleura of the apex there was a large number of leucocytes filled with coloring matter. Free coloring matter was also present in this region. In the apex of the lung there were no signs of an inflammatory reaction. The coloring matter here seemed to be freely deposited within the connective tissue. In the exudate at the apex there was coloring matter in the leucocytes.

Third experiment, April 4, 1903: A small dog was placed under morphine narcosis and 5 c.c. of coloring matter injected into the tonsil.

April 13th, the same experiment was performed on the opposite side.

May 10th, the autopsy, after exsanguination, showed a large amount of coloring matter free in the blood; the leucocytes, the tonsil, and connective tissue, and the connective tissue of the neck on both sides along the larynx to the aperture of the thorax were colored symmetrically. The lymphatic glands along the large bloodvessels, as well as those in the supraclavicular region, were deeply stained. The coloring matter was also found within the lymphatic vessels and in the paravascular spaces. A fibrous exudate was found in the apices of both lungs, thus forming a bridge of inflammatory material from the parietal to the visceral pleura. The coloring matter was also present in the exudate. The microscopic appearance of the apices presented a light, grayish coloration. The glands in mediastinum were stained on the left side, as were also the bronchial glands. In the left lung there were three other small fibrinous exudates in which the coloring matter was present.

From these experiments Grober builds the hypothesis that tuberculous infection of the apex of the lung may take place via the deep lymphatic chain, the supraclavicular glands, and thence the parietal lymphatic vessels, where an inflammatory exudate is thrown across to the visceral pleura. The tubercle bacilli travel across this inflammatory bridge and enter the apex of the lung.

I thoroughly believe that the tonsil and adenoid have more to do with the tuberculous infection of the lymphatic glands of the neck, larynx, and lungs, than from all other sources. Mayo and others have

found that eight per cent. of tonsils that have been removed are tuberculous. Milligen found in his examinations that sixteen per cent. of adenoids removed were tuberculous.

It is an acknowledged fact that the majority of tuberculous tonsils are primary infections. Rheumatic fever, acute endocarditis, septic thrombophlebitis, pulmonary gangrene, and other infected conditions have their initial lesion in the tonsil and adenoids, while scarlet fever and acute suppurative osteomyelitis have been credited to the tonsil for their primary lesion. That tuberculous glands of the neck are due to tonsil infection is quite proved in the fact that we rarely find these diseased glands in phthisical patients. In all tuberculous cases the tonsils and adenoids should be thoroughly removed that the present and future source of infection may be eliminated.

In reference to the wonderful amount of good work that has been accomplished in the past few years in restoring those children who are suffering from some defect of the eye, ear, nose, and throat, to as near normal condition as possible, very few of us appreciate the amount of economic value that has been given to the state, to say nothing of the benefit derived by the patient. And all of this we can attribute to the examination of school children.

Dr. Frank Allport, who was the agitator of this wonderful movement, should not only receive the highest honor from the medical fraternity, but from every person. The good this movement is doing, and will do, cannot be estimated, but it can be appreciated.

A CASE OF NASAL TUBERCULOSIS TERMINATING IN TUBERCULOUS MENINGITIS.

By A. J. HUEY, M. D.,
New York.

Attending Laryngologist in the Manhattan Tuberculosis Clinic;
Visiting Laryngologist to the Riverside Tuberculosis Sanatorium; Assisting Attending Laryngologist in New York University and Bellevue Hospital Clinic.

I desire to report a case of nasal tuberculosis in which developed the extremely rare complication of extension to the meninges with a fatal issue.

The patient was Mrs. M., thirty-nine years old, born in Germany, married four years, no children. There was no tuberculosis in the family history.

Previous History: Ten years ago the patient had pneumonia, from which she made a prompt recovery and was well until four years ago, when she had an attack of pleurisy lasting three months. Shortly after this she complained of pelvic pain and entered St. Luke's Hospital, when her left ovary and tube were removed. Microscopic examination, made by the pathologist of the hospital, showed large and small cysts of the ovary, lined by a single layer of epithelium, held together by connective tissue with very little ovarian tissue left. Round cell infiltration was marked in the mucosa of the tube. The condition was non-tuberculous. She recovered rapidly following the operation, gaining in weight and strength for about one year, when oedema of the lower extremities developed and albumin was discovered in the urine, with a few hyaline and granular casts. Under strict diet and treatment the symptoms abated, the albumin remaining in the urine in small amount. At no time did examination of the chest show any tuberculous lesion.

Present History: Patient was first referred to me suffering with furuncles in the external auditory canal, which responded readily to treatment.

During examination it was discovered that the left nasal chamber was completely filled by a mass of very friable

vascular tissue, resembling in gross appearance an adenocarcinoma. A history was elicited on increasing difficulty in nasal breathing for the last four years, accompanied by profuse purulent discharge from the left nares. Headache had been severe at times, but not persistent. A portion of the tumor was removed for microscopical examination, and reported by the pathologist, Dr. G. Reese Satterlee, as very vascular tissue, containing engorged blood vessels, arteries, veins, and venous sinuses, and also very oedematous. It contained numerous tubercles consisting of lymphocytes surrounded by a quite recently formed granulation tissue wall. In some of the tubercles were numerous giant cells in areas of coagulation necrosis. There were a number of newly formed bloodvessels and a few inclusions of epithelium of the stratified squamous variety.

Diagnosis: Tuberculosis with marked oedema.

Three portions of the growth were removed, forming a mass of tissue of the size of an English walnut. This established nasal respiration and the patient was much relieved.

Before the removal of the growth it was impossible to determine from what part of the nasal cavity it originated. After operation large ulcerations were seen on the septum and also on the outer wall of the nasal chamber, the turbinates having been destroyed beyond recognition.

Treatment by means of the Röntgen ray was then begun and four short exposures were made on alternate days. At this time, three weeks after the removal of the first portion of the nasal growth, the patient complained of severe headache and dizziness, ringing in the ears and deafness. These symptoms increased in intensity for four days before she took to her bed and was attended by her family physician, Dr. F. R. Boyd. A high fever developed and delirium followed by strabismus, ptosis, and coma. Dr. Egbert Le Fevre was called in consultation and the diagnosis of tuberculous meningitis agreed upon. The patient died after four days abed.

At the time of her death the theory was advanced that the primary infection had been in the ovary, secondary deposits occurring in the kidney, nares, and meninges. After referring to the pathological reports previously made, this theory was abandoned, as microscopical examination of the ovary at the time of operation had shown the condition to be nontuberculous, and at no time had careful uranalysis disclosed any evidence of tuberculous kidney. In the absence of any demonstrable lesion in the chest we must conclude that the case was one of primary nasal infection with direct extension to the meninges.

A thorough search of the literature bearing on the subject discloses only one parallel case, reported in the *Berliner klinische Wochenschrift* (1883) by Demme, of Berne, as follows:

An eight year old boy suffered from ozena ever since he was six months old. Syphilis could be excluded with certainty, nor did the child come from a family tainted with tuberculosis. But when four months old, he was placed in a family where the husband suffered from pulmonary tuberculosis. Examination showed on the right mucous membrane a group of nodules similar to those described in the previous case.¹ Besides there were several ulcers caused by the breaking open of the nodules, about lentil size, with uneven edges on larinaceous ground. In the preparations made from the very evil smelling nasal secretion bacilli were frequently demonstrated, on several occasions even in large numbers. About a week later the child died from acute tuberculous meningitis, which bore an exceedingly violent character. At autopsy the bronchial glands, lungs, and abdomen were found to be completely free from tuberculous infection, while the microscopical examination of the nodules above referred to and of the ulcerous groups of the septal mucous membrane revealed moderately numerous bacilli, mostly arranged in groups and partly imbedded in giant cells.

The nearest approach to a similar case is cited by Dr. Koplik in the *Journal of the American Medical Association* (1907) in his elaborate article on the Clinical History and Recognition of Tuberculous Meningitis. The case was that of a ten year old

boy who was struck on the nose by a very hard snowball, the nose becoming swollen and red, but apparently in a normal condition one week later. The boy, however, contracted tuberculous meningitis, but in this case no nasal tuberculosis had been demonstrated.

The infrequency of generalization of nasal tuberculosis by way of the meninges, is mentioned by Dr. Charles H. Knight in the *Laryngoscope* (1904), in which paper Demme's case is mentioned as unique. Dr. Knight accounts for the rarity of this complication by the fact that the flow of lymph is from the brain toward the nasal cavities—a fact which bears an important relation to all infectious diseases of the nose and accessory sinuses.

The possible influence of operative interference upon the spread of infection should be borne in mind. In the case of Mrs. M. no attempt was made to eradicate the disease by operation, only enough of the tissue being removed to establish the diagnosis and relieve symptoms.

In the absence of an autopsy the possibility of the meningitis having been due to a pyogenic and not to a tuberculous infection deserves consideration. Our diagnosis is based on: 1, the slow onset, (four days of headache and aural symptoms preceding any marked systemic disturbance); and 2, the fact that the meningitis was confined to the base of the brain and did not become general nor spinal. These things in connection with the extremely large area of tuberculous infiltration in the nose, give a strong preponderance of evidence that the meningitis was of tuberculous origin.

Published statistics of nasal involvement found at autopsy of large numbers of tuberculous cases show a percentage of less than 0.25, which further explain the scarcity of cases with meningeal extension.

15 CENTRAL PARK WEST.

Therapeutical Notes.

The Apioi of the New French Codex.—At a meeting of the *Société de thérapeutique* of Paris, held on June 23rd, Chevalier protested against the form of apioi now official in the French pharmacopœia (*La Presse médicale*, June 30, 1909). The Codex prescribes that the official apioi shall be obtained from parsley seeds, says the author, and that it shall form colorless crystals. [The Codex says nothing about seeds, but it does specify that apioi should form long colorless crystals.—Abstractor.] The specification is objected to as regrettable in view of the French industry in the apioi of green color so long familiar as a product of France. The point is also made that the green apioi has properties superior to the crystalline product, being an antispasmodic where the crystalline product is a convulsant. The price of the crystalline apioi also is higher than the product formerly official. French pharmacists are also protesting against the new characters prescribed for apioi, and the *Bulletin commercial* of June 30, 1909, contains an article by M. Mathurin, pharmacien de 1re classe, in which the introduction of crystalline apioi is stigmatized as a

¹"The previous case" had nothing to do with meningitis.

grave error. The plea for its introduction that, being crystalline, it is less easily adulterated, is, M. Mathurin says, untenable, since from its low melting point, 30° C., it is liquid in warm weather. It cannot be manipulated in a natural condition and has to be diluted with oil or with an excipient. It is stated that the inert residual fat which is a by-product in the manufacture of active liquid apiol has been sold as "crystalline apiol" when dissolved in oil and enclosed in capsules. Not only so, crystalline apiol is said not to be procurable in commercial quantities. Only two manufacturing firms are known to make it, and these are not in a position to supply any quantity.

NEW REMEDIES.

In a review of the remedies introduced into medicine during the first three months of 1909, published in the *Pharmazeutische Post* for July 6, Dr. W. Göbbling mentions the following:

Athensa is an alcohol free Athenstädt's tincture of iron. It contains, like the old tincture, 0.2 per cent. of iron in the form of a light, absorbent, alkali free, iron saccharate. The sugar contained in it amounts to 25 per cent. It does not resemble either in odor or taste the old Athenstädt's tincture of iron.

Athiyon is an antigonococcus serum, the discovery of a Dr. Brück, which has not been used to any extent as yet.

Arsenical Preparations.—Two compounds of atoxyl are new—arsenophenylglycin and paraiod-phenylarsenic acid. The latter compound is a stable body, soluble in alcohol, acetone and hot acetic acid. From this body is formed the diiodide of paraiod-phenylarsenic acid. The sodium salt of arsenophenylglycin is one of the latest of the arsenical compounds to be proposed for use in the treatment of trypanosome infection. It forms a yellow powder which is readily soluble in water. Exposure to the air turns it a reddish brown color.

Atoxyl Blaud capsules are, as the name implies, a combination of Blaud's pill mass with atoxyl, which are recommended for use in the treatment of neurasthenia; each capsule contains three-quarters of a grain of atoxyl.

Cariesan is the name given to tablets used in the treatment of dental caries. Proceeding on the theory that caries of the teeth is caused by a lack of alkaline sulphocyanides in the saliva, cariesan tablets contain an alkaline sulphocyanide combined with diastase. One tablet is given in the morning and at midday, and two at night.

Quinine atoxyl capsules contain in each, atoxyl, 0.01 gramme; quinine hydrochloride, 0.05 gramme; strychnine nitrate, 0.0008 gramme; and Blaud's pill mass, 0.03 gramme.

Coryzol is an emulsion like mixture having as its active constituents formaldehyde and oil of eucalyptus. For use fifteen or twenty drops are placed on a handkerchief and inhaled from time to time.

Damiacitin is the name applied to pills containing extract of damiana, extract of muira-puama and ovo-lecithin, of each 0.05 gramme.

hydrochloride, 0.002 gramme, combined with rhu-barb and licorice. They are recommended for use in the treatment of sexual neurasthenia.

Desalgin is a chloroform preparation in powder form for internal use. The chloroform is exhibited as an albumen compound, about 25 per cent. of the drug being fixed in it. It is intended for use as an analgesic and anodyne in forms of colic.

Ferroplasma is the name given to an organic form of iron obtained from the plant *rumex crispus* (yellow dock). The preparation is said to be readily absorbed in the system and not to cause constipation.

Hordenine sulphate has been used with good results as a heart tonic. It is not so active as the drugs ordinarily used, such as digitalis, strophanthus sparteine, and caffeine, but it has the advantage of being nonpoisonous and can be given in many cases as a substitute for the drugs named. Hordenine is also beneficial in overcoming constipation.

Lactoform is a formaldehyde albumen compound which is made by acting on milk in a vacuum. It is used as an external application in rheumatism.

Luesan is an albumen mercury compound put up in tablet form. Each tablet represents 0.0226 gramme of mercury. The preparation is said to be less poisonous than corrosive sublimate and less quickly absorbed into the system.

Merochinol is the mercury salt of an oxychinoline sulphoacid which is recommended in syphilis, used by the mouth, hypodermically, and by external application.

Nesain is the name of an organic arsenic preparation, a compound of arsenic with protein. By its use it is possible it is said to introduce a larger quantity of arsenic into the system than is the case with the use of atoxyl. It is used hypodermically in the form of a 10 per cent. solution.

Neuroton is a salicylate of spermanuclein which is said to be useful in all cases of lowering of the vitality.

Pantopon is, as its name implies, a combination of all the alkaloids of opium combined in the form of a hydrochloride salt. One gramme of pantopon is taken to represent five grammes of opium, equalling 0.05 grammes of morphine plus 0.04 grammes of related alkaloids, the whole equalling 0.9 gramme of the total alkaloids of opium. It forms a brownish powder and dissolves to a clear brown solution. The dose of pantopon is double that of morphine.

Phenostal is a name given to a carbolic acid tablet previously described as a compound of phenol and oxalic acid.

Syrgol is a new silver compound in which the silver exists as a colloidal oxide. It forms dark brown, glistening, leaflike crystals, without odor, which dissolve slowly but completely in two parts of water, and is not thrown out of solution by mineral acids or albumen. It is soluble also in warm glycerin but it is insoluble in ether, chloroform, or benzol. It is said to contain 20 per cent. of silver.

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THE HEROIC NONCOMBATANTS.

The Career of the Army Surgeon was the title of the commencement address delivered at the Army Medical School on May 29th by Dr. Roswell Park, professor of surgery in the University of Buffalo and a member of the Army Medical Reserve Corps (*The Military Surgeon*). The temptation is always, said Dr. Park, to lay the most stress upon accounts of such heroism as happens to be most publicly performed. Though this is not unnatural, it is often unjust. It is perhaps not kind, he continued, to think that a person would ever be more courageous in public than in private, but it is to be feared that human nature is not always free from the temptation of publicity.

But the real silent heroes, says Dr. Park, are those who engage in duties which have even more of danger about them than spectacular performances upon the battle field. "Take, for instance," he says, "the work done by Major Reed and Dr. Carroll, who devoted themselves for months to the study of yellow fever. Many a man will stand upon the field of battle permitting himself to be fired upon, but how many will deliberately submit to being bitten by insects believed to be carriers of the germs of yellow fever?" Dr. Carroll had the quiet kind of bravery that tolerates the attacks of insects believed to be carriers of the germs of yellow fever. He allowed himself to be bitten by a mosquito that

twelve days previously had filled itself with the blood of a yellow fever patient, and he consequently suffered with an attack so severe that he barely escaped with his life.

"Dr. Lazear," adds Dr. Park, "permitted the same experiment upon himself, but was not at that time infected; but some days later, while in the yellow fever ward, he was bitten by a mosquito, made careful note of the fact, acquired the disease in its most hideous form, and died a martyr to science, as true a hero as ever died upon fortress or man of war."

The facts recited by Dr. Park are well known to our readers, but it needed a man of his vividness of portraiture to bring out the heroism of the medical officers who offered themselves as subjects in the investigation of an hypothesis not before proved. The names of those heroes, noncombatants as they were, will go down in the annals of medicine as those of her most illustrious devotees.

THE ACTION OF CHLOROFORM ON THE
KIDNEY.

Far from being always inoffensive, chloroform possesses a pronounced noxious action, and the lesions it produces in the liver and the violence of the hæmolysis that it causes are well known. It exerts its bad influence on the delicate parenchymata, foremost among them being that of the kidney. In a recent thesis (Paris, 1908), Stankiewicz has shown that renal changes are encountered with great frequency after the administration of chloroform. After anaesthesia with this drug albumin is found, also casts and various abnormal urinary sediments, all of which indicate the presence of a mild nephritis, which, however, is usually temporary. After the administration of chloroform there is, both in man and in animals, a diminution in the quantity of urine secreted, after which there is a compensatory increase, so that usually the urine is greater in amount than before chloroform was administered. When the amount of chloroform given is very considerable, the diminution of the urinary secretion lasts for a number of hours after the operation, and in some cases there may even be anuria.

The influence of the administration of chloroform on the quality and quantity of the urine secreted appears to be principally due to a direct action of the anaesthetic on the glandular epithelium. In point of fact, autopsies made on both animals and men who have died after chloroform anaesthesia have often shown degenerative lesions in the tubuli contorti. Thus the noxious action of chloroform upon the kidney may explain the cause of death occurring sev-

eral days after anæsthesia with this drug. In order to avoid the bad effects of chloroform on the kidney, active diuresis should be produced after chloroform has been administered, and all operations requiring a protracted anæsthesia must be avoided in those instances where there is a renal lesion of long standing. Anæsthesia with chloroform is, under these circumstances, dangerous, and ether should be used instead. In renal and hepatic subjects anæsthesia with chloroform should always be of short duration, for otherwise serious results may occur.

MARIE'S REVISION OF THE APHASIAS.

II.

Putting aside the technical defects and lowered critical qualities of Moutier's study, what has been the trend of the discussion of Marie's work? It was eagerly embraced by some even before the evidence was submitted, while rejected by others quite as prematurely. It is hardly the place here to present a catalogue of references, but a few of the more valuable criticisms are worthy of cursory notice. From Wilson's masterly review (*Brain*, 1908) of the work on apraxia stimulated by Liepmann it would appear that a limb muscle movement memory centre, quite homologous to that of the tongue muscle movement memory centre, exists, and that therefore Marie's general denial of the existence of anything of the general type is seriously questioned, if not definitely disproved. As to the second and main feature of Marie's distinctive criticism, namely, that the third frontal convolution is not involved in disturbances of speech, the evidence seems to accumulate to show that he has been hasty and perhaps superficial. In the first place, the study of motor aphasia has undergone considerable modification since Broca's day, and the careful historian should know that the original closely limited gyri of Broca are known to have been accorded considerable extension and more careful delimitation, especially by Campbell and Brodmann. The external surface of the third frontal convolution is not Broca's convolution, physiologically speaking: patients showing no macroscopic lesion of Broca's convolution do, nevertheless, show fibre tract lesions; and Déjerine has shown that even Marie's quadrilateral area includes fibres coming from the third frontal convolution.

To summarize very briefly, then, it would appear that we are not yet in a position to abandon the notion of the importance of Broca's convolution in the functions of speech. What is meant by an intelligence centre? For many, this idea of Marie's is the great advance he has made in the aphasia question. For others, however, for the most part psychiatrists,

whose studies of mental functions entitle them to a hearing, it means that Marie has ruthlessly thrown away all modern attempts to analyze what intelligence consists of and gone back to a primitive conception of intelligence in general which hardly does credit to a layman, much less a neurologist. To call one's opponent a psychologist, as Marie does, does not dispose of the mass of psychological facts that renders his point of view academic if not lacking in the fundamentals of logic.

As to Marie's quadrilateral or lenticular zone, it would appear that its great extent and lack of clear characterization prevent a complete critique. Here is an enormous portion of the brain endowed with definite functions—a great basket, almost without bottom or sides—containing so many important structures that it is almost useless to attempt to correlate symptomatology with anatomy. Certainly Marie's only piece of detail which has been forthcoming concerning this area, namely, that the lenticular and caudate nuclei are important motor mechanisms in the function of speech—an idea, curiously enough, advocated in almost the same terms by Wernicke in 1874, and then disproved later by himself—seems impossible of rational support.

Thus the analysis of the work of the last few years leaves the aphasia problem perhaps less settled than ever. That the original ground plans of Broca and Wernicke are still valid as working principles seems undeniable. Further study can proceed constructively only on the basis of accurate microanatomical study if completely satisfactory results are to be attained. Certainly the aphasia problems are in need of revision and have been in a constant state of revision since Bouillard's day, but a revision such as Marie has suggested seems a deplorable replacement of "small errors by grosser ones," as Liepmann puts it (*Neurologisches Centralblatt*, May 1st.)

COLLOIDAL MEDICATION.

The success reported by Credé, Vaivrand, Minet, Robin, and others in using colloidal preparations to combat infectious diseases is a sign that the elemental forces are being brought to bear upon pathological processes in an effort to produce an environment characterized by "bactericidal, antitoxic, catalytic, and leucocytogenic" influences. If Netter is responsible for this attitude in therapeutics, at least to Credé the primary impulse may be attributed. It is true, says Minet, in the *Echo médical du Nord* for June 13th, that Spillman, of Nancy, with a list of cases of pneumonia unsuccessfully so treated, opposes the enthusiasm of Credé, whose reports are so favorable. But many other observers have met with

striking results, and have published in detail just what they have observed.

As a matter of fact, injections of colloidal silver may cause an elevation of temperature of one degree, but this is followed within twelve hours by a notable reduction in the fever and a general effect for good upon the patient. Etienne advises two daily injections continued into the convalescent period. Leucocytosis is greatly encouraged, say Raoul de Laire, Caussade, and Joltrain. As long ago as in 1890 the studies of Tschistovitch in the Pasteur Institute showed the need and process of leucocytosis in this connection. Minet quotes Netter, Hédon, and Gompel to show the innocuous nature of such injections. We must admit that, between the subcutaneous administration of a colloidal mineral and the introduction of the same heavy element by electrical means, the former has the advantage of simplicity. Not every physician to-day is prepared to give electrotherapeutic treatment wisely and well. If in this age of specializing a new field for the medical chemist in the matter of reinforcements has developed, so much the better, and may the fight against pneumonia, septicæmia, and all infectious processes go bravely onward!

THE RENAL COMPLICATIONS OF PNEUMONIA.

In the prognosis of pneumonia, independently of the local and general manifestations of the disease itself, a consideration of the functional condition of the various viscera should be included, and particularly that of the kidneys. Renal changes during pneumonia have been known for a long time, but of late years have been more carefully studied than before. True nephritis is less frequently met with than nephritis which has become grafted on the kidney which is the seat of an old lesion. Here we find the kidney covered with ecchymoses, and there are patches of congestion and diffuse changes which are associated with parenchymatous and interstitial lesions. These kidneys frequently present small miliary abscesses containing the pneumococcus, and are usually present in those parts of the kidney where there is a hemorrhagic process.

The evolution is often latent and only made evident by the presence of albumin in the urine. The lesions are not always simply those of acute nephritis, because abscesses in the midst of the renal parenchyma have been found in which the presence of the pneumococcus has been demonstrated recently by Monisset and Chalié (*Lyon médical*, May 23d). This discovery is of considerable importance, because in pneumococcic septicæmia such abscess formation is not encountered. It is true that Firket and Bizzozero have described small abscesses in the

kidney in cases of pneumonia, but they were extremely small and contained the bacteria of secondary infection and not the pneumococcus.

IRON IN THE TREATMENT OF ELEPHANTIASIS.

Passed Assistant Surgeon P. S. Rossiter, of the navy (*United States Naval Medical Bulletin*, July), records his experience with Du Broglie's method of treating elephantiasis by the administration of thirty drops of tincture of chloride of iron three times a day. Dr. Du Broglie, an officer of the French colonial medical service, employed rest in bed and bandaging of the affected parts in conjunction with the iron. Dr. Rossiter, however, made but little use of bandaging and allowed all his patients to continue at their work. He found that the treatment was decidedly efficacious in diminishing the size of the affected parts, and that it was particularly serviceable in reducing the frequency of the attacks of elephantoid fever. He is inclined to think that the routine use of the remedy in districts where the disease is endemic would prevent it. Tincture of chloride of iron, as many of our readers are aware, was formerly much relied upon in the treatment of erysipelas, and the traditional hazy connection between erysipelas and elephantiasis may have led Du Broglie to try the chalybeate in elephantiasis.

A CORRECTION.

In our last issue, in an article entitled Caisson Disease, we said that, so far as we were aware, there was no medical man whose experience with the disease exceeded or equalled that of Dr. L. M. Ryan, of Brooklyn. Dr. Ryan modestly disclaims the distinction. In a note dated July 31st he says that, while he wishes to thank us for the way in which we spoke of his article, he would like to correct our impression in regard to the point mentioned. "So far as I know," says Dr. Ryan, "Dr. A. J. Loomis, of Jersey City, has examined more men for work in the compressed air and has treated successfully more cases of caisson disease than any other man. I wish to acknowledge my indebtedness, for a great deal of information and for many valuable suggestions, to an association with him which extended over a period of more than two years."

DR. KNOPF'S NEW BOOK.

Though we have already published a short notice of Dr. S. Adolphus Knopf's work entitled *Tuberculosis, a Preventable and Curable Disease*, the recent receipt of an errata slip from the publishers, Messrs. Moffatt, Yard, & Co., reminds us that

we had intended to make further mention of the book. The erratum noted by the publishers concerns an erroneous title to Chapter II, "Duties of the People," which should have read *What the Patient Should Know Concerning the Disease*. We take this opportunity of adding that the book is one of very great value to physicians as well as to lay officials who are more or less charged with the care of consumptives. It is such an admirable résumé of our knowledge concerning tuberculous disease, and so abounds in wholesome teaching, that no medical man who reads it can fail to obtain from it very essential additions to his stock of resources for the management of tuberculous patients.

News Items.

Changes of Address.—Dr. Otto M. Schwerdtfeger, to 116 East Sixtieth street, New York.

The American Electrotherapeutic Association will meet in annual session in New York city on September 28, 29 and 30, 1909.

Huron Road Hospital, Cleveland, which was closed for several months, was opened for inspection on July 7th. Extensive alterations have been made, and the building has been refurnished and redecorated throughout.

The Italian Medical Society of New York was incorporated on August 2d. The directors are: Dr. Antonio Stella, Dr. Vincenzo Sellaro, Dr. Antonio Scaturro, Dr. Giuseppe Tomasulo, and Dr. Antonio Tarditi, all of New York.

Improvements at St. Luke's Hospital.—Plans have been filed for remodelling the bacteriological laboratories of St. Luke's Hospital, New York, and also for remodelling the first floor of the southern wing into a menagerie for the animals used in experimentation. These improvements will cost about \$25,000.

A Large Summer Class at Columbia University.—Nearly two thousand students are availing themselves of the summer classes at Columbia, which breaks all previous records by about four hundred. Of the total number of students, twenty-one are studying at the College of Physicians and Surgeons.

Personal.—Brigadier General George H. Torney, surgeon general of the United States Army, and Major Paul F. Straub, of the medical corps, will represent the United States Army at the International Medical Congress, which will open in Budapest this month. During the absence of General Torney, Colonel Valery Havard will act as surgeon general.

A Surgical Operation Performed at Sea.—While the *Mauretania* was in midocean, an operation for appendicitis was performed on one of the firemen by Dr. B. Sydney Jones, the ship's surgeon, assisted by Dr. Walter B. James and Dr. Francis T. Kinnicutt, of New York, who were passengers on board the steamer. Surgical intervention came too late, however, as the patient died soon after the operation. He was buried at sea.

The Wisconsin College of Physicians and Surgeons has issued its seventeenth official announcement, which is the first since it became the medical department of Carroll University. In the calendar for the college year of 1909-1910, Monday, October 4th, is given as registration day, and July 7th the last day of the college year. The bulletin also contains a complete list of the faculty of the college. Dr. Wilbur O. Carrier is president, and Dr. Thomas C. Phillips is dean of the faculty.

Mortality Statistics of St. Louis.—During the month of May, 1909, the total number of deaths from all causes reported to the Department of Health was 880, as compared with 783 for the same period in 1908. The annual death rate in a thousand population was 14.36 for one month. The total infant mortality was 211; 121 under one year of age, 52 between one and two years of age, 21 between two and three years of age, 10 between three and four years of age, and 7 between four and five years of age.

Heart is the name of a new periodical which recently made its appearance in London, under the editorship of Dr. Thomas A. Lewis. The publication, which appears to be issued quarterly by Shaw & Sons, is to be devoted to a study of the circulation, with a view to recording more fully investigations regarding the fluctuations of arterial blood pressure and their relation to health and disease. The first issue contains contributions from Dr. Arthur R. Cushny, Dr. James Mackenzie, Dr. Thomas Lewis, and Dr. Leonard Hill.

Cincinnati's New Board of Health.—On Saturday, July 31st, the Board of Public Service ceased to act as the Board of Health, and on Monday, August 2d, the new board of health took charge of the health department. This new board consists of the following members: Dr. Edward W. Walker, for five years; Dr. George A. Fackler, for four years; Major Frank J. Jones, for three years; Dr. John H. Landis, for two years; and Mr. Clifford Shinkle, for one year. The successor of each will be appointed for five years.

Women Physicians Wanted by Missionary Societies.—The Student Volunteer Movement, representing missionary societies of various denominations, has issued a call for 351 men and women to take positions in foreign countries. The list of persons wanted includes 28 women physicians. Most of the workers are needed in China, but some will be sent to India, Japan, Africa, Turkey, and Asia Minor. It will be necessary for those accepting the positions to know the languages of the countries to which they are to go, but if they do not already understand them, sufficient time will be given them to acquire the knowledge. The workers will be paid for their services.

New Buildings for the Medical Department of Creighton University.—The contract has been let for the third of the group of buildings for the medical department of Creighton University, Omaha. The new building will be devoted to laboratory purposes. The architecture is Italian renaissance, in harmony with the other buildings of the institutions, and grey pressed brick will be used for the outer walls. The estimated cost of the building and equipment is \$60,000, and it is expected that it will be ready for occupancy on January 2, 1910. There still remains of the property bought by the university a corner lot, on which a maternity and emergency hospital will be erected in the near future.

The Mortality of Connecticut.—The Monthly Bulletin of the State Board of Health shows that during the month of June, 1909, in the 168 towns from which reports were received there were 1,210 deaths from all causes, corresponding to an annual death rate of 13.9 in a thousand population. Twenty-nine towns were reported as having had no deaths during the month. The total infant mortality was 321; 229 under one year of age and 92 between one and five years of age. There were 88 stillbirths. Of the total number of deaths reported, 92 were from tuberculosis, 78 from pneumonia, 135 from diseases of the nervous system, and 119 from heart diseases.

The Laying of the Cornerstone of the Pennsylvania State Hospital for the Insane.—The ceremonies attending the laying of the cornerstone of the new State asylum for the criminally insane, at Fairview, Pa., on Saturday, July 24th, were largely attended by representative men of the State. The invocation by the Rev. Charles Lee, of the Carbondale Presbyterian Church, was followed by an address by the Hon. Henry F. Walton, of Philadelphia. Then followed the address of the day, which was delivered by Dr. Charles G. Wagner, superintendent of the Binghamton, N. Y., State Hospital. Through an inadvertence this address was credited to Dr. Ferris, president of the New York State Commission in Lunacy, in an item which appeared in our last issue.

New Buildings for the Medical School of the University of Nebraska.—Plans for the proposed group of buildings to be erected on the campus of the college of medicine of the University of Nebraska, in Omaha, have been accepted. The \$1,000 prize offered for the best designs has been awarded to Messrs. Schipley, Rutan, & Coolidge, of Boston, designers of the Harvard Medical School, and of the University of Pennsylvania Medical School. The estimated cost of the buildings is \$1,500,000. The group consists of nine buildings built about a quadrangle, with a hospital in the centre, and an additional building for a heating plant built off the main campus. It is expected that it will take some years to complete the entire group of buildings.

Appointments.—Dr. Henry Baldwin Ward, for many years dean of the medical faculty and professor of zoology at the University of Nebraska, has been appointed professor of zoology in the University of Illinois.

Dr. Israel S. Kleiner, assistant in physiological chemistry in the Yale Medical School, has been appointed demonstrator and instructor in physiological chemistry in the Medical Department of Tulane University, New Orleans.

Dr. Victor C. Myers, university fellow in physiological chemistry at Yale University, has been appointed adjunct professor of physiological chemistry in the Albany Medical College, Medical Department of Union University. Dr. Myers has also been made director of the laboratory.

Second International Food Congress.—Announcement is made by the Society of the White Cross of Geneva that the second international congress for the repression of adulteration in foods, chemical products, drugs, mineral waters, etc., will be held in Paris from October 17th to 24th of this year. The first congress was held in Geneva in September, 1908. Delegates from all over the world will be present at this congress, representing not only the industrial section of the food and drug supply, but the technical side as well. The programme, which has just been received, shows that the work of the congress has been divided into three sections, as follows: First Section, alimentary technology; second section, hygiene; third section, crude drugs, essential oils and crude aromatic substances, chemical products and mineral waters. Dr. Landouzy is president of the Section in Hygiene. The general secretary of the congress is M. Ch. Franche, 16 Vendôme Place, Paris.

Medical Libraries in the United States.—The United States Bureau of Education has issued an interesting volume of statistics concerning the public, society, and school libraries having 5,000 volumes and over. According to these statistics there are in the United States 2,298 libraries which contain 5,000 volumes or over. Of these, thirty-two are distinctly medical libraries, seven of which are in New York: five in Massachusetts; five in Pennsylvania; three in Illinois; three in Ohio; three in Maryland; two in Missouri; and one each in Rhode Island, Louisiana, Texas, and California. The largest of these is of course the library of the Surgeon General's Office, which contains 162,000 volumes. The library of the Naval Medical School has 15,000 volumes. Aside from these government libraries, the largest library is that of the New York Academy of Medicine, which has 85,000 volumes, which also has the largest reported income, \$15,066 annually. The library of the Medical Society of Brooklyn comes next in size, with 65,000 volumes.

A Good Field for a Medical Missionary.—The province of Shansi, China, with a population of over 12,000,000, offers an inviting field to the Christian physician. Dr. W. A. Hemingway, a medical missionary of the American Board, has a small hospital at Tai-ku where he treated 2,177 cases last year, besides a large number of dispensary patients. He is not troubled with rivals, the nearest hospital on the north being 35 miles distant, on the east and south 150 miles, while on the west there is none nearer than Persia! With only two Chinese assistants and two native men nurses Dr. Hemingway has accomplished wonders since he went out in 1903. The entire province, once wealthy, is cursed with the opium habit, and many of its victims come to this hospital for treatment. The price of the drug has doubled lately, thus forcing the poor to abandon its use, and the law is being rigidly enforced that the poppy shall not be planted, nor opium brought into the province from outside. Dr. Hemingway is a graduate of the medical school of the University of Chicago.

Tuberculosis Exhibitions at County Fairs.—The New York State Charities Aid Association announces that it is preparing six exhibitions on the prevention of tuberculosis to be shown this year at forty-two county fairs and at the State fair at Syracuse. The first exhibit will be sent from New York on August 10th. These exhibits, which have been planned by experts, with a view to conveying scientific information concerning tuberculosis, will tell by means of striking pictures, original charts, and accurate data the story of the extent, nature, growth, spread, cure, and prevention of the great white plague, and its yearly cost to the State. These exhibits will be similar to those shown last year at the fairs, which were visited by more than a million people, and at which nearly 500,000 pieces of literature were distributed by those in charge. This year graduate students

of Columbia University have been prepared by a special course of lectures to manage and demonstrate these exhibitions, and it is expected that equally gratifying results will be obtained during the coming campaign.

The Massachusetts Association of Boards of Health held its quarterly meeting at Gallups Island on July 22d. One hundred and twelve members of the association attended the meeting, spending the afternoon on the island. Dr. Henry P. Walcott, chairman of the State Board of Health, presided. The topic chosen for discussion was typhoid fever. Dr. Leslie H. Spooner, of Boston, read a paper entitled *The Incidence of Typhoid Fever within the Massachusetts General Hospital from 1899 to 1908*, inclusive. Dr. Mark W. Richardson, secretary of the State Board of Health, spoke on the value of specific inoculation in the prevention of typhoid fever, and advocated the compulsory inoculation with a typhoid serum of nurses, hospital attendants, doctors, and army and navy men. Fifty nurses in the Massachusetts General Hospital have been inoculated with the serum and the results are awaited with interest. In the general discussion of the subject the fact was brought out by several speakers that "typhoid carriers" were more numerous than was commonly supposed.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending July 24th there were 1,415 deaths from all causes reported to the department, 153 less than for the corresponding week in 1908. The annual death rate in a thousand population was 16.17 for the whole city, and for each of the five boroughs as follows: Manhattan, 13.78; the Bronx, 20.24; Brooklyn, 18.20; Queens, 18.75; Richmond, 22.08. The total infant mortality was 624; 447 under one year of age, 107 between one and two years of age, and 70 between two and five years of age. Of the total number of deaths of children under five years of age, 320 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 61; pulmonary tuberculosis, 155; diarrhoeal diseases, 339; organic heart diseases, 103; Bright's disease, 81; cancer, 60; pneumonia, 42; bronchopneumonia, 76; sunstroke, 3; suicide, 13; homicide, 3; accidents, 72. There were 134 stillbirths. Six hundred and thirty-six marriages and 2,518 births were reported during the week.

The Health of Pittsburgh.—During the week ending July 17, 1909, the following cases of transmissible diseases were reported to the Bureau of Health: Chickenpox, 6 cases, 0 deaths; typhoid fever, 14 cases, 0 deaths; scarlet fever, 12 cases, 2 deaths; diphtheria, 4 cases, 2 deaths; measles, 6 cases, 0 deaths; whooping cough, 29 cases, 1 death; pulmonary tuberculosis, 40 cases, 8 deaths. The total deaths for the week numbered 168, in an estimated population of 572,000, corresponding to an annual death rate of 15.26 in a thousand population.

During the week ending July 24, 1909, the following cases of transmissible diseases were reported: Chickenpox, 2 cases, 0 deaths; typhoid fever, 15 cases, 2 deaths; scarlet fever, 9 cases, 1 death; diphtheria, 3 cases, 0 deaths; measles, 6 cases, 1 death; whooping cough, 30 cases, 2 deaths; pulmonary tuberculosis, 46 cases, 8 deaths. The total deaths for the week numbered 159, corresponding to an annual death rate of 14.45 in a thousand population.

A Policyholders' Health Bureau has been established by the Provident Savings Life Assurance Society, with Dr. Eugene L. Fisk, the company's medical director, at its head. The object of the bureau is to increase mortality savings as far as possible by helping policyholders to prevent disease and to discover the presence of disease in time to check or cure it. The work of the bureau will be conducted through the medium of correspondence with the policyholders, the issuance of health bulletins at stated intervals, and free medical examinations every two years, if policyholders request it. No medical treatment will be given, but every effort will be made to teach policyholders how to take care of their health. Mortality statistics show that more than one-third of all the deaths that occur in the United States are premature, and it is believed that proper instruction in preventive medicine will result in increasing the average length of human life by at least fifteen years. The first bulletin of the bureau, which has just been issued, contains a statement of the scope and plan of the bureau, some valuable information regarding the causes and prevention of the degenerative diseases, and a number of practical hints for the care of the health during the hot weather.

Medical Students at European Universities.—In the twenty-one German universities a total of 8,918 medical students were matriculated during the summer of 1909, of whom 1,091 were foreigners. The University of Munich is in the lead with 1,696 students, Berlin comes second with 1,162, while Rostock has the smallest number, 165. In the five universities of Switzerland there are 1,932 students, of which number 1,460 are foreigners. The total number of women medical students in the Swiss universities is 998, of which number 925 are foreigners. Geneva has the greatest number of students, 544, while Basel has the smallest number, 173. In Berne there are 420, in Lausanne, 334, and in Zurich, 461. Geneva also has the greatest number of foreigners, 455, of which number 307 are women.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 31, 1909:

	July 24—		July 31—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	537	155	504	140
Diphtheria	198	24	196	20
Measles	423	23	310	20
Scarlet fever	58	0	91	11
Smallpox .....	..	..	..	..
Varicella	16	..	25	..
Typhoid fever	71	8	56	10
Whooping cough	49	10	58	16
Cerebrospinal meningitis	3	4	10	8
Total	1,255	230	1,250	231

The Health of Philadelphia.—During the week ending July 24, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 48 cases, 4 deaths; scarlet fever, 25 cases, 1 death; chickenpox, 9 cases, 0 deaths; diphtheria, 49 cases, 4 deaths; smallpox, 3 cases, 0 deaths; measles, 25 cases, 1 death; whooping cough, 11 cases, 4 deaths; tuberculosis of the lungs, 65 cases, 65 deaths; pneumonia, 8 cases, 11 deaths; erysipelas, 5 cases, 2 deaths; tetanus, 1 case, 2 deaths; mumps, 3 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 115 deaths; peripneumonia, 1 death; dysentery, 1 death. The total deaths numbered 483 in an estimated population of 1,565,569, corresponding to an annual death rate of 16.04 in a thousand population. The total infant mortality was 179; 159 under one year of age, and 50 between one and two years of age. There were 29 stillbirths; 19 males and 10 females. The total precipitation was 1.27 inches. There was one death from heat and sunstroke.

Gifts and Bequests to Charity.—Mr. Ernest Frederick Schiff, of London, has donated \$500,000 to found the Schiff Home of Recovery, as a memorial to his brother Mr. Alfred George Schiff, who died last August. The foundation is for the benefit of convalescents after they leave the hospitals.

St. Peter's Hospital, Albany, N. Y., has received a gift of \$5,000 from a "friend of the hospital," who makes it a condition that his name shall not be divulged.

By the will of Mrs. Miriam S. Shattuck, of Boston, the Massachusetts General Hospital becomes a residuary legatee.

By the will of Dr. Andrew J. Dower, who died in Brooklyn a few weeks ago, leaving an estate valued at \$1,000,000, the following institutions become reversionary legatees: St. Peter's Hospital, the Jewish Hospital, the Methodist Episcopal Hospital, and the Brooklyn Bureau of Charities.

By the will of Mrs. Charlotte Haden, who died on June 20th, Washington charitable institutions become beneficiaries as follows: Florence Crittenton Hope and Help Mission, \$200; Washington City Orphan Asylum, \$300; Children's Country Home, \$200; Washington Home for Incurable, \$200; Episcopal Eye, Ear, and Throat Hospital, \$300; St. Catherine's Home for Working Girls (Sisters of Mercy), \$300; St. Vincent's Female Orphan Asylum, \$300; St. Joseph Male Orphan Asylum, \$300; Little Sisters of the Poor, \$300; House of the Good Shepherd, \$300; St. Ann's Infant Asylum, \$200; Home of Good Samaritan, \$100.

Dr. Jacob D. Lit, of Philadelphia, presented to Mount Sinai Hospital recently the sum of \$14,000, which represents the loans made to the hospital from time to time by Mr. Lit.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 22, 1909.

1. The Bearing of the Experimental Investigation of Tumors on the Tumor Problem in General, By E. F. TYZZER.
2. Primary Carcinoma of the Jejunum and Pleura; Report of Two Cases, By HORACE W. SOPER.
3. The Occurrence of Infantile Paralysis in Massachusetts in 1908 (Second Paper), By ROBERT W. LOVETT.
4. An Epidemic of Infantile Paralysis in Western Massachusetts in 1908, By HERBERT C. EMERSON.

1. **The Tumor Problem.**—Tyzzzer remarks that the pessimism sometimes expressed concerning the cancer problem serves only to discourage investigation. It is evidently based in many instances on the assumption that all tumors arise from congenital defects or abnormalities. The successive description and exploitation of a long list of pseudoparasites has served to bring discredit to this field of investigation, and the inadequacy of various theories advanced concerning the origin of tumors have served to strengthen the doubt. It is sometimes stated that there is no advance in our knowledge of tumors. In addition to the establishment by clinical observation of the part played by chronic inflammation, the experimental investigation of tumors has yielded certain definite results, which show such statements to be erroneous. First it is proved by transplantation experiments that cancer cells differ biologically by their property of unlimited growth from normal tissue cells. Peculiar conditions are not essential for the continuation of this growth. Certain tumors grow in normal individuals. Other tumors, however, require a special soil, they grow if transplanted into other parts of the same individual, but not if transplanted to other individuals. Growth is found to depend upon the biological character of the cells and not upon their dislocation. The experimental investigations have made untenable the interpretation of cancer as an infectious disease. The development of sarcoma in animals inoculated with epithelial tumors is interpreted by most investigators with whom it has occurred to be the result of the irritating influence of the tumor epithelium. The demonstration of the presence of substances which prepare tissue for growth on subsequent injury or stimulation is of great importance. There is, therefore, no more basis for pessimism with regard to the tumor problem than there was formerly for a similar attitude with respect to the problem of the infectious diseases. The latter remained unsolved until the advent of the experimental method of research. The experimental investigation of tumors has been but recently taken up, and it has already yielded valuable results. The problems of growth are of broad biological significance, and they should not be considered solely from the point of view of medicine. Up to the present time no more is known of the principles regulating normal growth than is known of those principles concerned in the abnormal growth of tumor tissue. It is possible that the investigation of one may eventually throw light on the other. The essential problem is, therefore, one of growth, and its investigation concerns the biologist, the zoologist, and the embryologist, as well as the physician.

4. **An Epidemic of Infantile Paralysis in Western Massachusetts in 1908.**—Emerson concludes from his observations that infantile paralysis is a disease produced by some external agent; that is, it is an infectious disease. It is mildly contagious at the most, and the harmful agent appears to enter the digestive tract in most instances. But until the organism causing the disease is known, it is impossible to say whether the infection is carried directly to the patient or by means of food.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 31, 1909.

1. Tropical Diseases—America's Opportunities and Obligations. By JAMES B. McLEROY.
2. The Present Status of Stomatology. By EDWARD C. BRIGGS.
3. The Physiology of the Eustachian Tube. By EDMUND PRINCE FOWLER.
4. Symptoms of Intracranial Complications of Purulent Otitis. By ARTHUR B. DEBEL.
5. Indications for Tympanomastoid Exenteration in Absence of Symptoms of Intracranial Complications. By E. ALEXANDER RANDALL.
6. Contraindications to the Tympanomastoid Exenteration in Chronic Suppurative Otitis Media. By E. A. CROCKETT.
7. Infectious Labyrinthitis. Two Cases with Account of Operation. By GEORGE F. COTT.
8. Pemphigus Neonatorum, or Bullous Impetigo Contagiosa of the Newborn. By O. H. FOERSTER.
9. Mongolian Idiocy. By HERBERT E. SMEAD.
10. A Case of Successful Removal of Cerebellar Tumor. By THEODORE DILLER and OTTO C. GAUB.
11. Lichen Planus Scleroticus, with Report of a Case. By JAY FRANK SCHAMBERG and ROSE HIRSCHLER.
12. Vincent's Spirillum and Bacillus Fusiformis in Pseudo-membranous Anginas. By WILLIAM R. MURRAY.

3. **Physiology of the Eustachian Tube.**—Fowler reviews Politzer's observations and records some of his own. From these experiments he makes the practical deduction that many individuals with chronic retraction of the drum membrane require but a slight increase in pressure in the nasopharynx to enable them during the act of swallowing to ventilate the ears adequately. The author thinks that the usual method of treatment is wrong, because it violently inflates the middle ear and at comparatively infrequent intervals, and, therefore, does not fully meet the conditions presenting. To provide a means for home treatment in these cases, he devised a method based on the following experiment. While the nostrils are tightly closed by pinching them together with the thumb and forefinger as near their free borders as is possible, gently increase the air pressure in the nose and nasopharynx by attempting to expire wholly through the nose, and, while maintaining this increased pressure, swallow. The result will be the inflation of both middle ears. This is brought about by the opening of the tubes during the increased nasopharyngeal air pressure, due to the patient's efforts and to the ascent of the soft palate. During the second stage of deglutition a negative pressure is avoided, because the primary increase in pressure and the bulging of the elastic lateral walls of the nose supply a sufficient amount of air reserve to enable the descent of the soft palate to occur without creating a partial vacuum in the nasopharynx. Until familiar with this method of inflation it is well to take a full breath preliminary to its performance. It would be unwise to prescribe

this treatment for some patients, as it is subject to abuse and harm might result from faulty execution.

5. **Tympanomastoid Exenteration.**—Randall remarks that the indication for radical exenteration in chronic tympanic suppuration with no intracranial symptoms should be advised for the expert operator when the hearing can not be improved beyond one metre for a stage whisper nor the discharge stopped nor the fœtor controlled by a reasonable trial of the most thorough cleansing. This must include painstaking use of probe, forceps, curette, and the intratympanic syringe, with antiseptic instillations, insufflations, and drainage wicks. The reasonableness of persistence must be conditioned on the patient's ability to submit to full treatment, the general health, and any such intercurrent complication, as facial palsy, stenosis of the canal by soft tissue hypertrophy or bony outgrowth or labyrinth caries, which have been shown to indicate often a graver prognosis, as well as to furnish an additional lesion which we may hope to bring to a cure by the evisceration. Labyrinthine involvement, as shown by vertigo, nystagmus, and loss of caloric reflex, electric response and bone conduction, constitutes a distinct indication for operation, as suppuration in this portion of the ear is very likely to involve the intracranial structures. It must be distinguished, if possible, from cerebellar disease, and especially from hysterical and other neuroses—a distinction easy in print, but often almost impossible in clinical cases. Tympanic exenteration must precede any evisceration of this vestibular apparatus, whether done for sepsis or for uncontrollable vertigo or tinnitus.

6. **Otitis Media.**—Crockett believes that the radical mastoid operation should only be performed on patients with double chronic suppurative middle ear disease except in the presence of symptoms indicating danger of patient's life. It is contraindicated and should not be performed on a patient's only hearing ear except under the same circumstances. It should not be performed on young children, that is children under five years, under practically any conditions. It should not be performed on a patient with tuberculosis or syphilis except in an emergency. It should not be performed on any suppurative middle ear process, of however long duration, until the ordinary forms of middle ear treatment have been faithfully carried out for a period of at least six months, except in the presence of symptoms indicating cerebral involvement with danger to life.

7. **Infectious Labyrinthitis.**—Cott believes that the operation is not in itself dangerous but patients often die from too long delay. The results ought to be uniformly good barring complications. Serous labyrinthitis sometimes occurs after a radical operation which has most of the symptoms of the suppurative variety with deafness to all sounds but the high forks, and recovery is complete in a week or ten days, without interference. Intercurrent attacks no doubt occur in fistula or as a forerunner of later and more severe infections.

8. **Pemphigus Neonatorum.**—Foerster remarks that in his experience the treatment of greatest efficiency in bullous impetigo contagiosa of the newborn is, with some modification, the same as that which may be regarded as specific in the impetigo contagiosa of adults. The vesicles or bullæ are

drained, the edges of the lesions are thoroughly exposed, and the entire base is freely anointed with two per cent. ammoniated mercury ointment. The lesions are dressed with gauze and cotton, and individually thus isolated. Mercurial intoxication has not occurred in his experience, even when extensively denuded areas were treated in this manner. To secure asepsis of the uninvolved surface the infant is bathed in a warm permanganate solution and sponged with the solution whenever the dressings are changed. External heat with strychnine and brandy in full doses are indicated as supporting measures if the disease is at all extensive.

MEDICAL RECORD.

July 31, 1909.

1. Parasitism and Natural Selection. A Medical Supplement to Darwin's Origin of Species.
By R. G. ECCLES.
2. Renal Tuberculosis and Its Surgical Treatment.
By CHARLES GREENE CUMSTON.
3. Some Comments on the Ætiology and Treatment of Intestinal Hæmorrhage.
By GEORGE M. NILES.
4. An American School of Tropical Medicine.
By ISAAC WILLIAMS BREWER.
5. A Case of Parenchymatous Keratitis in Acquired Syphilis.
By BURTON CHANCE.
6. The General Practitioner as a Dermatologist.
By BENJAMIN F. OCHS.

2. **Renal Tuberculosis.**—Cumston says that in the commencement of the renal process the general health is not changed, but when it has progressed the symptoms are those met with in any tuberculous infection, such as loss of flesh, night sweats, and elevation of the temperature. If there is a retention in the renal pelvis of the toxic products, there will be anorexia, vomiting, insomnia, chills, and sweating; in other words, all the symptoms of a septic infection. In dealing surgically with unilateral renal tuberculosis two operations are indicated, namely, nephrotomy and nephrectomy. Partial resection of the kidney is rarely feasible. To justify interference in unilateral renal tuberculosis, we must be sure that the kidney to be operated on is the diseased organ; also the probable degree of its involvement, and that its fellow is functionally healthy. Nephrotomy is indicated in order to drain the kidney and its pelvis in cases where the ureter has become occluded, resulting in a pus kidney. It has also been advised in cases where the organ has become so completely disorganized that its functional utility has become nil, and when the patient's condition is so bad that primary nephrectomy would in all probability be fatal. In considering the ultimate results of nephrectomy, the influence of this operation on the patient's general health and life must be considered, likewise the local results of the interference. When the second kidney is healthy, it is little influenced by the removal of its fellow, and if it has undergone compensatory hypertrophy it will carry on its functions perfectly. In primary nephrectomy a persistent fistula is very infrequent. In tuberculous pyelonephritis with marked distention, the closing of the fistula may be a matter of months. However, this usually occurs within a year. There is no doubt that fistula arising after nephrectomy is due to a suppurative process, because nephrectomy done for a renal neoplasm never gives rise to this complication. A pyelonephritis causes two special changes to take place. The first is a sclerous transforma-

tion in the fatty capsule which, by keeping the walls of the abscess spread apart, results in a fistula, the formation of which is quite similar to pleural fistula. The suppurative and the extension of the infectious lesions of the ureter can be avoided by suturing the end of the canal into the lower angle of the incision after removal of the kidney, and later on destruction of the mucosa may be attempted if the fistula is persistent and gives issue to much pus.

3. **Intestinal Hæmorrhage.**—In speaking of the treatment of hæmorrhage above the rectum Niles says that some general principles may be laid down: Physical and psychic quiet must be maintained, and anything tending to increase peristalsis, raise the blood pressure, or cause decomposition of intestinal contents must be sedulously avoided as far as possible. Should there be enough strength to admit it, no food should be given by the mouth or rectum for forty-eight hours, and no fluid except cracked ice sparingly. After this time only liquid foods should be allowed for a week longer, in the discretion of the physician. Opium, another sheet anchor in the treatment of inaccessible intestinal hæmorrhage, should be used sparingly, if at all, and then only in the form of morphine hypodermatically to calm bodily restlessness. To give enough opium to lock the bowels, thereby permitting their contents to undergo putrefactive decomposition, will defeat the main object in view. Ergot, also, is an idol that should be taken from its pedestal. The collapse of anæmia, as from any other hæmorrhage must be treated by external heat, counterirritants, or transfusion with saline solution. Hæmorrhages high up in the rectum or descending colon may be reached by ice cold or astringent injections, but these should not be used until other methods fail, as they tend to keep up undue peristalsis. Tampons of iodoform gauze, as recommended by a recent writer, are only mentioned as being likely to do much indirect harm and little direct good. When the hæmorrhage occurs from the transverse colon on up to the duodenum, remedies to control it must be given by the mouth or hypodermically. Where there are slight and more or less frequently occurring hæmorrhages, the bismuth salts—preferably the subgallate—in doses of 15 grains three to six times daily, are generally effective. Slightly more energetic in their action are tannic acid, tannigen, tannalbin, or tannigenaform in doses of 5 to 10 grains four to six times daily, but they often upset the stomach when continued more than three or four days. When the bleeding assumes an acute form, and active measures are necessary, the remedies most efficacious are adrenalin, gelatin, and calcium chloride in the order stated. Adrenalin is not indicated in all intestinal hæmorrhages. The condition of the blood pressure is the criterion for its use. "In hæmorrhages of short duration, where the pressure has not fallen to any extent, a judicious use of nitrites proves of more benefit than adrenalin. When the bleeding has been profuse, however, and a low pressure already exists it becomes vital that hæmorrhage should be checked without further reduction of pressure. Adrenalin finds its use in this field." The chloride and lactate of calcium have seemed to give good results by increasing the coagulability of the blood. Another hæmostatic agent of merit is the lactate of strontium, which may be given by hypodermoclysis

in doses of 15 to 30 grains. It is well, especially in bleeding from duodenal ulcer, to endeavor to keep the bowel contents alkaline by the administration of some efficient antacid such as sodium bicarbonate in full doses. After the active hæmorrhage is arrested it is advisable to continue these agents, either in smaller doses or at longer intervals for several days, during which time, rest and strict dietetic precautions should be enjoined. Should all the measures mentioned fail, surgical aid will of course be demanded, for in the case of malignant neoplasms, erosion of large vessels by ulceration or otherwise, or some forms of hæmorrhoids, medical treatment or local applications will necessarily be futile.

BRITISH MEDICAL JOURNAL.

July 17, 1909.

1. The Function of the So Called Motor Area of the Brain. By Sir VICTOR HORSLEY.
2. On the Extremes in Mutability of Symptoms in Disseminate Sclerosis. By J. DIXON MANN.
3. A Case of Convulsive Tic. By T. W. EDMONDSTON ROSS.
4. The Relative Advantages of Catheterization and Operation in the Treatment of Prostatic Enlargement. By HERBERT T. HERRING.
5. Home Conditions and Eyesight. By Professor KARL PEARSON.
6. Medicine or Surgery in Early Cases of Cancer. By SKENE KEITH.

1. Function of the So Called Motor Area in the Brain.—Horsley, in his Linacre lecture, gives the history of the study of the so called motor area of the brain, beginning with the recognition of the grave error made by Aristotle, who endeavored to guess at function by observing structure rather than living action, and who thereby naturally failed to understand the meaning and purpose of the brain. He then describes the case of a boy, aged fourteen, who had had no illness and suffered no accident, but at the age of seven athetoid movements of the left hand gradually developed, which then developed into violent convulsive movements of the whole upper limb, in which the arm was usually strongly flexed and adducted in jerks across the trunk, and more rarely flung out in abduction. The elbow was fixed in semiextension, the forearm strongly pronated, the wrist flexed, and the fingers either in an interosseal position or flexing and extending independently. The movement was worse on walking, and when his attention or the attention of others was drawn to it. When the limb was quiet his purposive or voluntary movements were normal and powerful. The reflexes, superficial and deep, were everywhere normal; his sensation—all forms—was also normal. Our author performed an operation, exposing the Rolandic region, stimulating the cortex with a Kroneiker graduated coil furnished with three dry Obach cells. The gyrus precentralis was carefully excised by making a vertical incision through the pia mater along the middle of the surface of the convolution, reflecting the pia mater to the sulci on each side and gently separating it to the bottom of the sulci so as to permit of excising the whole depth of the gyrus precentralis without any injury to the neighboring gyri or even to the vessels in the sulci, beyond the laceration of the smallest branches entering the portion of gyrus removed. From the result of his operation Horsley concludes that the so called motor area of the human cortex cerebri is really sensorimotor. The gyrus precentralis

is in man the seat of representation of (1) slight tactility, (2) topognosis, (3) muscular sense, (4) arthric sense, (5) stereognosis, (6) pain, (7) movement. The gyrus postcentralis is in man part of the arm area in which the sensorimotor representation is of the same kind as that in the gyrus precentralis, but in it probably provision for sensorial coordination is greater and that for efferent impulses less. The giant pyramids or Betz cells are not essential for the performance of purposive or voluntary movements. Purposive or voluntary movements can be performed after complete removal of the corresponding part of the gyrus precentralis.

4. Prostatic Enlargement.—Herring remarks that prostatectomy should not be undertaken unless the symptoms present are definitely ascertained to arise from that organ, and from nothing else. Urinary symptoms are very frequently attributed to the gland when in fact they come from quite a different cause. For instance—and this, perhaps, is the most common mistake—a patient complains of occasional retention, hæmorrhage, pain, etc.; a rectal examination is made; the prostate is found to be enlarged and is straightway accused, without further search, of being the cause of the trouble. What is the result? During the operation for removing the offending member a stone is found in the bladder, which could easily have been removed by lithotripsy and the patient restored to health in a week, whereas he is now condemned to pass through an unnecessarily severe ordeal. In skilful hands the x rays will nearly always eliminate such errors, even when the sound has failed to reveal the true cause. Prostatectomy should be deferred until after treatment by catheter has been tried. The patient may recover his power, or he may decide, when he knows exactly what to expect, to continue treatment. No harm can come of a delay of a month or more, and in septic cases much good will result, for the patient will improve and be in a better condition to bear the operation. Afterward, if the catheter fails or is found too irksome, recourse can be had to operation. When the patient is comparatively young, in good health, and has many years of life before him, operation is very rightly advocated as soon as it is proved that catheter treatment will not cure. The same may be said of those who, owing to their position in life, calling, or lack of funds, are unable to carry out the few simple details necessary in sterile catheterization. Prostatectomy undoubtedly is the best treatment when the prostate, by its mere size, has largely encroached upon the bladder space, and there is no residuum. The urine is clear and free from all signs of sepsis, yet the patient has constant and urgent calls to pass water both by day and night. Finally, the operation may be necessary in certain cases where the prostate is constantly bleeding and filling the bladder with clot which interferes with instrumentation and endangers the patient's life.

THE LANCET.

July 17, 1909.

1. Methods of Cataract Extraction; A Critical Review of the Methods at Present Advocated. By J. HERBERT PARSONS.
2. Senile Epilepsy, and the Vertiginous Attacks which Supervene for the First Time in Advanced Life. Illustrated by a Case of Cardioarterial Hypertrophy. By THOMAS D. SAVILL.

3. The Role of the Perineal Body during Labor and the Conduction of Delivery in Relation thereto.
By R. H. PARAMORE.
4. A Case of Endothelioma Myxomatodes of the Maxillary Antrum.
By HERBERT TILLEY and S. G. SHATTOCK.
5. The Fate of Damaged Joints: A Study of Cases of Injury, principally Fractures, Involving Joints Treated in the Massage Department of the London Hospital.
By RICHARD WARREN.
6. Pulmonary Tuberculosis Treated by Deep Muscular Injection of Mercuric Succinimide.
By J. EDWARD SQUIRE and J. A. KILPATRICK.
7. Notes on the Use of X Rays in the Treatment of Malignant Disease.
By C. E. IREDELL.
8. A Case of Severe Facial Carbuncle, with Ludwig's Angina and Parotitis, Successfully Treated by Vaccines, with the Administration of Repeated Doses of Citric Acid.
By H. B. WALTERS, RUSSELL COOMBE, and R. V. SOLLY.
9. A Case of Retinal Detachment in Pregnancy Associated with Nephritis.
By THOMAS WILSON and ROBERT BEATSON HIRN.
10. A Case of Acute Lupus Erythematosus.
By J. E. R. McDONAGH.

1. **Methods of Cataract Extraction.**—Parsons enumerates the chief advantages and disadvantages for simple and combined cataract extractions. The chief advantages of simple extraction are: Simplicity of the operation, including especially minimum of mutilation, of instruments required, and of instruments introduced into the interior of the eye; optical advantages of a round pupil—minimal dazzling, best visual acuity, and best field; cosmetic advantage of a round pupil; ease of reposition of the iris; minimal danger of incarceration of capsule in the wound; infrequency of prolapse of vitreous; greater protection of deeper parts of the eye from infection; absence of pain and bleeding from cutting the iris. The chief disadvantages of simple extraction are: Risks of prolapse of the iris; less efficient treatment of the anterior capsule; greater difficulty in expression of the nucleus; greater difficulty in removal of soft lens matter; greater danger of ring synechia and secondary glaucoma if iritis should occur. The chief advantages of combined extraction are: Greater ease in expression of the nucleus; greater ease in removal of soft lens matter; increased facility in dealing with the anterior capsule, and therefore diminished necessity for subsequent dissection; diminished risk of prolapse of the iris; diminished risk of secondary glaucoma. The chief disadvantages are: Greater complexity of the operation, including especially need of more instruments and of the introduction of more instruments into the eye, and greater duration of the operation; optical and cosmetic disadvantages; greater danger of incarceration of iris and capsule in the wound; greater danger of postoperative glaucoma; pain and bleeding from the iris.

2. **Senile Epilepsy.**—Savill summarizes the pathology of the various forms of syncopal, vertiginous, and epileptiform seizures which occur for the first time in advanced life: 1. Idiopathic epilepsy never arises for the first time in advanced life. 2. At least nine tenths of these syncopal, vertiginous, and epileptiform seizures are circulatory in origin. 3. Senile syncope is generally due to cardiac failure and low blood pressure. 4. Senile vertigo and similar head sensations (postural vertigo, interruptions of thought, etc.) are due to the disturbances of the regulator mechanism of the arteries in

different parts of the body owing to arterial hypermyotrophy or other arterial disease, not necessarily accompanied, so far as his observations go, by any notable alteration of the general blood pressure or of cardiac increase or diminution. 5. Senile epilepsy (convulsive attacks) is generally due to increased blood pressure with cardioarterial hypermyotrophy. All these attacks of senile syncope, senile vertigo, and senile epilepsy merge into and are associated one with the other; vertigo may occur at one time, convulsions at another, and the same patient may in the end die from syncope (when the heart is defeated). The treatment of epileptiform and other like seizures occurring for the first time in advanced life follows naturally from the preceding remarks. Having investigated the other possible causes, the main thing is to concentrate our attention on the circulation—examine the heart, the arteries, and above all (from the point of view of treatment) the blood pressure. Then we must be guided by what we find to administer treatment to raise or lower blood pressure, and to tone or steady the heart.

3. **The Role of the Perineal Body during Labor.**—Paramore says that attempts should be made to prevent secondary extension of the head. This is best done by the method described by Toffi, who advocated it as a means of perineal protection. When the anterior extremity of the head has appeared at the vulva and begins to distend it two or more fingers should be placed between it and the symphysis pubis and traction exerted backward. This should be especially done during the pains. It will be found that the natural tendency on the part of the head to extend can be easily overcome. Simultaneously, pressure may be applied above and behind the anus and is exerted upon the upper pole of the foetal head, not only tending to maintain the attitude of diminished extension but also actively assisting the expulsion of the head. It may be thought that such a manoeuvre will inevitably result in a tear of the perineal skin and other tissues. Strange to say, it does not do so; indeed, it frequently prevents such an accident, for it allows birth to occur with the least possible distention of the vulvar outlet.

6. **Pulmonary Tuberculosis Treated by Deep Muscular Injection of Mercuric Succinimide.**—Squire and Kilpatrick have treated fourteen patients with Wright's method (*New York Medical Journal*, August 29, 1908), but one case had to be abandoned. Of the thirteen patients who were treated some for various reasons—wishing to return to work, domestic trouble, having to undergo a surgical operation, etc.—were not able to remain as long in the hospital as one could have wished in order to give it a fair trial. The buttock was chosen as the most convenient place for injection, and every precaution was taken to sterilize both the needle and the part injected. For each injection 1/5th grain was dissolved in 10 minims of distilled water; this was injected into alternate buttock every second day, Sunday being excluded. In the case of the females no injection was given during the menstrual period. In all cases careful attention was paid to the teeth, and a mouth wash was used after each meal. While none of the patients objected to the form of treatment it cannot be said that any of them liked it.

With few exceptions there was always a brawny lump, varying from the size of the tip of one's little finger to the size of one's thumb or a little larger at the seat of injection for about forty-eight hours. On one occasion a lump arose in about half an hour almost the size of one's closed fist; the same evening it was about half that size, and the next morning it had almost disappeared. All the patients complained of a slight burning or pricking pain at the seat of injection for a time, varying from six to twelve hours. This was more noticeable when the injections were first commenced, and later the patients complained less of it. Three of the patients felt faint after the injection on three or four occasions and one of them had a slight vomiting attack immediately after. The female patients complained less of the pain than the males. This may be explained by the fact that nature provided them with more adipose tissue in that region and therefore sitting down would cause less discomfort. The patients treated—six females and seven males, varied in age from fifteen to fifty-one years; all, with one exception, were more or less advanced cases, three patients having cavities and all had tubercle bacilli in the sputum. A remarkable fact that applied to most of the cases was the rapidity with which the physical signs decreased. This continued for the first four or five weeks. Then with two exceptions, most of the patients arrived at a stage where no further change could be made out, and some of them even returned to their former condition. In two cases the physical signs disappeared altogether.

7. X Rays in the Treatment of Malignant Disease.—Iredell observes that in superficial forms of malignant disease x rays may temporarily arrest the course of the disease, relieve the pain, diminish the discharge and heal up the ulcers. Probably x rays prevent the occurrence of superficial secondary deposits. Embryonic cells are more easily destroyed by x rays than are normal cells.

MEDIZINISCHE KLINIK.

June 13, 1909.

1. Cirrhosis of the Liver, By G. HOPPE-SEYLER.
2. Chronic Bronchial Diseases, Excluding Tuberculosis, By POSSELT.
3. The Psychical Diseases of School Children (Concluded), By FRITZ.
4. Nail Extension Treatment of Fractures of the Femur, By SCHWARZ.
5. The Hydratic Treatment of Neurasthenia, By A. FÜRSTENBERG.
6. The Prognosis in Tuberculosis with Special Reference to Balneology, together with Remarks Concerning the Early Diagnosis and the Tuberculin Treatment, By A. WOLFF-EISNER.
7. Viscosity and Albumin in the Blood with Different Forms of Nourishment, Particularly in Vegetarians, By H. DETERMANN.
8. Inorganic Preparations of Arsenic, By F. BLUMENFELD.
9. The Abortive Treatment of Syphilis, By OSCAR SCHEUER.
10. Delivery above the Symphysis, the so called Extraperitoneal Cesarean Section, By F. FROMME.
11. Infirmarys for Children by the Sea in Europe and Their Results, By HÄBERLIN.
12. Diseases of the Spinal Cord and Trauma from the Standpoint of Practical Jurisprudence, By PAUL SCHUSTER.

1. Cirrhosis of the Liver.—Hoppe-Seyler describes the stages of cirrhosis and recommends for treatment a diet somewhat mixed, finely divided in

form, fluid, or brothy, with little fat, well cooked and as free as possible from spices, such as pepper. No salad or vegetables prepared with fat, and generally no raw fruit, are allowed. Lean meat thoroughly cooked, in bad cases cut fine or shaved, may be given in small quantities. Alcoholic beverages should be denied as a rule, but when the patient cannot be deprived of them without loss of appetite light beers or wines may be given in small, accurately prescribed quantities. A true disinfection of the intestine cannot be made, but the bowels should be kept open with purgatives or mineral waters. In the later stages, characterized by stasis in the region of the portal vein, ascites, dilatation of the collateral veins, formation of varices on the gastric and hæmorrhoidal veins, and oedema of the lower extremities, more energetic treatment is necessary. The ascites may be relieved by puncture, diuretics are to be given, the condition of the heart and kidneys is to be observed and regulated. Mercurial preparations have been recommended many times as remedies in cirrhosis of the liver, but aside from the cleansing of the bowel by calomel, these preparations are chiefly beneficial when the cirrhosis is due to syphilis, and they should be pushed whenever there is suspicion of a syphilitic origin.

5. Hydratic Treatment of Neurasthenia.—Fürstenberg states that hydrotherapy, rightly used, is capable of excellent results not only in the treatment, but also in the prevention of neurasthenia. But it is necessary that the individual procedures be chosen so as to correspond in their strength to the desired stimulation, as the entire result depends on the exact dosage of this stimulation.

7. Viscosity and Albumin of the Blood with Different Forms of Nourishment.—Determann instituted a series of observations of the blood of vegetarians and of meat eaters to determine the influence exerted by different forms of nutrition upon the viscosity of the blood and of the quantity of albumin contained in it, and found that no remarkable difference could be obtained in this way. The viscosity of the blood seems to depend on many other things, and a change of diet cannot be expected to affect the condition of the blood therapeutically.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 15, 1909.

1. Desensitization to X and Radium Rays, By SCHWARZ.
2. The Passive Transmission of Excess of Sensitiveness in Tuberculosis, By BAUER.
3. The Diagnostic Importance of Diastolic Murmurs over Dilatations of the Aorta, By HOPPE-SEYLER.
4. Clinical Experiences with Intravenous Injections of Suprarenin in Cases of Cardiac and Vascular Collapse, By JOHN.
5. Contributions to the Treatment of Post Partum Hæmorrhages, By LABHARDT.
6. The Sterilization of Tuberculous Pregnant Women by the Total Extirpation of the Gravid Uterus with its Appendages, By MARTIN.
7. Relations between Accidents and Tumors, By GEBEL.
8. A Cheap and Convenient Method for Cutting away Plaster of Paris and Water Glass Dressings, By NEUMANN.
9. Cicatricial Contraction and Rigidity of the Left Hand after a Burn of the Third Degree; Transplantation of Skin from the Thigh; Recovery with Mobility of the Hand, By LOSSEN.
10. Max von Pettenkofer, By VON GRUBER.
11. Instructive Statements from the Statistical Year Book of the City of Berlin, By FISCHER.

1. **Densitization to X and Radium Rays.**—Schwarz discusses how to reduce the sensitiveness of the skin to x and radium rays because of the difficulty met with in treating the deeper seated tissues without burning the skin. He finds that if the metabolic processes in the skin are reduced there is a corresponding reduction in the sensitiveness to these rays, but he is not yet certain what method, mechanical pressure, air pressure, freezing, or chemical means, is best adapted to produce the desired result.

2. **Excess of Tuberculosis Sensitiveness.**—Bauer means by excess of sensitiveness the condition of the organism previously treated once with foreign albumin, bacterial albumin, or virulent solutions in which it reacts with pathological symptoms to the second, or repeated, introduction of the same substance.

3. **Diastolic Murmurs in Dilatations of the Aorta.**—Hoppe-Seyler says that a diastolic murmur most marked over the manubrium sterni and extending over the neighboring parts of the thorax to the right, perhaps up to the throat, is a good sign of a dilatation or aneurysm at the commencement of the aorta and is therefore a valuable symptom in the diagnosis of syphilis of the aorta.

4. **Intravenous Injection of Suprarenin in Collapse.**—John reports seven cases which go to show that in serious cases of cardiac or vascular collapse in which the usual remedies, such as strophanthine, caffeine, and camphor, are ineffectual life may be prolonged by the intravenous injection of 0.5 to 1 c.c. of suprarenin, either undiluted or diluted with 9 c.c. of physiological salt solution.

7. **Relations between Accidents and Tumors.**—Gebele reports a number of cases of sarcoma in which relations between these tumors and preceding injuries could not be denied, but an equally large number of bone sarcomata came under observation at the clinic during the same time in which there was no history of a preceding accident. He is of the opinion that repeated slight mechanical injuries create an irritation and favor the development of a tumor more than a single more severe accident or injury.

8. **Method for Cutting away Plaster of Paris Dressings.**—Neumann places beneath the plaster bandage a steel wire that extends a little distance beyond the dressing at each end. When it is desired to remove the dressing one end of the wire is seized with a suitable instrument and made to cut its way out.

RIFORMA MEDICA

June 21, 1909.

1. **Gastric Crises, and the Stomach of Patients with Tabes.** A Contribution to the Study of Gastric Chemistry and to the Pathogenesis of Gastric Crises. By G. TRIVARI. *Rev. Med. Chir. (Bologna)*, 1909, 11, 1.
2. **The Negri Bodies, the Lentz Bodies, and Certain Other Changes in the Nerve Centres in Rabies.** By L. D'AMATO and V. FAGGELLA. *Atti della Società di Neurologia e Psichiatria*, 1909, 11, 1.
3. **The Late Period of Syphilis and its Relation to the Early Stage.** By L. D'AMATO. *Atti della Società di Neurologia e Psichiatria*, 1909, 11, 1.
4. **Contribution to the Study of Disturbances of the Bladder in Diseases of the Spinal Cord.** By L. SEGRE. *Atti della Società di Neurologia e Psichiatria*, 1909, 11, 1.
5. **Schürmann's Reaction in the Serum Diagnosis of Syphilis.** By F. SCHÜRMAN. *Atti della Società di Neurologia e Psichiatria*, 1909, 11, 1.
2. **Negri's Bodies, Lentz Bodies, and Changes in the Nerve Centres in Rabies.**—D'Amato and

Faggella have tried to bring light upon the obscure question of the origin and character of the various bodies found in the nerve centres in rabies. They devoted themselves particularly to a study of various staining methods with a view of finding an elective stain for the internal corpuscles of Negri's bodies, so that these corpuscles may be recognized when present in the nerve centres. They found that a modification of Pappenheim's method accomplished this purpose fairly well. The sections were stained in a watery solution of methyl green (two per cent.) and pyronin (one per cent.), then distinguished in absolute alcohol slightly acidulated with acetic acid, or else with picric acid. For the rest, their technique was that ordinarily followed. With this method, the protoplasm of the nerve cell was stained a very faint lavender, the nucleus was most completely decolorized, but the nucleolus was well stained a purple red tint, while within it, were noted a few bluish black points, some of which were surrounded by a lighter zone. The cells of the neuroglia were colored a very pale greenish blue. The red blood cells were stained yellow. Negri's bodies appeared well defined with this method, especially their internal corpuscles. With this method, and using a magnification of 1,200 diameters, D'Amato and Faggella did not find any Negri bodies in the cornu ammonis, nor in the medulla of dogs inoculated with street virus, nor in the cornu ammonis of rabbits inoculated with fixed virus. They did discover these bodies in the cornu ammonis of dogs inoculated with street virus and killed before the appearance of hydrophobia. The authors furthermore studied, using Romanowski's method, the Negri bodies in the cornu ammonis of dogs killed immediately upon the appearance of rabies, and found that some of the Negri bodies consisted exclusively of an acidophile substance and did not show any internal corpuscles, while exceedingly few of these granules were found outside the Negri bodies. Small pieces of brain tissue, rich in Negri bodies, were deposited upon the brain vortex of rabbits, and the latter were killed after varying periods. It was found that while rabies virus developed at the site of inoculation, the Negri bodies gradually disappeared, and there were no granules in the brain tissue around the site of inoculation, that might be regarded as internal corpuscles of Negri bodies. Lentz's corpuscles were noted in the cornu ammonis of rabbits inoculated with fixed virus. These corpuscles never contained the same structures as did Negri bodies. Degenerative changes were noted by the authors in the cellular protoplasm of nerve cells, consisting of more or less large vacuoles containing granules and a metachromatic network resembling fibrin. Negri bodies did not show any fibrinous structure, nor did they show any relation to the neurofibrils which surrounded them. The "Lentz bodies" are probably also degenerative changes. From these researches, the authors conclude that very probably minute bodies identical with those found within the Negri corpuscles were scattered widely through the nerve centres. These minute bodies do not have anything in common with the black granules found by Babes in the nerve centres of animals with hydrophobia. Inasmuch as the internal corpuscles are absent in parts of the nervous

system in which the virus of rabies exists, and inasmuch as these corpuscles are often not visible, save during the period of incubation of rabies, they cannot be regarded as the sole parasitic agent of rabies. The fact that some Negri bodies have been found not containing any internal corpuscles, at the very beginning of the disease, shows that these corpuscles cannot be regarded as the agents which give rise to the formation of Negri bodies. Furthermore, the fact that Negri bodies became necrosed and disappeared when deposited upon the cortex of rabbits, while the virus of rabies was found in virulent form at the site of inoculation, speaks against the parasitic or protozoal character of these bodies.

THE PRACTITIONER.

June, 1909.

1. The Bearings of Pathology on the Prevention, Diagnosis, and Surgical Care of Carcinoma of the Cervix, By VICTOR BONNEY.
2. Some Points in the Treatment of Simple Fractures, with an Illustrative Case, By R. P. ROWLANDS.
3. Phthisis: Its Diagnosis and Treatment, By WALTER BROADBENT.
4. Hypertrophy of the Prostate, and its Operative Treatment, By HAROLD COLLISON.
5. Cerebrospinal Fever, By FRANK E. LARKINS.
6. Diseases of Children: A Review, By J. H. THURSFIELD.
7. Bacterial Vaccines and Rational Immunization, By E. C. HORT.
8. The First Three Weeks of Pregnancy: and the Practical Bearing of Recent Investigations on Our Knowledge of Ectopic Gestation, By JAMES PHILLIPS.
9. Some Points of Medical Interest in the New Children's Act, By L. A. PARRY.
10. Meat as a Source of Infection in Tuberculosis, By ARTHUR R. LITTLEJOHN.
11. Some Clinical Aspects of Cases Accompanied by Increased Blood Pressure, By H. O. BUTLER.

3. **Phthisis.**—Broadbent in speaking of the treatment says that in giving tuberculin, the best results will be obtained, if the opsonic index is taken a few times first, and the new tuberculin T. R. injected when the index begins to fall. After the injection, there will be a negative phase of a falling opsonic index for about twenty-four hours, followed by a rise to above the former line. A new injection is indicated when the index again begins to fall, which is usually in seven to ten days. Headache, rise of temperature, or a prolonged negative phase would show that too large a dose had been given, and a feeble opsonic response that the dose was too small. It is safest to begin with 0.00002 of a milligramme, slowly increased to 0.0001 or 0.0002. It is possible to give tuberculin without using the opsonic index, if the temperature and clinical symptoms of the patient are very carefully watched, and the quantity injected is very slowly increased at intervals of ten days. Dr. Latham advocates the giving of tuberculin by the mouth in normal saline solution or in fresh horse serum. He says that it should be given when the stomach is empty and in the morning. He shows by the effects on the opsonic index that it really acts when so used, but the dose required is about double the hypodermic one. He asserts that benefit is derived from tuberculin even in very acute stages of phthisis, but this is not altogether confirmed by Dr. Mackenzie. The point of interest is the fact that fresh horse serum given alone always raised the opsonic index to tubercle without any preceding negative phase,

and should, therefore, be a most useful addition to the treatment of acute phthisis. When tuberculin is given in any form, the patient should be kept in bed for at least twenty-four hours, and the temperature taken every four hours, preferably in the rectum, in order to guard against ill effects during the negative phase. He considers that Marmorek's serum is horse serum containing an unknown amount of tuberculin. This serum was tried some time ago but did not give such results as to make its use permanent. Dr. Maguire's method of injecting intravenously every day 50 c.c. of 1 in 2,000 formaldehyde in normal saline solution is difficult, but does good in some cases. Cinnamon or hetol injections increase the number of leucocytes in the blood, and thus probably aid the phagocytic power.

5. **Cerebrospinal Fever.**—Larkins mentions the sera used in the cerebrospinal fever: The use of antidiphtheritic serum was suggested by Wolf, of Hartford, Connecticut, to whom it occurred that there might be some antagonism between the two organisms, because he noticed that there was a decrease of diphtheria coincident with the increase of cerebrospinal fever. He then found that pure cultures of meningococci were killed by antidiphtheritic serum. He, therefore, treated four cases of cerebrospinal fever by antidiphtheritic serum and all recovered. The success hoped for by this method has, however, not been realized. Antipneumococcal serum seems more likely to be of use than antidiphtheritic, owing to the close resemblance of pneumonia to cerebrospinal fever, and of the pneumococcus and meningococcus to one another. He has used it once, owing to the presence of some Gram positive diplococci in the cerebrospinal fluid. No good result followed its use. Jevors and Elder, however, noted improvement after its injection, saying that the patient became quieter and went to sleep; the temperature rapidly fell, followed by a rise some time later, but the patient seemed better and the pulse stronger. The production of a really satisfactory antimeningococcal serum should not be long delayed, and to this we must look as being the most rational, and the best method of combating this disease. Jochman produced a serum for which he claims distinct therapeutic properties; with it he was able to confer immunity to mice against six times the ordinary lethal dose of the cocci. For humans, doses of 20 c.c. are required either intraspinally or subcutaneously. Of seventeen patients treated by it only 5 or 29.4 per cent. died. Ruppel's serum he tried on three patients without success. Recently Flexner's serum appears to be giving very satisfactory results, and, where used, to have brought down the mortality considerably.

10. **Meat as a Source of Infection in Tuberculosis.**—Littlejohn remarks that digestion, or salting or smoking (as usually carried out) has little or no disinfecting effect on tuberculous meat; but, owing to the rarity of tuberculous foci in the flesh, even in the most advanced cases of tuberculosis, ordinary cooking is sufficient, as, with the exception of contaminated "butcher rolls," contaminated meat is thus rendered innocuous. With a more efficient "meat inspection" the quantity of tuberculous organs reaching the market would be reduced to a minimum. He concludes that man can contract tuberculosis from cattle,

but that considering the difficulty experienced in transmitting human tuberculosis to cattle, we may, perhaps, assume that the transmission of bovine tuberculosis to man is also difficult to effect. Infection of man with tuberculosis is not commonly caused by ingesting meat, since it requires the swallowing of large numbers of tubercle bacilli to be effective. The flesh of tuberculous animals (even in generalized tuberculosis) is rarely infective, except as a result of post mortem contamination. The ordinary processes of cooking, in the majority of cases, are sufficient to render the contaminated meat noninfective. During a period, in which the consumption of meat by man has increased in quantity, human tuberculosis has declined. We may justly infer, therefore, that, to the community at large, the risk of contracting tuberculosis by eating the meat of tuberculous animals is not so great as is generally believed; but that this risk is greater than it should be, owing to inefficient methods of inspection. This imperfect inspection particularly concerns those that buy cheap meat, and eat such commonly infected organs as the lungs, udder, and mesenteries.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting, held in Brooklyn, February 1, 1909.

Dr. J. SCOTT WOOD in the Chair.

The Rational Treatment of Typhoid Fever.—

In this paper Dr. EDWARD E. CORNWALL stated his conviction, based on his own personal experience and his study of the recorded experience of others, that the rational treatment of this disease, in the present state of medical enlightenment, consisted essentially in hygiene, nursing, feeding with a moderate amount of fluid food, principally modified milk, until a week or ten days after defervescence, and the treatment *secundum artem* of any symptoms and complications which Nature herself could not take care of. We were all looking, he said, for a specific treatment, but the recorded experiments with antitoxic or bacterial sera had not thus far realized our expectations. The idea of killing the germs with antiseptics had charmed the imagination of many, and probably the majority of physicians who treated typhoid fever to-day gave some kind of antiseptic drug; but that any agent of this class could be given in sufficient quantity to make the bodily fluids bactericidal, without disastrous consequences to the tissues of the patient, was so obviously impossible that therapeutic opinions along this line might be disregarded. The fact that one of the most constant manifestations of typhoid was the formation of ulcers in the intestine had led some to attempt direct treatment of these ulcers, and they advocated continual purging and a diet consisting almost entirely of water or of articles leaving little residue. Ewart, in addition to daily purging, recommended the administration of frequent doses of liquid paraffin mixed with animal charcoal for the local effect. Treatment with continuous purgation, however, did not seem rational in view of the clinical

fact that the patients who were constipated regularly did better than those having diarrhoea.

The Brand cold bath treatment had been known and practised for nearly a generation, and had the endorsement of the highest authorities; yet it was far from being universally employed, and it was safe to say that a large majority of the patients with typhoid treated in this country at the present time did not receive the Brand baths. Our physicians, he believed, would not wilfully neglect to use a method which they thought would double, or even materially increase, their patients' chances of recovery. The obvious explanation, therefore, of the apathy of the great mass of the profession toward this treatment must be that they had a lurking suspicion that the allegations put forth for it were exaggerated. Having subjected these statements to critical analysis, the speaker referred to the contraindications to the use of the baths, such as hæmorrhage, pneumonia, peritonitis, severe abdominal pain, phlebitis, and great prostration. Myocardial weakness was a very important contraindication, and it was also evident that the sudden raising of the blood pressure caused by the baths was capable of producing rupture of an eroded tissue in the intestine or of increasing impending hæmorrhage which had not yet manifested itself. As a general contraindication might be mentioned the desirability of keeping typhoid fever patients in bed.

That the nursing should be the best possible did not admit of debate, and patients in cities who could not afford a trained nurse should be treated in a hospital. The regulation of the diet probably had more to do with the prognosis than anything else that was within the physician's control, and the predisposition to fermentation of the intestinal contents and absorption of toxins always had to be taken into account. A large proportion, if not a majority, of the deaths in this disease resulted from surgical accidents connected with intestinal ulcers; comparatively few from the severity of the disease itself. Our only means of minimizing irritation of the ulcers by fermenting masses of food was by carefully regulating the diet, and the dietetic problem was a most complicated one. On the one hand, the food must be such as not to provoke tympanites, diarrhoea, intestinal hæmorrhage, or perforation, and, on the other, sufficient to bring the patient through with strength enough for convalescence. Perhaps the most definite principle in typhoid therapeutics which clinical experience extending over a long period had established was the advisability of conservatism in diet. Most physicians who had had much to do with this disease could recall instances in which they had been influenced to give solid food earlier than usual, and had regretted it when the patients shortly afterward had intestinal hæmorrhage, perforation, or a relapse. These untoward happenings might have been only coincidences, but they were sufficiently numerous to be suggestive of cause and effect. As the case now stood, the advantages of the so called liberal diet did not seem to be great enough to counterbalance its dangers. Milk, which in the opinion of an overwhelming majority of the medical world was the most valuable article in the typhoid dietary, could be satisfactorily modi-

fied by peptonization when there was gastric indigestion, by sterilization and dilution with barley water, and by the addition of pure cultures of the lactic acid bacillus, which caused it to curdle in fine flakes. The modification known as whey was also a serviceable one. Besides modified milk, the dietary might include clear or flavored barley water, oatmeal water, rice water, albumen water, strained orange and lemon juice, grape juice, some of the artificial infant foods, plain jellies, and ice cream.

For the reduction of the fever, when continuously high, opinion was practically unanimous that cold water was the only agent that should be used, and Dr. Cornwall's preference was for the method of sponging, as a rule. Tympanites and diarrhoea both called for a highly restricted diet, consisting largely of barley water. Tympanites would not be very common if the patient was properly fed. Turpentine should be given by the mouth only as a last resort. For the diarrhoea, if considerable, bismuth, in large doses, and opium, in small ones, were probably the drugs of preference. For headache and restlessness the bromides and morphine seemed to be the most useful; the coal tar analgetics should never be employed. Judicious stimulation of the heart was often an important part of the symptomatic treatment. Strychnine, in small doses, was probably the best drug at first. Later, if required, tincture of strophanthus might be added, in doses not exceeding three minims. In bad cases strychnine might be given in larger amount, and also caffeine, camphor, and aromatic spirit of ammonia. Whiskey, in small, frequently repeated doses, was sometimes useful, especially in pronounced toxæmia. The toxæmia was rationally treated along two lines—by limiting intestinal fermentation, by the regulation of the diet, and by stimulating excretion, through the kidneys, of the toxins in the blood. The most obvious way to stimulate renal excretion was by giving large quantities of water, but excessive quantities were capable of harm, owing to the weakened condition of both the kidneys and the heart. Frequent colonic irrigations with normal saline solution had been employed for introducing a large amount of water into the body, as well as for the purpose of cleaning out the bowels, in consequence of the peristalsis thus excited in the small intestine. This procedure, however, was open to the objections that it might introduce more water into the system than was desirable, that it might cause irritation of the lower bowel, and that it might produce an excessive amount of peristalsis. For the elimination of toxins the rational course to pursue would seem to be, in addition to a moderate diet, which would disturb the intestines as little as possible and be well assimilated, to give as much water as the cardiorenal apparatus could stand without being overtaxed, and to judiciously stimulate the heart when necessary. Some toxæmia there must always be in this disease, but with the great majority of patients properly fed and treated otherwise, toxæmia in marked degree was not a prominent symptom.

Dr. JOHN R. STIVERS said that one advance in the treatment of typhoid worthy of notice was the elimination of the practice of giving powerful drugs. In the average mild case the patient would get well under any treatment, but for the more severe forms

of the disease he thought the treatment outlined by Dr. Cornwall was most judicious. At the present time he believed the majority of physicians used cold sponging. The Brand baths were not generally employed, and this method certainly had disadvantages. One of these, which had not been mentioned in the paper, was the shock to which it gave rise. In the practice of cold sponging it was important that it should be accompanied with a good deal of friction, and he thought that each sponging should last about twenty minutes. If milk, variously modified, could not be taken, animal broths might be substituted. The giving of solid food was, to his mind, a dangerous procedure. In marked delirium, if cold sponging did not afford relief, camphor was one of the best drugs that could be employed, and small doses of opium were sometimes useful. For tympanites there was nothing better than the old fashioned turpentine stupe. In the matter of stimulation, judgment and common sense were called for. Large doses of stimulant drugs were often harmful, and he agreed with the reader in regarding strychnine as the best of these. He did not think any benefit was to be derived from saline irrigation. Anything in the way of an enema was excessively disagreeable to the patient, and if there was constipation he gave castor oil or some other simple purgative. We could not disinfect the intestinal tract by means of antifermentatives or antiseptics, and yet with such agents as bismuth and charcoal we might be able to prevent fermentation and the consequent distention of the bowel. It was well to bear in mind that hæmorrhages were not necessarily dangerous.

Dr. ROBERT E. COUGHLIN said that in the hands of the advocates of special lines of treatment the mortality rate was always very small, but the profession in general did not get the same remarkable results. This was illustrated in the case of the treatment by calomel, guaiacol carbonate, eucalyptol, and menthol lauded by Dr. Woodbridge, who had boasted that he could cure any case of typhoid which was seen before the eighth day. The allegations for the treatment could have been substantiated only by its success in a large number of unselected cases, and in Bellevue Hospital it had been tried with disastrous results. It was generally recognized that typhoid fever varied very greatly in severity in different years, and at present most of the cases were of mild character. In the statistics of different hospitals in New York and other cities given in the paper it was noticeable that, with the exception of the Williamsburgh Hospital (where the low rate was due to a run of very mild cases), the lowest figure was at the New York Hospital, where, he believed, the Brand treatment was more generally and systematically practised than in any of the others.

Dr. VICTOR A. ROBERTSON said that when he was an interne at the New York Hospital the baths were very generally given, and with good results. The method was impracticable, however, as a rule in private practice. The cold pack might very well be substituted for it, and was of great value; while in some instances the use of ice bags, as in cases of isolation, he had found of service. He then spoke of the danger from "typhoid carriers," to whom so much attention had of late been directed.

Dr. RANSFORD E. VAN GIESON said that in typhoid fever much depended upon the number of Peyer's patches involved and the toxins developed. There were no hard and fast rules of treatment, and each individual case must be handled according to the circumstances characterizing it. The treatment of this disease sometimes ran to surgery. Thus, the periostitis due to the persistence of the bacilli after recovery, and commonly met with in the bones of the forearm or the tibia, called for curetting, washing with some such agent as potassium permanganate, and packing with iodoform gauze. Milk was undoubtedly the best fluid diet as a rule, but some patients grew very tired of it. This was his own case in a long illness from which he had suffered, and he had found grape juice a very good substitute for it. Grape juice would often be found very grateful to the patients, and it had excellent nutritive properties.

Dr. CORNWALL said that in his own practice he never gave any purgative medicine by the mouth, depending entirely upon enemata to secure evacuation of the bowels when this was required. And he rarely gave turpentine by the mouth, as he believed this was attended with considerable risk. It would seem that cold baths were suited to only a restricted number of cases. In the mild ones they were not needed, and in the severe ones there were often present contraindications to their use.

Hypernephroma of the Kidney.—Dr. WARREN L. DUFFIELD read this paper. (See *New York Medical Journal*, May 1, 1900.)

Dr. ALGERNON T. BRISTOW said the question of diagnosis was an important one in this class of cases. Sometimes it was impossible to arrive at a diagnosis before making the incision. Stone in the kidney was the condition most apt to be confounded with hypernephroma. In cases with hæmorrhage he could not agree with Dr. Duffield that the hæmorrhage was slight. The diagnosis from a tuberculous process was easier, as there were then other symptoms and signs to assist. One point of practical importance was that in operating it was not sufficient to enucleate the tumor, leaving the capsule *in situ*. The entire growth should be removed. It appeared to be a fact that when metastases occurred the result was always fatal.

Electricity in Genitourinary Diseases.—This paper was read by Dr. FRANCIS H. BERMINGHAM. He did not maintain that electricity was by any means a cureall, or that it should be used to the exclusion of other measures, but his contention was that with its use, alone in some conditions and in conjunction with other forms of treatment in others, results would be obtained more quickly and satisfactorily than if it was not employed. He first referred to the electric light, considering its introduction in genitourinary diseases as one of the most important advances made since electricity had found a place in medicine. He spoke of the advantages of the endoscope and said that what this had done for the urethra the cystoscope had done for the bladder. The cystoscope enabled us to determine various pathological conditions in that organ and to employ catheterism of the ureters, by which we could ascertain the condition of each kidney, what its functional

power was, and whether or not if one kidney was removed the other could do sufficient work for both. The x ray had been of great assistance to the genitourinary surgeon in the locating of stones in the kidney, ureter, and bladder. In radiography the all important thing was the technique, and success in this could be obtained only by long practice and a coil of sufficient size. Having described the position of the patient for the determination of stone in the bladder, he said that the diagnosis of renal or ureteral calculus was not always satisfactory, depending upon the size and composition of the stone and the size of the subject. Uric acid stones offered scarcely any obstruction to the rays, though most radiographers were now stating that there was enough calcium oxalate or phosphate present in such stones to cast a shadow. While a good shadow might be taken as conclusive evidence of the existence of a stone, the absence of a shadow did not necessarily mean that no stone was present. In looking for stone in the kidney or ureter, radiographs of both sides of the body should be taken, as the pain of calculus was not infrequently referred to the opposite side.

The therapeutic use of the x ray in genitourinary disorders was the same as in general work, namely, the treatment of a malignant condition. For superficial lesions a medium tube was used, and it should be placed comparatively near the subject, while for deeper work, such as the treatment of abdominal cases a higher tube at a distance of eighteen or twenty inches was better. Epithelioma of the penis and carcinoma of the prostate had been treated successfully, and Dr. Sinclair Tousey had reported a number of cases of prostatic hypertrophy treated by means of the x ray with good success. Personally, the speaker had used it in a few cases of the latter condition, but with no very marked results. Dr. Brown had reported cases of cystitis successfully treated. It was to be borne in mind in using the x ray that cases of nephritis were usually aggravated by its employment.

Having referred briefly to some of the uses of electricity in gynecology, he spoke of the necessity of keeping constantly in mind the following facts regarding the galvanic current: Oxygen was liberated from the positive pole, and hydrogen from the negative; the positive was acid, the negative alkaline; the positive would stop bleeding, the negative would increase it; the positive was sedative, the negative produced supersensitiveness; the positive hardened tissue, the negative liquefied and disintegrated; the positive was an acid caustic, with a hard and unyielding cicatrix resulting, the cicatrix from the negative was soft and pliable; the positive was a vasoconstrictor, the negative a vasodilator. Dr. Bermingham next described electrolysis and cataphoresis. In the latter, since a constant current passed from the positive to the negative, it was not uncommonly supposed that all medication must be placed on the positive pole in order to be forced into the tissues. It was necessary to remember, however, that cataphoresis was an electrolytic process, and that in every instance the medicament was broken up into its elements; so that, according as they were anions or cations, they would seek the differ-

ent poles. For instance, in treating an enlarged prostate with a solution of potassium iodide the solution would have to be used on the negative pole if one wished to get the resolvent effects of iodine, since the latter was negative electrically and had a strong affinity for the positive pole.

Strictures could be most successfully treated by means of galvanism, and the technique was described. The failures which had been reported, he said, were probably in every instance due to employing the positive pole instead of the negative, or to using force. Chancroids were treated by metallic electrolysis, a current being employed which was strong enough and of sufficient duration to deposit copper oxychloride deep in the tissue. After having used the positive pole with a metal electrode it was always well to reverse the current for a moment, in order to avoid giving the patient pain from the adherence of the pole. Chronic urethritis and granular urethritis might also be treated by metallic electrolysis, and he gave the details of the procedure. The hollow sound used for urethritis was also employed in the treatment of enlarged prostate, the openings being only at the distal extremity, and not throughout the length of the tube. Here a solution of potassium iodide, about thirty grammes to the ounce, was used by cataphoresis, the negative pole being attached to the copper wire and the positive outside. Not only was the iodine driven deep into the tissues, but also the softening and disintegrating effect of the negative current was obtained. The loss of muscular tone existing in almost all these old prostatic cases might be treated at the same time by leaving the electrode in place and turning on a slowly interrupted current for about five minutes. The actual cautery had its use, as exemplified in the Bottini operation, but the speaker thought this was of service in only a few selected cases.

Other genitourinary disorders which might be benefited by electricity were spermatorrhoea, seminal emissions, impotence, incontinence of urine, and paralysis of the bladder. As a rule, in the first, second, and third of these the best results were obtained from faradization of the urethra. The static and high frequency currents were of great value in cases of neurasthenic origin, the spray, the brush discharge, and the spark being employed. One very important use of static electricity introduced by Snow, was the application of the wave current in prostatic hypertrophy. Urinary incontinence was treated by means of the faradic current, one pole being placed over the symphysis and the other over the perineum. Paralysis of the bladder usually dependent upon some incurable condition of the spinal cord, might perhaps be benefited by local and general treatment, but nothing very positive could be accomplished in such cases.

In the discussion of Dr. Bermingham's paper Dr. SINCLAIR TOUSEY read a paper illustrated with a number of radiographs, which was published in the *New York Medical Journal* of May 22, 1909.

Dr. LEWIS GREGORY COLE said that it was possible by means of the x ray to show every variety of stone in the bladder. An important feature in the diagnosis of renal calculus was that a sufficient area of the body should be exposed to the rays. He had generally found it possible to show the kidney.

Letters to the Editor.

STAINING OF THE CONJUNCTIVA.

73 East Eighty-second Street,
NEW YORK, July 19, 1909.

To the Editor:—

The following case may be of interest. I was called to see a boy, aged twelve years, whose conjunctivæ had suddenly become of a deep purple. There was a mild conjunctivitis, but with no pain, no visual defect, no history, nothing upon which a diagnosis could be based until I noticed his finger tips stained purple. He had been playing with a copying pencil, stained his fingers, and then rubbed his eyes. The discoloration of the conjunctivæ gradually disappeared in three days. The only treatment was frequent washing with warm water.

J. L. NASCHER.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Legal Medicine and Toxicology. By R. L. EMERSON, A. B., M. D. (Harvard). Member of the Massachusetts Medical Society, etc. New York and London: D. Appleton & Co., 1909. Pp. xiii-593. (Price, \$5.)

As a work on forensic medicine this volume is admirably conceived. It is, however, more of a treatise on medical jurisprudence than a textbook of toxicology, and the author appears to show a greater degree of familiarity with the relations of the practitioner of medicine to the law than with the clinical aspects of poisoning. In fact, toxicology in this volume is subordinated to the work of the medical jurist. The author has evidently made a thorough study of the literature, acknowledges his indebtedness to the many standard books on the subjects, and gives credit to the authors cited, but a bibliography is lacking, and this omission detracts considerably from the value of the work.

Under the head of Legal Medicine, Part I, are treated death and its causes, including the signs of death; wounds and their nature, a most important subject in medical jurisprudence which is well handled here, as are also the forms of rape and its legal definition; pregnancy and the question of legitimacy, paternity, etc. The relation of medical examiners to insurance companies and the payment of policies on medical certificates are concisely treated. Part I is brought to a close with an interesting and informing discussion of expert evidence, and the responsibility of the medical witness, Mr. Clark Bell's definitions of expert witness and expert evidence being cited.

When we come to Part II of the book, in which the subject of toxicology is treated, we are a little disappointed. In the opening chapter a table of statistics is reproduced "taken from a recent talk on this subject by Mr. Blyth." The table covers a period of ten years from 1883 to 1892. Blyth's latest book on poisons, published in 1906, gives fresher statistics, including the ten years ending December,

1903. It would be invidious to draw comparisons, but it is difficult to avoid contrasting the great amount of original work and the wealth of bibliographical references contained in the work of the two Blyths with the paucity of original work and references noted in the work before us. For so modern a volume (published this year) there is a disappointing lack of accuracy or consistency exhibited in the use of chemical terms. It is evident that the author has little or no acquaintance with the *United States Pharmacopœia*, or he would not use in the same sentence such titles as "nitrate of silver" and "silver chlorid." The last named is, of course, merely a specimen of the bob-tailed spelling which prevails so generally at present. In the paragraph immediately following the one from which we have quoted occur the titles "mercurous nitrate" and "ammonium hydrate" (hydroxide?); but in the succeeding paragraph occur "lead acetate" and "lead chlorid." Here the base is properly named first, as it is with silver nitrate further along in the book (page 255). These, however, may be regarded as purely minor defects, but there are many others that might be instanced. Evidently the sheets were not proofread with the care that ordinarily distinguishes the products of the Appleton press.

Carbolic acid is not now the popular means of attempted suicide it formerly was, owing to the restrictions that have been placed on its sale of late by local and State authorities. It will be news to most of us who have had to treat cases of carbolic acid poisoning to learn that "carbolic acid is easily mistaken by its smell and taste for common whiskey, and most cases are attributed to that cause and to its use as a common household disinfectant" (page 303). It is true that the substitution of carbolic acid for medicine and various alcoholic drinks has happened frequently, but not, we think, from its resemblance in smell or taste to the liquid intended to be taken. Little is said regarding antidotes to the poison. The author regards sodium sulphate as the true chemical antidote for carbolic acid, but no mention is made of the efficacy of saccharated lime solutions or of alcohol.

We must confess to an inability to appreciate the importance of including drawings of the plants in some of the instances in which they are given. Under croton oil the flowering plant of *Croton tiglium* is shown. Of course, the plant is never used as a lethal agent. There is more excuse for illustrating digitalis, poison ivy, aconite, poison hemlock, and water hemlock, but why take up space with drawings of plants such as *Amygdalus communis*, *Erythroxylon coca*, *Nicotiana tabacum*, and *Papaver somniferum*, which are never used in the crude state, and concerning the appearance of which the student is expected to be familiar through his botanical studies? The reference to "belladonna seeds" on page 364 is obscure, as these seeds are not an article of commerce and are not used in any galenic preparation of *Atropa belladonna*. In commenting on the similarity of the convulsions of eclampsia to those caused by strychnine poisoning (page 360), the author might have called attention to the resemblance of the coma of uræmia to that due to alcohol.

A seemingly inordinate amount of space (188

pages) is given to "Extracts from Various State Laws Affecting the Practice of Medicine," as the chapter is entitled. Fifty-one States and territories are enumerated, the only colonial possessions omitted being Hawaii, the District of Alaska, the Philippines, Guam, and Tutuila. This chapter should constitute a useful reference for a time at least, and is probably a proper addition to a work on legal medicine, but summaries of the laws could have been given in a more condensed form to better advantage. Except in respect of the greater attention, comparatively, paid to medical jurisprudence proper, we are unable to see how this work is in any way superior to the standard reference books already in use.

Symptoms and Their Interpretation. By JAMES MACKENZIE, M. D., M. R. C. P., Physician to the West End Hospital for Nervous Diseases, London, etc. London: Shaw & Sons, 1909. Pp. xx-297.

This is not a formal treatise on diagnosis. It is a very readable and instructive portrayal of the importance of reflex pain and tenderness and reflex muscular contraction in diagnosis. The author advances many facts to show the rarity if not the non-existence of pain in the viscera themselves, even in the uterus during parturition, and the frequent lack of complete coincidence between the situation of symptomatic pain and that of the deep seated parts affected with the disease that gives rise to the pain. He refers to many curious observations bearing on these points, and he tells a great many things well calculated to sharpen one's diagnostic acuteness. The book cannot fail to prove of exceeding value to the practitioner who will study it carefully.

Die Physiologie der Verdauung und Ernährung. Volesungen für Studierende und Aerzte. Von Dr. OTTO COHNHEIM, A. O. Professor der Physiologie an der Universität Heidelberg. Berlin: Urban & Schwarzenberg, 1908.

In this volume are published in a revised form twenty-three lectures covering the entire field of the physiology of digestion and nutrition, delivered at Wiesbaden by Professor Cohnheim during the winter of 1906. There are complete references to all original sources in the scientific literature of these subjects, brought down to the autumn of 1907. Parts of these lectures dealing with the digestive ferments, the chemistry of the carbohydrates, fats, and proteids, and metabolism are difficult reading for any one but the specialist, but in the sections treating of the practical application of physiological principles to diet the general medical reader will find much sound and wholesome guidance. The writer is not at all in accord with the conclusions of Chittenden deduced from his well known experiments with a low proteid diet. Unrecognized sources of error are pointed out in these tests, and the author declares that the efficiency of nations as well as individuals depends largely upon an adequate amount of proteid food, which for an adult should amount to the daily minimum of a hundred rather than forty grammes, the much too low estimate of Professor Chittenden.

The experience of Germany, which in the past few decades has attained an industrial and commercial development of the first rank with a steady increase in the consumption of meats, and the changing diet of the Japanese in the same respect as they

have become a powerful nation, are incontestible facts of physiological import. There can be no doubt that the widely exploited dietetic fads of amiable cranks and paranoiac fanatics, who would reform the world through mastication or their special brand of vegetarian biscuits, have done much harm, evidence of which the discerning physician may see almost daily in his practice. It is a satisfaction to observe that the carefully determined results of the most competent scientific authorities agree with common sense and the accumulated experience of the human race, and that the normal individual may in a measure still trust his unperverted instincts and tastes in the important matter of the selection of his food and drink.

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Mind Over Body. Letters to a Friend, a Christian Scientist. Boston: James H. West Company, 1909. Pp. 104.

Jelinek, S.—Atlas der Elektropathologie. Mit 230 meist farbigen Abbildungen auf 96 Tafeln und 16 Textfiguren. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. xi-92. (Price, 35 M.)

Goldthwait, Joel E., Painter, Charles F., and Osgood, Robert B.—Diseases of the Bones and Joints. Clinical Studies. Illustrated. Boston: D. C. Heath & Co., 1909. Pp. xiii-685.

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Lasirifa.—Erholungs- und Kurorte nach ihren Höhenlagen. Berlin: August Hirschwald, 1909. Pp. 66.

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Freer, Paul C.—Seventh Annual Report of the Director of the Bureau of Science to the Honorable the Secretary of the Interior. For the Year ending August 1, 1908.

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Finol, Jean.—The Philosophy of Long Life. Translated from the French by Harry Roberts. London: John Lane; New York, John Lane Company, 1909. Pp. ix-308. (Price, \$2.50.)

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Döderlein, Albrecht.—Leitfaden für den geburtschilflichen Operationskurs. Achte, verbesserte und vermehrte Auflage. Mit 163 Abbildungen. Leipzig: G. Thieme, 1909. Pp. 240.

Düms, F. A.—Samariter-Handgriffe. Anschauungstafeln für die erste Hilfe in der Krankenpflege. 6 zum teil farbige Tafeln. Mit Abbildungen. Leipzig: J. Wörner, 1909. Pp. 23.

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Ewald, C. A.—Die Erkrankungen der Schilddrüse, Myxödem und Kretinismus. Zweite neubearbeitete Auflage. Mit 26 Abbildungen und 1 Karte. Wien: A. Hölder, 1909. Pp. iv-293. (Price, 8.80 M.)

Fessler, J.—Die Wirkung der modernen Spitzgeschosse auf Menschen und Tiere. Nach Versuchen mit der deutschen 8 mm-S-Munition auf 10 bis 1500 m. Mit 20 Bildern und 3 Doppeltafeln. München: J. J. Lentner, 1909. Pp. 439-621.

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Engel, Hermann.—Grundzüge ärztlichen Mitwirkens bei der Ausführung der staatlichen Unfallversicherungsgesetze. Mit 30 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 3 M. 50 Pf.)

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Goupp, E., und Nagel, W.—Sammlung anatomischer und physiologischer Vorträge und Aufsätze. Erstes Heft: Ueber die Rechtshändigkeit des Menschen. Jena: Gustav Fischer, 1909. (Price, 1 M.)

Wegele, Karl.—Die diätetische Küche für Magen- und Darmkranke. Fünfte verbesserte Auflage. Jena: Gustav Fischer, 1909. (Price, 1 M. 60 Pf.)

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service during the week ending July 30, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Indiana—Muncie.....	July 3-19.....	3	
Minnesota—Duluth.....	July 9-19.....	1	
Missouri—St. Louis.....	July 10-17.....	1	
Montana—Butte.....	July 8-15.....	1	
Tennessee—Knoxville.....	July 10-17.....	2	
Texas—San Antonio.....	July 10-17.....	1	
Wisconsin—Appleton.....	July 10-17.....	4	
<i>Smallpox—Insular.</i>			
Philippine Islands—Manila.....	May 28-June 5.....	1	1
Algeria—Bona.....	June 1-30.....	1	7
Argentina—Buenos Aires.....	April 1-30.....	6	6
Brazil—Bahia.....	June 4-11.....	2	2
Brazil—Sao Paulo.....	June 6-11.....	3	3
China—Kankow.....	June 5-26.....	Present	
China—Shanghai.....	June 5-26.....	2	2
France—Marseille.....	June 1-30.....	1	1
India—Bombay.....	June 15-22.....	1	1
India—Calcutta.....	June 5-12.....	18	
India—Rangoon.....	June 5-12.....	4	
Java—Batavia.....	May 29-June 5.....	2	
Italy—General.....	June 27-July 4.....	16	
Italy—Naples.....	June 27-July 4.....	32	
Russia—Odessa.....	June 19-July 3.....	5	8
Russia—St. Petersburg.....	June 12-19.....	27	
Russia—Warsaw.....	June 22-29.....	2	
Spain—Barcelona.....	June 28-July 5.....	5	
Spain—Madrid.....	June 1-30.....	32	
Spain—Valencia.....	June 19-26.....	7	
Turkey—Ankara.....	July 8-17.....	Present	
Turkey—Bassorah.....	June 19-26.....	Present	
<i>Yellow Fever—Foreign.</i>			
Brazil—Bahia.....	June 4-11.....	5	3
Brazil—Para.....	June 19-26.....	4	1
<i>Cholera—Insular.</i>			
Philippine Islands—Provinces.....	May 29-June 3.....	3	3
<i>Cholera—Foreign.</i>			
Germany—Königsberg.....	July 21.....	1	
India—Bombay.....	June 15-22.....	27	
India—Calcutta.....	June 5-12.....		

Places.	Date.	Cases.	Deaths.
Russia—General.....	July 1-8.....	272	
Russia—Riga.....	July 21.....	13	
Russia—St. Petersburg.....	July 21.....	23	
Straits Settlements—Singapore.....	May 29-June 5.....	3	
<i>Plague—Foreign.</i>			
Brazil—Bahia.....	June 4-11.....	1	1
Chile—Antofagasta.....	June 14-22.....	1	
Chile—Iquique.....	June 14-22.....	1	
China—Amoy.....	June 2-8.....	1	
China—Swatow Vicinity.....	July 1-8.....	2	
Egypt—General.....	July 1-8.....	1	
Egypt—Port Said.....	July 27.....	1	
India—General.....	June 13-22.....	13	
India—Bombay.....	June 13-22.....	29	
India—Calcutta.....	June 5-12.....	24	
India—Rangoon.....	June 5-12.....	20	
Japan—Kobe.....	June 19-26.....	2	
Japan—Yokohama.....	June 19-26.....	2	
Japan—Tokyo.....	June 19-26.....	1	
Turkey—Bagdad.....	May 8-29.....	6	
Venezuela—Caracas.....	July 11.....	7	6
Zanzibar—Zanzibar.....	July 26.....	1	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers in the United States Public Health and Marine Hospital Service for the seven days ending July 28, 1909:

BELL, J. M., Pharmacist. Leave of absence granted June 16, 1909, for thirty days from July 10, 1909, revoked.

BLANCHARD, J. F., Acting Assistant Surgeon. Granted eight days' leave of absence from July 17, 1909.

FRARY, T. C., Acting Assistant Surgeon. Granted seven days' leave of absence from August 6, 1909.

GAHN, HENRY, Pharmacist. Granted one day's leave of absence, July 19, 1909, and three days' leave of absence from July 22, 1909, under paragraph 210, Service Regulations.

HERRING, R. A., Assistant Surgeon. Upon the arrival of Assistant Surgeon Richard H. Lyon, directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

HOLT, J. M., Passed Assistant Surgeon. Leave of absence granted July 2, 1909, for one month from July 26, 1909, amended to read three days from July 26, 1909.

KOLB, LAWRENCE, Assistant Surgeon. Directed to report to the Medical Officer in Command at Baltimore, Md., for duty and assignment to quarters.

LAVINDER, C. H., Passed Assistant Surgeon. Granted seven days' leave of absence from July 25, 1909.

LEAKE, JAMES P., Assistant Surgeon. Directed to proceed to Chicago, Ill., and report to the Medical Officer in Command for duty and assignment to quarters.

LYON, RICHARD H., Assistant Surgeon. Directed to proceed to Reedy Island Quarantine Station and report to the Medical Officer in Command for duty and assignment to quarters.

OAKLEY, J. H., Surgeon. Directed to proceed to Seattle, Wash., upon special temporary duty.

RAMUS, CARL, Passed Assistant Surgeon. Granted three days' leave of absence from July 19, 1909, on account of sickness.

REIMER, H. B. C., Acting Assistant Surgeon. Granted seven days' leave of absence from July 20, 1909, under paragraph 210, Service Regulations.

RIDLON, J. R., Assistant Surgeon. Relieved from duty at New Orleans, La., and directed to report to the Commanding Officer of the Revenue Cutter *Seneca*.

ROBINSON, D. E., Passed Assistant Surgeon. Granted one month's leave of absence from August 8, 1909.

TAPPAN, J. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 2, 1909.

WASLIN, EUGENE, Surgeon. Granted one month's leave of absence from July 22, 1909, on account of sickness.

WERTENBAKER, C. P., Surgeon. Directed to proceed to Cape Charles Quarantine Station upon special temporary duty.

WILLIAMS, L. L., Surgeon. Granted one month's leave of absence from August 1, 1909.

WOOD, CHARLES E., Assistant Surgeon. Upon arrival of Assistant Surgeon J. R. Ridlon, relieved from duty on the Revenue Cutter *Seneca* and directed to proceed to Ellis Island, N. Y., and report to Chief Medical Officer for duty.

YOUNG, G. B., Surgeon. Directed to proceed to Dubuque, Iowa, and La Crosse, Wisconsin, upon special temporary duty.

Appointments.

Dr. Hermon E. Hasseltine commissioned an assistant surgeon in the U. S. Public Health and Marine Hospital Service.

Dr. James P. Leake commissioned an assistant surgeon in the U. S. Public Health and Marine Hospital Service.

Dr. Richard H. Lyon commissioned an assistant surgeon in the U. S. Public Health and Marine Hospital Service.

Dr. Lawrence Kolb commissioned an assistant surgeon in the U. S. Public Health and Marine Hospital Service.

Resignation.

Pharmacist John K. Thompson resigned, to take effect April 30, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 31, 1909:

ASHBURN, PERCY M., Major, Medical Corps. Relieved from duty with the commission to Liberia, and ordered to San Francisco, Cal., for duty at the Army General Hospital.

ASHFORD, MAHLON, First Lieutenant, Medical Corps. Granted leave of absence for fourteen days.

BINGHAM, ERNEST G., Captain, Medical Corps. When relieved at Fort Porter, N. Y., will proceed to Fort Mason, Cal., for duty as surgeon, and as attending surgeon, San Francisco.

BOWMAN, MADISON H., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort McDowell, Cal.; will proceed to Point Bonita, Cal., for temporary duty, and then to the Presidio of Monterey, Cal., for duty.

BROWN, ORVILLE G., Captain, Medical Corps. Ordered to return from Fort Mackenzie, Wyo., to his proper station, Fort Robinson, Neb.

BRUNS, EARL H., Captain, Medical Corps. Granted sick leave of absence for six months.

CLAYTON, GEORGE R., First Lieutenant, Medical Reserve Corps. Relieved from further duty in the Philippines Division; will proceed from San Francisco, Cal., to Fort D. A. Russell, Wyo., for duty.

CROSBY, WILLIAM D., Lieutenant Colonel, Medical Corps. Granted leave of absence for one month and seven days.

DAVIS, WILLIAM R., Captain, Medical Corps. Relieved from duty at Fort Mason, Cal., and as attending surgeon, San Francisco, Cal.; will proceed to Fort Porter, N. Y., for duty.

HASSELLTINE, H. E., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service, his services being no longer required.

HUBER, EDWARD G., First Lieutenant, Medical Corps. Granted leave of absence for one month, to take effect about September 1st.

HUGHES, LEONARD S., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort McDowell, Cal., and temporary duty at Point Bonita, Cal.; will proceed to Fort Lawton, Wash., for duty.

JACKSON, T. W., First Lieutenant, Medical Reserve Corps. Ordered to Washington Barracks, D. C., for temporary duty.

MCDIARMID, NORMAN L., First Lieutenant, Medical Corps. Ordered to Jefferson Barracks, Mo., for temporary duty.

MILLER, REUBEN B., Captain, Medical Corps. Granted leave of absence for three months.

MORRIS, SAMUEL J., Captain, Medical Corps. Ordered to Fort Jay, N. Y., for temporary duty.

MYERS, WILLIAM H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for three months, when relieved from duty in the Philippines Division, with permission to return to the United States via Europe.

OWEN, LEARTUS J., Captain, Medical Corps. Ordered to inspect Co. A., Hospital Corps, Michigan National Guard, at Ludington, Mich., August 9th to 18th; after duty at that camp to return to Camp Perry, Ohio.

REED, HOWARD A., First Lieutenant, Medical Corps. Retired from active service as a captain, to date from June 20, 1909, for physical disability.

RENO, WILLIAM W., Captain, Medical Corps. Relieved from duty on the transport *Kilpatrick*; will proceed to Fort McKinley, Me., for duty.

REYNOLDS, FREDERICK P., Major, Medical Corps. Granted leave of absence for ten days.

TYLER, GEORGE T., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service, his services being no longer required.

YOST, JOHN D., Captain, Medical Corps. Retired from active service as a major, to date from March 13, 1909, for physical disability.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 31, 1909:

CLARK, G. F., Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to duty with the *Solace*.

DIEHL, O., Medical Inspector. Ordered to duty as fleet surgeon of the third squadron of the Pacific Fleet.

DIXON, W. S., Medical Director, retired. Detached from the Naval Dispensary, Washington, D. C., and ordered home.

JOHNSON, J. T., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from July 24, 1909.

MULLIN, J. A., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from July 24, 1909.

RODMAN, S. S., Surgeon. Detached from the Naval Rendezvous, Indianapolis, Ind., and ordered to the Naval Rendezvous, Boston, Mass.

WHITE, E. C., Passed Assistant Surgeon. Detached from the Naval Torpedo Station, Newport, R. I., and ordered to the Naval Hospital, Newport, R. I.

Births, Marriages, and Deaths.*Married.*

BOWMAN—ODGEN.—In Philadelphia, on Thursday, July 29th, Dr. Ira C. Bowman and Miss Helen H. Ogden.

ENGLISH—MCNICHO.—In Wilmington, Del., on Monday, July 26th, Mr. Edward A. English and Dr. Helen McNichol, of Philadelphia.

GASSER—RYAN.—In Lebanon, Pa., on Thursday, July 29th, Dr. Ira G. Gasser and Miss Lillian H. Ryan.

Died.

ANDERSON.—In Denver, Colorado, on Sunday, July 18th, Dr. Joseph Anderson, aged seventy-seven years.

BURTON.—In Mitchell, Indiana, on Thursday, July 22d, Dr. George C. Burton, of Washington, D. C., aged fifty-two years.

CARPENTER.—In Buchanan, Michigan, on Tuesday, July 20th, Dr. George T. Carpenter, aged sixty-one years.

COWAN.—In Tullahoma, Tennessee, on Saturday, July 24th, Dr. James B. Cowan, aged seventy-seven years.

CRAIGEN.—In Baltimore, Maryland, on Saturday, July 17th, Dr. W. J. Craigen, aged sixty-nine years.

CURRY.—In Atlantic City, N. J., on Monday, July 26th, Dr. Albert M. Curry, of Brooklyn, N. Y., aged sixty years.

DYKE.—In Spring Valley, Ohio, on Tuesday, July 27th, Dr. Samuel E. Dyke, aged sixty-three years.

HUNT.—In Scarborough Beach, N. Y., on Saturday, July 24th, Dr. Charles O. Hunt, of Portland, Maine, aged seventy years.

LAW.—In Hartford, Connecticut, on Saturday, July 17th, Dr. Homer Lycurgus Law, aged sixty-one years.

LEWIS.—In Greenville, Kentucky, on Tuesday, July 27th, Dr. Augustus Lewis, aged seventy years.

MATCHAN.—In Bismarck, North Dakota, on Sunday, July 25th, Dr. Wesley G. Matchan, aged thirty-three years.

MUHLMAN.—In Bellaire, Ohio, on Sunday, July 18th, Dr. Robert W. Muhleman, aged fifty-six years.

NEWTON.—In Suffield, Connecticut, on Saturday, July 24th, Dr. Matthew Turner Newton, aged eighty years.

REDMOND.—In Salt Lake City, Utah, on Monday, July 19th, Dr. John E. Redmond, aged twenty-four years.

SCALES.—In Springfield, Illinois, on Wednesday, July 21st, Dr. Yewell D. Scales, aged sixty-five years.

STANSBURY.—In Wingates, Dorchester County, Maryland, on Monday, July 19th, Dr. Percy Stansbury, aged thirty-eight years.

WITHERILL.—In Union, N. Y., on Thursday, July 22d, Dr. L. D. Witherill, aged sixty-four years.

WRIGLEY.—In Altoona, Pennsylvania, on Sunday, July 18th, Dr. J. Kay Wrigley, aged fifty-four years.

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Original Communications.

ON SOME TECHNICAL DIFFICULTIES IN THE DISTENTION METHOD FOR HYPOSPADIAS AND OTHER URETHRAL AFFECTIONS.*

BY CARL BECK, M. D.,
New York,

Professor of Surgery in the New York Postgraduate Medical School and Hospital; Visiting Surgeon to the St. Mark's Hospital and the German Poliklinik.

When asked to read a paper before our society, I thought that it might be of interest to you to give another retrospective view of my experience in those cases of urethral malformations, defects, deformities, and injuries, which I have treated after my principle of urethral distention within the last nine years. Since I had demonstrated my cases before you in October, 1900, a number of modifications were created by others as well as by myself, but the fundamental principles of its various applications have remained the same.

The most important of my observations is, that even in the scrotal type success was obtained by employing the method of forward dislocation. In this connection I may call attention to the fact, that when I tried the distention principle at first, I employed it for the balanic variety only (May 17, 1897), but in my second case, also reported before the New York German Medical Society at its meeting of October 9, 1897 (See *New York Medical Journal*, January 29, 1898), I utilized the procedure for the penile type, with not as perfect a result as in the first case. I said then: "In the other case, which was that of an infant one year of age, the success was not so marked as in the former, which I attribute to the fact that the hypospadiac opening was situated far back, so that the malformation had more of a penile than of a balanic character. Still the union was perfect."

Somewhat later I warned against being too audacious. But in gaining more practical experience I learned that some of the scrotal types also permit of forward dislocation. A successful case was reported at the International Congress at St. Louis (Chairman's address, Surgical Section, September 23, 1904, see also *Vom Internationalen Kongress in St. Louis, in Münchener medizinische Wochenschrift*, Nos. 6, 7, and 8, 1905). Two other cases which were of an even more extreme character were reported in the *New York Medical Journal*, for February 15, 1908. In one of these cases the preformed

*Read before the Medical Association of the Greater City of New York, April 19, 1909.

urethral gutter was converted into a tube and connected with the liberated and distended urethral stump at the perineal region; in the other the additional urethral tube was taken from the scrotum in the manner which I advised in my previous paper before this society (See *New York Medical Journal*, December 8, 1900, Figs. 10, 11 and 12).

I have the pleasure of presenting another case of the penoscrotal type to you (See Fig. 1), which was treated simply after the original principles of the distention method, the difference consisting only in the extension of the degree of exposure and forward dislodgment. It is that of a boy of eighteen months operated upon two months ago. Result shown in Fig. 2. I also show a boy of five years on whom I performed my operation for the penoscrotal type two years ago. Fig. 3 shows a perfect result, especially the absence of any incurvation. Having these and the following cases before me I shall emphasize a few, new points.

The third patient was a boy of five years of age, born in this country. He was delicately but normally built and showed very marked interference with the development of his genitals, the scrotal area being divided into two halves which made them resemble the labia majora in a woman. No testicles were detected. The fragment of a small incurvated penis was situated in the cleft and if the legs of the patient were not separated, it appeared like a clitoris between the two labia. When the pendulous portion was lifted it showed a slight indication of a urethra in the shape of a shallow longitudinal furrow posteriorly. At the base of the scrotal cleft a depression in the shape of a funnel was noticed, from which two small mucocutaneous folds emerged which resembled two labia minora *en miniature*. It is hardly necessary to mention that the urine could not be projected in a straight stream, but was sprayed all around except when the patient tried to urinate in the squatting position. Slight erection was observed sometimes, which increased the incurvation.

On March 10, 1909, I began the operation after the usual preparations and by introducing a rubber catheter into the scrotal orifice. The larger the catheter the better, because the operation is much facilitated if the catheter fills up the urethral canal as thoroughly as possible. After the catheter had reached the bladder, which was of course to be evacuated, the outer opening of the instrument was closed by a small clamp to avoid any possible contact with the urine. Then a small needle armed with a silk suture was first carried through the posterior part of the orifice, because this portion is more solid and resistant than the anterior, and then continued through the wall of the catheter. If the attachable form of a rubber catheter is not available, which permits of easy fastening to the urethral mouth, a thick walled rubber catheter is to be selected, to which the suture must be fastened without entering its lumen. The suture after being knotted must not be cut short so that it may be utilized later for attaching the orifice to the tip of the glans. The fastened catheter was now fit to serve as a handle for future manipulations. By pulling it slightly the urethra was stretched so far that the incision alongside the urethral fragment beginning behind the scrotal opening

could be made with much greater security than without using such artificial a manubrium. A small knife was used for making the incisions, the thin integument being divided in the most careful manner, especially so in children. While in children the risk of injuring the urethral canal itself is greater than in adults, the infantile urethra is more easily identified because its translucency permits recognition of the catheter which fills its caliber. After reverting the margins of the longitudinal incision the whole orifice was circumcised on a level with the beginning of this line, that is, about one third of a centimetre behind the anterior portion of the funnel shaped urethral orifice. The flaps thus created were freed from their surrounding tissue then. At the same time the integument was dissected backward and sideward so that they could be reverted. The urethra by degrees appeared more and more isolated then and by care-

But in the presence of a deep gutter it is preferable to make a lateral incision along each side of the groove thus forming two flaps which, when raised permit of placing the dislodged urethra in the wound bed underneath. The orifice is then fastened at the top of the glans by four silk sutures just as it is done in tunneling the glans directly. (See illustrations No. 1 and 2, *New York Medical Journal*, December 8, 1900.) The reverted flaps formed from the glans are then united above.

In my case the catheter which was left *in situ* for five days, was borne well. It is not advisable to leave a *cathéter à demeure* any longer because incrustations form soon, so that the caliber of the catheter will be obstructed. I have observed the formation of urinous incrustations as early as three days after the introduction. The presence of such deposits may be studied with the Röntgen method now without withdrawing the catheter first. The necessity of leaving a catheter *in situ* is an evil. Wherever its use can be avoided it should be left off therefore. In balanic and penile types of hypospadias I try to do without it except where there is a special reason. The question whether or not to use a catheter, is one which should require the most thorough consideration beforehand, because after the operation is finished an effort at introduction must be regarded a risky procedure for several days, the instrument being easily apt to interfere with the sutured area. The catheter itself may be a source of irritation. But on the other hand if



FIG. 1.—Hypospadias in a boy, sixteen months old, with a deep gutter (see Fig. 2).

ful dissection, the knife being rather directed sidewardly than directly against the urethral tube, the latter was liberated from its bed. It is no disadvantage if some of the periurethral tissue remains attached to the isolated organs, because its nutrition is so much more secured. Even if accidentally some cavernous tissue should adhere to the urethra the advantage is sometimes greater than the damage. Of course, the increased hæmorrhage is an unwelcome complication. In this case it was moderate. The length of the liberated urethral portion was a little over an inch.

Now, by thrusting a narrow, straight bistouri through the centre of the glans from below upward and behind the sulcus, which under normal circumstances would have been the fossa, I created a new meatus about a quarter of an inch behind the angle of the sulcus. The point of emergence of the bistouri should always be enlarged by turning it to the right and the left. Some of the failures reported are simply due to making the new meatus too narrow. The catheter, which so far had served as a handle, was then drawn through the new meatus and with it went the mobilized portion of the urethra, which still remained attached to it by the silk suture. This one silk suture may be utilized now, by stitching it to the posterior portion of the gland, which facilitates further attachment of the urethral orifice to the glandular wound margins. Four sutures, each one in an angle of ninety degrees, suffice as a rule. Wherever there is tension, a few thin catgut sutures are applied through the urethral wall and the sulcus, thus giving a relaxing support to the principal sutures around the new orifice. The reverted flaps were then brought back and attached as the new conditions demanded it. As a rule there was an abundance of integumental tissue at the upper margins of the skin flaps so that removal of a part of the fragments might be indicated.

As to further correcting measures I refer to my illustrations in *Urethroplastic Dislocation*, *New York Medical Journal*, May 13, 1905. (Fig. 1). Where no trace of a gutter or only a shallow one exists, tunneling the glans, as described, is advised.



FIG. 2.—Result of the operation in a boy, sixteen months old (see Fig. 1).

there is retention of urine while no catheter is introduced, the irritation caused by the absence of the catheter may jeopardize the result still more. I should say therefore, that if there is a doubt in this direction, it should be in favor of the introduction. As a whole it must be appreciated that just one of the great advantages of the distention method is supposed to be that the catheter can be dispensed with.

The result in this case was perfect inasmuch as

union was obtained by first intention, and the stream of urine is normal now, which means a great gain in contrast to the fact that formerly he soiled his clothes. In view of the small size of the penis of course and the overhanging of the scrotal folds there remains a feeling of disappointment. (See Fig. 6.) A greater mobility of the penis may, however, be obtained by some future interference and then we must not lose sight of the fact that there is still a long stage of development before the youthful patient during which favorable changes are possible.

In two of my penoscrotal cases I have observed considerable improvement of the undeveloped penis after five and six years, one of the children having been three and the other one year at the time of the operation. In a case of incurvation in a man of twenty-one years of age a marked incurvation still persisted two years after operation. In this patient I excised a triangular wedge from the corpora cavernosa at the penile dorsum, uniting the margins by a continuous silk suture. The penis was somewhat shortened by this procedure, but erection

I corrected when he was only three weeks old. The penis of this child was somewhat larger in proportion wherefore the result appeals more than that of the brother, whose operation took place at the



FIG. 4.—Scrotal hypospadias.



FIG. 5.—Result two years after operation for penoscrotal hypospadias in a boy, five years of age.

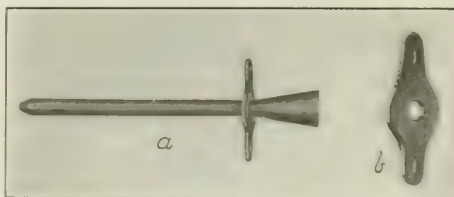
was nearly normal thereafter. If the operation for the perineoscrotal type is performed in an adult, immersion of the penis is difficult even after the most brilliant result of the operation itself, but the penis cannot be enlarged and nothing is to be hoped from further development at such a late stage. How our patient will be after he has reached maturity, remains to be seen.

This important problem also confronts us with the question, so frequently asked: What is the best time for the operation? To this I would reply today: As soon as possible. It is perfectly true that, the smaller the infant, the smaller the urethra and consequently the more delicate and difficult the isolation of the urethra. A surgeon who has no routine in this special field must, therefore, not select a baby as his first object for so delicate an operation. I have originally suggested to apply the method to infants of four months and upward. But that in much younger children and in the penoscrotal type distention can be practised successfully, is evident from the brother of the other patient just demonstrated, whose hypospadias (see Fig. 7)

same day. I have no doubt that in the course of time the natural growth of the penis, which is brought into more normal conditions now, will help to develop it. (See Fig. 8.)

Other important factors in favor of an early operation are, that at this period the infantile penis is more extensible than later, and furthermore that it is not inclined to erection as much as in later stages, when excessive rigidity may produce undue tension of the sutured area. In the third place there is no better protection for the field of operation than the diaper because the baby cannot displace it, in other words its hands will not interfere with it, while a child of several years of age is always apt to do so. Even tying the hands of a nervous child to the bedstead is no absolute protection aside from the apparent cruelty of such a procedure.

Ceterum censeo: It is never too early to perform the operation for hypospadias, and it is nothing less than criminal negligence to let a hypospadiac grow up to manhood without operating upon him. The fault rests with the physicians only, since it is customary for the majority to look upon this important condition lightly, while the parents, if only knowing the serious features of it, very rarely



would object to operation. But what can be expected from the physicians at large as long as reputed textbooks still continue to assert that there is no procedure which cures hypospadias, and this in the face of the fact that there is at least no case

of balanic and penile hypospadias which cannot be thoroughly cured by the distention method.

In children the instruments generally used for plastic operations, are too clumsy, a thumb forceps



Fig. 6.—Shows small size of penis and overhanging of scrotal folds.

of ordinary size for instance being apt to tear the thin infantile membranes. Retractors holding the reflected skin flaps must hold the tissues without injuring them. The knives for dissecting out the urethra, as well as the bistouri used to perforate the glans must also be of a special and delicate construction. I therefore had a set of special instruments constructed for urethroplastic operations, containing all that are needed for that purpose, viz.: A small, short scalpel for the dissection of the urethra from its bed, a long bistouri for the perforation of the glans or the penile substance, two toothed thumb forceps, delicate blunt scissors curved on the flat for blunt dissection, two toothed retractors, two specially adjustable holding forceps, which may serve as retractors at the same time, two small elastic artery clamps, various thin needles, sharpened on both sides up to the eye, a special needle holder, and a rubber catheter provided with a perforated

The after treatment is simple if no catheter is employed, as it should be the rule. Since it is difficult to keep any penile dressing *in situ* I used a T shaped piece of dermatol gauze with a central opening (through which the catheter is eventually pushed). This gauze strip is provided with a number of lateral openings which permit of passing some of the sutures, that is, the upper and lower sutures around the new orifice after being knotted are left long for the purpose of fastening the gauze strip. After the ends of the knotted sutures are pulled through the gauze strip placed alongside the posterior surface of the penis, they are tied and cut short. The two dissected ends of the strip are now carried around the penis and pulled through the lateral openings and knotted or held together by a safety pin. With a mild Burow's solution the gauze may be saturated several times a day. (See Figs. 2, 3, and 4, in *Some Points Regarding Urethro-*



Fig. 8.—Result of operation (see Fig. 7).

plastic Operations, etc., *New York Medical Journal*, February 15, 1908.)

As to minor technical details it may be added, that constriction of the penis by an Esmarch bandage was never found necessary. If dissection of the urethral tissues is done step by step as I have described, the hæmorrhage will always be moderate. Whenever the surface bleeding is copious, temporary pressure by a small gauze compress suffices to permit of the gradual continuation of the operation.

It was natural that the principle of distention was soon extended to other conditions of the urethra. In a case of old urethrovaginal fistula (*New York Medical Journal*, August 5, 1899), which had resisted previous attempts of closing it, the short anterior urethral fragment was exposed by a longitudinal incision and excised. Then the posterior urethral portion was dissected free and pulled forward so that it could be sewed to the remainder of the orifice. The same procedure can be carried out in a retrograde manner. That the enormous



Fig. 9.—Hypospadias three weeks old.

shield. This set may also be used for other delicate plastic operations in the genitourinary sphere as well as on other parts of the body. (See *Urethroplastic Operation*, *New York Medical Journal*, May 13, 1905, Figs. 15, 16, and 17.)

extensibility of the urethra could be utilized in diseased portions of the urethra, be they of an ulcerative or a traumatic nature, could be demonstrated by me on various traumata and destructive processes such as ulceration by carcinoma or fibrous degeneration following cicatrization after trauma, gonorrhoeic and other similar processes, which indicated the excision of the metamorphosed area. The excision of strictured portions followed by the anterior and posterior distention of the urethral stumps has given me the most gratifying results. (See among others the case of extensive ulceration of urethra and penis, demonstrated to this association, October 8, 1900.)

The excision of strictured portions of the urethra has been carried out by various surgeons, especially by Koenig and later by Mollière, Pousson, Rupprecht, Heusner, etc., long before this. No doubt there was an instinctive appreciation of the elasticity of the urethra, but none of these surgeons exposed and freed the urethral ends from their beds in a methodical manner before my publication. On the contrary, most of them laid stress on the point that only a short piece of the urethra should be resected so that the ends could be permitted of coaptation, which means that they were afraid of distending the urethra. Even when larger portions were excised, partial or total coaptation was tried by forcible means or left to granulation. The ends were only liberated so far that there was enough space for introducing the sutures. I feel deeply indebted to Koenig for having adopted my method of distention in his model operations. Further experience is reported from Marwedel, of Czerny's clinic, who performed the distention operation as the first after my original publication, by Czerny and Martina, and by Nicholas Senn, who was present at my first operation in May, 1897, by Böttcher, and by Goldmann, who tried to improve the method by calling it *die ausgiebige Mobilisation der Harnröhre* (extensive mobilization of the urethra), in *Beiträge zur klinischen Chirurgie*, xlii, April, 1904.

As far as the extreme cases of perineal hypospadias are concerned, may I be permitted to call attention to the fact that in my demonstration before this society on October 8, 1900, I advocated a flap operation (see *New York Medical Journal*, December 8, 1900, Figs. 10, 11, and 12). Since then I have performed various combination operations, that is utilizing the distention principle together with the flap formation, as it is illustrated in the *New York Medical Journal*, Urethroplastic Operations, etc., and On Some Points Regarding Urethroplastic Operations, etc (See above.)

Various modifications have been tried by others with more or less satisfactory results, but up to the present time an ideal method for treating this type has not been found.

As far as failures of the distention method are concerned it seems to me that they are more due to the hand than to the method itself. The most frequent mistake made is that the urethra is not sufficiently mobilized. Undue tension always takes its revenge in plastic surgery and especially if the operating field is in as delicate an organ as the urethra is. Patients have been repeatedly sent

me by reputed surgeons after having tried my method in vain, accompanied by a large question mark. As a rule it was a case of the penile type, and in every instance the degree of forward dislocation was insufficient. Thus the sutures at the glandular orifice yielded to natural tension and the displaced urethral portion withdrew. In adults the erections caused much distress.

Careful observation of diet is imperative therefore for the first four or five days. Large doses of potassium bromide are in order. Before the operation copious passages should be obtained while afterward the peristalsis is to be arrested by opiates for a few days.

I am guilty of three failures myself, all of them being grave cases. At the same time they were unmanageable individuals. Two were large boys and one a man. The latter cut off the sutures with a pen knife during the night when the hospital nurse was absent. If a *cathéter à demeure* is employed in such a case, the intraurethral portion of the severed catheter is apt to glide into the bladder, especially if the instrument is old and brittle. None of my early operations was followed by a failure. Small fistulae form sometimes when coaptation is not thorough; if they are very small, cauterization with the galvanocautery or nitric acid may effect a closure, but in most cases a partial or total repetition of the operation is to be done.

THE ANATOMICAL AND CLINICAL RELATIONS OF THE SPHENOPALATINE (MECKEL'S) GANGLION TO THE NOSE AND ITS ACCESSORY SINUSES.*

By GREENFIELD SLUDER, M. D.,

St. Louis, Mo.

Anatomical Relations.—The treatises on anatomy describe the sphenopalatine (Meckel's) ganglion "as lying in the pterygopalatine fossa close to the sphenopalatine foramen." (Quain, Bardeleben, Pieroni, Sobotta, and others.) The pterygopalatine fossa is described as "formed above by the under surface of the body of the sphenoid and the orbital process of the palate bone; in front, by the superior maxillary bone; behind, by the anterior surface of the base of the pterygoid process and lower part of the anterior surface of the great wing of the sphenoid; internally, by the vertical plate of the palate."¹

Neither this description nor any found in other textbooks on anatomy suggests any close relation of Meckel's ganglion to the nose or its accessory sinuses; nor do the special treatises upon the nose make mention of such relation. As a fact, however, Meckel's ganglion lies very close to the external bony wall of the nose, in which the sphenopalatine foramen occurs as a small deficiency at its upper posterior part. By actual measurement Meckel's ganglion frequently lies as close as one or two millimetres from the nasal mucous membrane; it may lie as deep as seven or even nine millimetres.

The current descriptions of the pterygopalatine fossa give the impression of its being surrounded by solid bones. This also is misleading. More

*Presented as "Candidate's Thesis" to the American Laryngological Association, May 5, 1908.

¹This description is taken from Gray's Anatomy, 1890.

comprehensively, the description "formed above by the under surface of the body of the sphenoid and the orbital process of the palate bone" means that it is bounded above by the walls of the sphenoidal sinus, including the pterygoid process of the palate bone closing it, and that the separating wall is a thin one. The description "in front, by the superior maxillary bone," means that it is bounded in front by the wall of the maxillary sinus and that this wall too is of thin bone. The description "behind, by the anterior surface of the base of the pterygoid process and lower part of the anterior surface of the great wing of the sphenoid" means that this wall also is, in some cases, only a thin plate separating the fossa from a downward prolongation of the sphenoidal sinus into the pterygoid process and into the great

tine fossa (Fig. 1). The sphenoidal sinus may also form the posterior boundary of the pterygopalatine fossa as a result of its being prolonged downward into the pterygoid process and great wing. (Fig. 3.) A post ethmoidal cell may bound the anterior half of the upper part of fossa. (Fig. 3.) The wall of the nose may curve so sharply outward as to form a part of the anterior boundary of the fossa.

Meckel's ganglion lies high up in the pterygopalatine fossa. It is apparently prolonged backward into the Vidian (pterygoid) nerve. (Quain, *Anatomy*, 1897.) There is usually a marking upon the bone corresponding to this; a well modelled funneling at the anterior end of the canal.

Relations of Meckel's Ganglion in the Pterygopalatine Fossa. The ganglion lies close to the top of

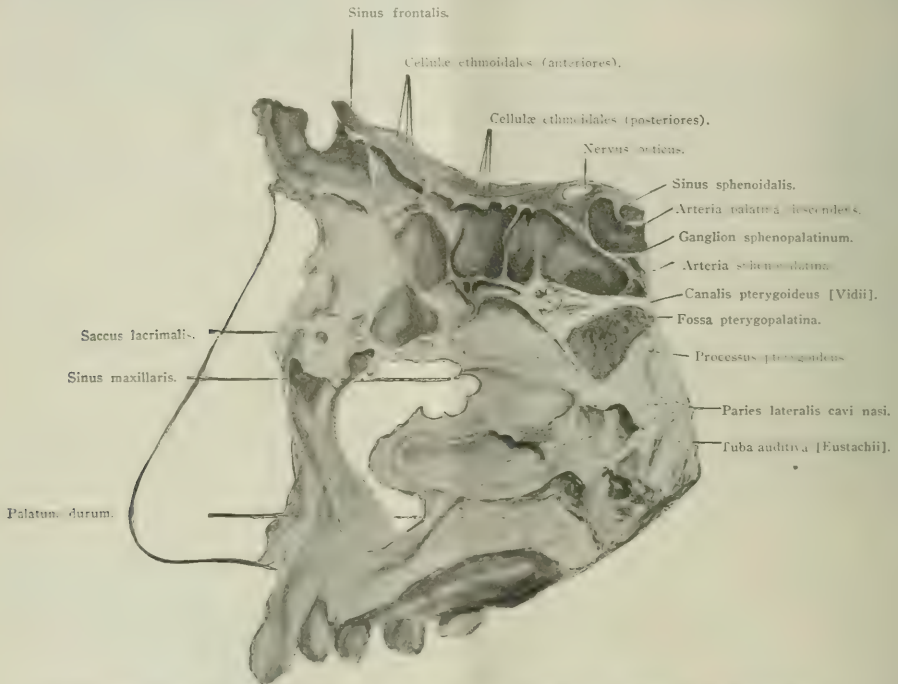


FIG. 1.—Sagittal section, 3 mm. lateral to the sphenopalatine foramen, specimen decalcified in hydrochloric acid.

wing; a condition which is not uncommon, although in the great majority of cases the pterygoid process is of solid bone.

The outer aspect of the pterygopalatine fossa is then the only one that is not in intimate association with the cavity of the nose or its accessory sinuses.

It seems essential that in any comprehensive description of these parts special emphasis should be laid upon their intimate relations to the nose and its accessory sinuses; and this is certainly true if the anatomy is to lead the way to clinical application or investigation.

The variations of the accessory sinuses ought also to be studied in detail: The sphenoidal sinus may form the entire upper boundary of the pterygopa-

lary fossa. (All textbooks are agreed upon this point). In front the ganglion is in relation with the arteria palatina descendens and arteria sphenopalatina and with the corresponding veins. These vessels, with some surrounding connective tissue, form a separation of 3 or 4 mm. from the wall of the maxillary sinus,—the anterior boundary of the fossa.

The Relations of Meckel's Ganglion to the Walls of the Accessory Sinuses of the Nose. When the upper boundary of the fossa is made wholly by the sphenoidal sinus (Fig. 1) the ganglion lies in close relation to the sphenoidal sinus. When the upper boundary of the fossa is made by the sphenoidal sinus in its posterior half and by a postethmoidal

cell in its anterior half (Fig. 3) the ganglion lies in close relation to both. When the sphenoidal sinus is prolonged downward into the pterygoid process (Fig. 3) the ganglion will then lie posteriorly in close relation to the sphenoidal sinus.

Anteriorly the fossa is formed by the wall of the maxillary sinus. But the ganglion can never lie in close relationship to this wall because of the pad formed by the arteria palatina descendens and the arteria sphenopalatina with their accompanying veins and surrounding connective tissue. (See above).

The Relation of Meckel's Ganglion to the Common Wall of the Nose. The sphenopalatine foramen seems to be accurately placed at a point just posterior to and immediately above the posterior tip of the middle turbinate. All authorities are agreed

tioned structures with their accompanying connective tissue instead of air.

Clinical Relations. With such intimate anatomical association, clinical manifestations from the extension of inflammation or its products would seem of almost necessary occurrence. Meckel's ganglion is, in fact, in quite as close relation to the nose and its accessory sinuses as is the optic nerve. It has long been recognized that inflammatory processes in the sphenoidal, postethmoidal, and maxillary sinuses extend to the optic nerve, and the fact has been demonstrated post mortem (Birsch-Hirschfeld). It is therefore altogether reasonable to assume that these processes also pass over to Meckel's ganglion, although the clinical picture is very much less striking than the blindness produced by involvement of the optic nerve.

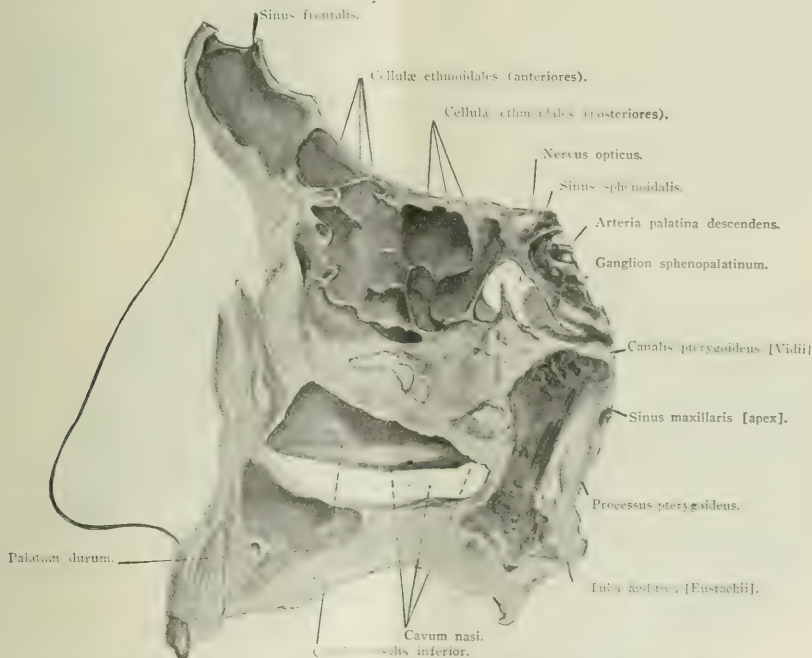


FIG. 2.—Sagittal section, 5 mm. lateral to the midline. Specimen preserved in formaldehyde and alcohol.

that the ganglion lies close to the plane of this foramen.

The ganglion, however, does not always show the same relation to the foramen. I have found it as close as one or two millimetres from the general membrane of the nose, and as far as nine millimetres. I believe the variation in the position of the ganglion, whether higher or lower, to be very slight. It varies more as to whether deeper or shallower in relation to the membrane of the nose.

The pterygopalatine fossa considered from this point of view is seen to resemble an accessory sinus of the nose. It is, however, not closed externally or below by nasal-tissues and is filled by the before men-

According to my observations, characteristic disturbances have followed postethmoidal and sphenoidal suppurative inflammations which cannot be explained otherwise than by assuming that Meckel's ganglion has become involved by extension; some of these disturbances have been transitory, and some have persisted for many years. In other cases the conviction has been equally positive that the extension has been from the nose proper. Thus far I have not seen anything that I could interpret as an extension from the maxillary sinus. From the anatomical relations of Meckel's ganglion to the anterior boundary of the pterygopalatine fossa, i.e., to the posterior wall of the maxillary sinus (see Fig. 1),

I do not believe that it is very likely to be involved by extension of an inflammatory process from that sinus, inasmuch as the arteria palatina descendens and the arteria sphenopalatina, together with their accompanying veins and the surrounding connective tissue, lie between the ganglion behind, and the wall of the maxillary sinus in front. This relation appears to be constant; and, I believe, explains why clinical manifestations referable to the ganglion do not ordinarily follow inflammatory processes in the maxillary sinus.

During 1907 I saw a number of cases of acute suppurative inflammation, of gripe origin, in the sphenoidal and postethmoidal cells. The patients got well in from three to four weeks, but pain

tions; now, after an observation of forty-seven cases, it is possible to draw a more complete clinical picture.

The typical picture of these neuralgic phenomena (or at least the picture oftenest presented) is of pain which begins at the root of the nose, extends downward over the maxilla, and backward on the mastoid to become severest about 5 cm. posteriorly to its tip; thence extending backward to take in the entire occiput, and downward into the neck, shoulder blade, shoulder, and sometimes into the axilla. With the severest attacks it extends down into the arm, forearm, hand, and even to the fingers. According to my observations this pain very rarely invades the upper part of the head. When very se-

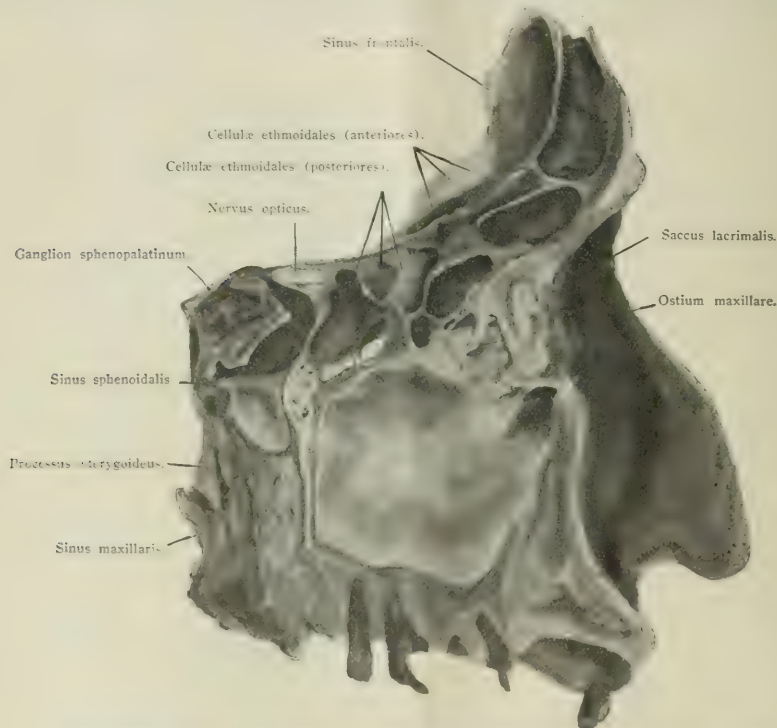


FIG. 1. Sagittal section, 7 mm. lateral to the sphenopalatine foramen, specimen macerated in hydrochloric acid.

still remained which seemed neuralgic in nature. Usually the neuralgic manifestations arose a few days after the inflammatory onset. The pain of the suppurating sphenoid referred to the occiput, or of the postethmoidal cells referred to the parietal eminence, usually preceded these neuralgic symptoms. I have seen, however, similar neuralgic phenomena in an ordinary coryza of moderate severity without suppurative involvement of any of the sinuses.

In a preliminary report,² based on ten cases, I have already described certain of these manifesta-

vere it may extend a little way into the brow, or somewhat above the line of the zygoma. I have seen this picture complicated by or associated with other headaches; but the distinctive "neuralgic phenomena" as outlined before, and which have proved uniformly amenable to treatment (cocainization from the nose), have not extended to the upper part of the head. I have observed also concurrent salivation and perversion of the sense of taste (described as metallic), referred to the affected side, and, not infrequently, earache, toothache, or pain behind the eye.

I have observed also, in some cases, a sore throat, described as on the affected side, of which no visible

²The Role of the Sphenopalatine (or Meckel's) Ganglion in Nasal Headaches. By Greenfield Sluder, M. D. *New York Medical Journal*, May 29, 1908.

explanation was found in the throat, and in which prompt relief was afforded by the application of cocaine in the neighborhood of the sphenopalatine foramen.

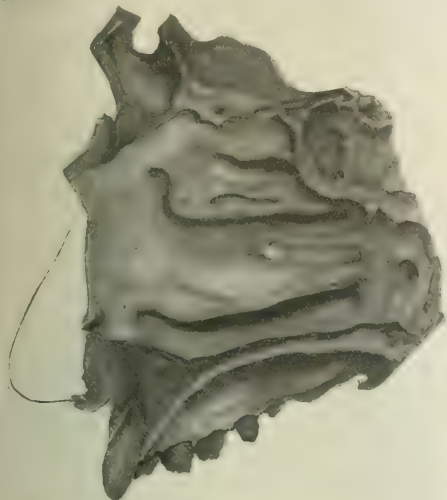


FIG. 4.—General cavity of nose. Deeper portion of this specimen is shown in Fig. 1.

I have on four occasions thought I detected motor disturbances in the soft palate, but of this I am not sufficiently sure to permit a positive statement.

I have never seen trophic changes. By way of experiment I anæsthetized the ganglion in a case of convulsive motor tic, and in one of sensory tic, without result.

I herewith submit some reports of cases, each of which seems illustrative in its way.

CASE I.—Miss S., twenty-seven years old, consulted me June 13, 1906. For many years, "off and on," she had suffered from pain in the head, which she described as paroxysmal, beginning at the root of the nose, involving the upper jaw and teeth (occasionally also the lower jaw and teeth), extending backward to the tip of the mastoid, and becoming intensest about 5 cm. posterior to this point.

These paroxysms recurred sometimes two or three times a week; and, when at her best, at intervals of two or three months. Examination of the nose was negative in every particular. She made the observation, however, during an attack, that the cocaine which had been sprayed into the nose, a four per cent. solution, had relieved her of the pain.

In the absence of a definite diagnosis, but continuing the spraying of the nose with cocaine, it was found that each application appreciably mitigated the pain. Under this treatment, in apparently much improved condition, she passed from observation. About three months later she returned for treatment of a severe coryza, which in two days localized itself in a suppurating inflammation of the postethmoidal and sphenoidal sinuses of both sides. Almost simultaneously the old pain reappeared, on the left side, involving the root of the nose, the cheek, the mastoid tip, and a little behind it, the neck, shoulder blade, shoulder, and arm—all in great severity.

Remembering the position of Meckel's ganglion, in close proximity to these sinuses, and the widespread distribution of its branches and connections, I felt that this distribution of pain was possibly due to the inflammation or its products extending to or acting upon the ganglion; and, if this was true, that cocaine applied (soaked) over the sphenopalatine foramen might probably prove effective in at least mitigating the pain.

The experiment was tried, and succeeded even beyond expectation. Since then I have applied the cocaine for her at the same site in severe recurrent attacks, probably twenty times; always relieving the pain and usually aborting the attack.

I have also done some experimenting in these cases, but particularly in this case. During an attack an application of a single drop of dilute solution four per cent. cocaine, through the nose to the region overlying the ganglion, was followed by only the faintest relief. This dilute solution was then replaced by a drop of a ten per cent. cocaine solution, with more relief. A drop of a twenty per cent. solution was then applied, with further lessening of the pain. A drop of a saturated solution (about sixty-seven per cent.) was then applied, when the relief would usually become complete. Applications to other areas gave negative results. In very severe attacks the pain would stop except at the point 5 cm. posterior to the tip of the mastoid, where, although greatly mitigated, it never quite disappeared; a very slight pain always remained here. The applications were allowed to remain twenty minutes in position.

This patient suffered greatly from repeated attacks until December 1, 1908, when I began injections of alcohol; making the attempt to put the alcohol in direct contact with the ganglion. A straight needle directed upward and outward under the posterior fourth of the middle turbinate will reach the sphenopalatine fossa, just where the ganglion lies. The needle must, however, be passed obliquely through the lateral wall of the nose, which in this case was so hard as to make the procedure impossible. I thereupon drilled through the bone, thus removing the obstacle to the passage of the needle into the pterygopalatine fossa and opening an easy route for subsequent injections. The injection of the alcohol aggravated the characteristic pain already described, but the exacerbation was transitory and was followed by relief.

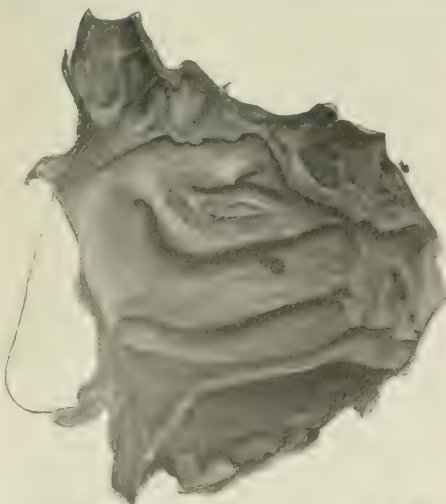


FIG. 5.—General cavity of nose. The deeper portion of this specimen is shown in Fig. 2.

After a course of ten injections the relief seemed complete; but, after somewhat more than three weeks of freedom from pain, the patient contracted another severe coryza, with suppurative inflammation of the postethmoidal and sphenoidal cells of both sides, rekindling the old pain now for the first time also on the right side, although with less severity than on the left side. One application of saturated cocaine solution on the right side, posterior to and slightly above the posterior tip of the middle turbinate, stopped the pain, and it did not recur. On the left side relief was more tardy.

Miss S. had recently had another "explosion," which was relieved by one drop of saturated cocaine solution to the ganglion with the exception of a rather severe pain, which

persisted in the shoulder blade of that side. On the next day the cocaine application was repeated, with complete relief of the pain.

CASE II.—Mr. B., thirty-five years old, came to me September 24, 1907, with a high grade deflection of the septum, which I resected. The operation was in every way uneventful and satisfactory. May 14, 1908, he returned with an acute suppurative inflammation of the postethmoidal and sphenoidal cells of both sides, accompanied by a headache referred to the parietal eminence and occiput of both sides, which lasted seven days. Three days later pain developed, which he described as beginning in the root of the nose, taking in the maxilla, extending backward into the occiput, and downward into the neck and shoulder blade. It improved under applications of 0.4 per cent. formaldehyde solution over the sphenopalatine foramen. Patient was completely well June 23, 1908, and has remained so.

CASE III.—Mr. S., forty-five years old, came to me November 23, 1903. For ten years he had suffered much from headache which incapacitated him for business two or three days of almost every week. Nothing in his general health or life was at fault. He defined the distribution of the pain as beginning at the root of the nose on the right side, taking in the upper jaw, and extending backward to become emphasized at the tip of the mastoid and for a distance of 5 cm. posterior to it. The attacks were not always of equal severity. During a milder attack he could continue his business. In severe attacks the pain extended to the neck, shoulder, and shoulder blade of the same side, and was so intense as to compel him to go to bed. They were accompanied by vomiting. These severe attacks lasted from twelve to twenty-four hours.

Examination of the nose showed a dusky red swollen area in the right olfactory fissure about 1.5 cm. in diameter, roughly circular, beginning on the anterior wall of the sphenoidal cells and extending forward.

Applications of a two per cent. silver nitrate solution were made to the affected area two or three days a week for about three months. It finally became normal in appearance. With the improving appearance of this area went hand in hand a lessening of the frequency and severity of the attacks of pain, until they ceased. Since that time he has enjoyed freedom from painful attacks except at the time of a coryza. Coryzas of medium severity were accompanied by a moderately severe attack of pain, as described before. He had one severe coryza which was accompanied by great pain.

After I had learned to associate these neuralgic manifestations with Meckel's ganglion, and to apply the anæsthetic in its immediate neighborhood (October, 1907), I was always able to stop the pain during coryzas. With this patient anesthetizing the ganglion aborts the attack.

CASE IV.—Mrs. N., sister to Mr. S., whom I had seen many times in acute coryzas, came February, 1909, with what appeared to be a coryza of ordinary severity; she complained, however, of pain as in a typical case of Meckel's ganglion neuralgia. One application of cocaine afforded complete relief, and there has been no recurrence of pain. The coryza was otherwise commonplace and uneventful.

CASE V.—Mrs. L., forty-two years old, came to me August 3, 1908, complaining of pain behind the right eye and in the upper jaw; (all sinuses normal). She described the pain as constant. She stated that she had for thirty years been subject to violent headaches, ending in vomiting. This was diagnosed as migraine by Dr. F. R. Fry, who sent her to me. A little later I saw her in one of her "bad spells." The pain was very great. It took in the entire half of the right side of the head and ran down into the neck, shoulder, shoulder blade, axilla, arm, forearm, and hand. A drop of a 1 per cent. solution of cocaine, introduced per os, and when soaked into the site of the sphenopalatine foramen with marked relief except of the pain in the upper half of the head. A second application was then made with complete relief of all the pain except that of the upper half of the head, which remained unchanged. The relief afforded in this attack lasted about one hour, at the end of which time the pain had returned just as it had been. I saw her in two more "bad spells," the histories of which were identical with the one given. Each time cocaineizing over the ganglion stopped all the pain except that of the upper half of the head, and the relief lasted about an hour.

Applications of one half per cent. formaldehyde were continued over a period of four months; the pain behind the eye and in the jaw having stopped at the end of four weeks, for the most part. It occasionally returned in a lesser de-

gree. The intervals between the "bad spells" became longer and their severity lessened.

In addition to these cases, I desire to call special attention to a case of an acute access of glaucoma reported by Dr. A. E. Ewing.¹

In this case the area of the sphenopalatine foramen was inflamed. One application of one drop of a fifty per cent.



FIG. 6.—General cavity of nose. The deeper portion of this specimen is shown in Fig. 3.

solution of cocaine to the sphenopalatine foramen stopped the violent pain. It did not return. The attack aborted. Applications of one half per cent. formaldehyde were continued daily in conjunction with the proper eye treatment for three months. Four months have now elapsed since the onset with no return of pain. In this case the other eye had been lost by glaucoma, three years previously. The pain had been relieved only by iridectomy. But despite this there had lingered always a little pain in this eye. An injection of alcohol into Meckel's ganglion aroused this pain to great severity, which lasted about three hours and then began to subside, requiring a week to stop altogether. But when the reaction was finally over the old pain had stopped. Two months have now elapsed with no return. (The idea of associating glaucoma with Meckel's ganglion was Dr. Ewing's. This case was treated throughout in accordance with his ideas and instructions.)

3542 WASHINGTON AVENUE.

A NEW CONTAINER FOR THE PRESERVATION OF A CONSTANT TEMPERATURE OF SALINE SOLUTION FOR RECTAL IRRIGATION OR INFUSION:

*Applicable to Proctocolysis, Enterocolysis, Hypodermocolysis,
and Infusion.*

By ROBERT COLEMAN KEMP, M. D.,
New York.

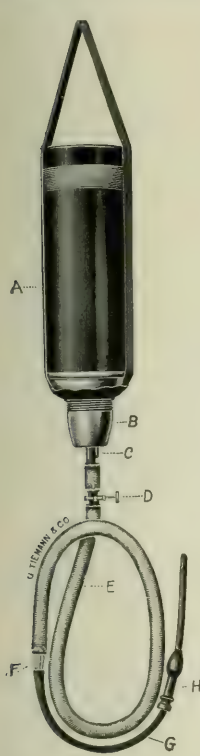
Visiting Physician to the New York Red Cross Hospital; Consulting
Physician, Gastroenteric and Urologic Clinics to the Manhattan
State Hospital, etc.

One of the difficulties which the physician must endeavor to overcome in the administration of saline solution by the rectum or by infusion is the maintenance of a constant temperature of the solution. This

¹Case of Acute glaucoma relieved by Cocaine Applied to Meckel's Ganglion. By A. E. Ewing, M.D. *American Journal of Ophthalmology*, December, 1908.

is especially true of proctoclysis, the injection of saline solution into the rectum by the drop method, as first suggested by Dr. John B. Murphy, of Chicago. Elbrecht's apparatus necessitates a special heating chamber in addition to the containing reservoir, with the employment of an electric heater, an alcohol lamp, or a Bunsen burner. The method, though scientific, seems complicated and is quite expensive.

I have recently employed the vacuum bottle with a specially devised attachment which has proved efficacious in preserving the saline solution at a constant temperature. The device is readily understood from the illustration.



Through the screw cap B, which closes the bottle, passes a small hard rubber (nonheat conducting tube) to which is attached the outflow tube, E. Parallel with this is the filiform tube, C, which allows the entrance of a fine column of air so to render the flow possible. This last tube passes through the solution to within about one eighth of an inch from the bottom of the bottle. As the instrument is employed inverted, it would correspond to the same distance from the top of the bottle. This filiform tube is of hard rubber externally where exposed to the air as a nonconductor of heat. The part lying within the bottle is purposely made of metal so that it is rapidly heated by the surrounding solution and the entering air is thus in turn heated markedly.

A series of experiments has demonstrated that there is only a loss of 1° to 2° F. in the temperature of the solution in the bottle during the administration of proctoclysis (the drop method) lasting half an hour, a negligible amount. The screw compression valve, D, is applied close to the bottle attachment so to avoid as much as possible the solution cooling in the soft outflow tube. This outflow tube, E, is joined to the catheter, G, by a short piece of glass tubing, F, for the purpose of observing whether the flow is constant. The catheter for rectal injection passes through a self retaining rectal tip, H, and the former can be inserted to any length desired. The conducting tube, E, is especially thick as in Elbrecht's apparatus.

Asbestos ribbon is wound about the conducting tube from its junction at the bottle to the catheter. This lessens dissipation of heat and obviates the use of hot towels. The asbestos wrapping can be occasionally slipped off the glass connecting joint so as to

observe the flow. The vacuum bottle is filled in the usual manner and the special cap with attachment screwed on. The bottle is then inverted and suspended in a cord sling as in the illustration. A small amount of fluid will escape from the bottle by the filiform air tube until the solution reaches the level of the tube, which now lies near the top of the bottle. The bottle is then suspended about six inches above the rectum or higher if desired, and the flow tested for the proper speed before inserting the rectal tip and catheter.

As already stated, there is practically no loss of heat in the container, all of it occurring during the passage of the drops through the outflow tube, the slower the speed the greater the loss.

At the start the speed is always more rapid and, though gauged to, say fifteen drops per minute, may in the course of two minutes drop to five. A test of two to three minutes should therefore be made before inserting the catheter, so as to insure a constant flow at the desired rate.

The following table will be found of service; with

a temperature of water in bottle.	length of tube.	number of drops per minute.	temperature in rectum.
160° F.	30 inches	20 or less	100° F.
150° F.	30 inches	40 or 50	100° F.
138° to 140° F.	30 inches	150 to 200	105° to 110° F.

If the injection is given at a greater speed than 200 drops per minute, the solution in the bottle should not be over 120° F. as there is practically no loss of temperature. This method by enema or recurrent enteroclysis would be of great value in shock. It could then be followed by proctoclysis as an adjunct.

Hypodermoclysis. There is a loss of 10° to 20° F. during the injection, depending upon the size of the hypodermic needle.

Infusion. Dawbarn advocates a temperature of 115° to 120° F, preferably the latter, time ten minutes to the litre.

With the smaller vacuum bottle containing about a quart, a glass V tube can be inserted between the conducting tube and the rubber tube for attachment to the infusion cannula. By this means it is possible to tell when the bottle is empty and thus prevent the entrance of air. A clamp can be applied close to the V tube on the cannula side and the bottle refilled, the V tube being refilled before the conducting tube is reattached and the latter being done while the solution is flowing.

A larger bottle can be secured for infusion, but the smaller one can be employed with these precautions.

The temperature of the saline solution does not practically change during the infusion and should be at 115° to 120° F in the reservoir.

107 EAST FIFTY-SEVENTH STREET.

CLINICAL DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

By JAMES ALEXANDER MILLER, A. M., M. D.,
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So much has been written lately concerning the early diagnosis of pulmonary tuberculosis, that it seemed almost superfluous to attempt again to treat

*Read before the National Association for the Study of Tuberculosis, June 13-18, 1909, Atlantic City, N. J.

this somewhat hackneyed subject. In a "symposium" of this kind, however, clinical diagnosis must of necessity have its place. I shall therefore attempt to discuss this subject from a practical point of view with the idea continually in mind of the application of rational and generally accepted methods which are well within the range of usefulness of any general practitioner.

It has seemed to me that by the multiplicity of details, and ultra refinement of method, we are in danger of giving the impression that early diagnosis in pulmonary tuberculosis belongs to the specialists. As a matter of fact such diagnosis is no mystery revealed only to the few initiated, but is rather the sure reward of eternal suspicion and uniform habits of carefulness on the part of the family practitioner to whom these patients at first apply for diagnosis. In a comparatively few cases true diagnostic genius or exceptionally varied experience may be necessary but is not for failure to correctly diagnose these proportionally few cases that the medical profession as a whole now stands on the defensive, widely accused of inefficiency in the early diagnosis of tuberculosis by an aroused and enlightened public.

It will, therefore, be my purpose simply to describe the basis for diagnosis which I have myself found practically useful, and will omit any effort to present anything new or to describe unnecessary details which are often more confusing than helpful.

HISTORY.

First in logical sequence as well perhaps as in importance is the history. Too much care cannot be taken to make this complete and detailed. Of especial importance is the establishment of a definite exposure to infection, particularly if that exposure has been intimate or prolonged. This is most commonly a question of close contact with the disease either in the home or at the place of work.

The history of previous diseases is often also prolific of information when carefully analyzed, and many are the cases of grippe, pneumonia, pleurisy, and malaria which plainly spell tuberculosis when the masquerade of names is lifted by diligent inquiry. Past history of enlarged cervical glands, pleurisy with effusion, and fistula in ano can almost always be assumed to have been tuberculous. An appreciation of the relapsing nature of tuberculosis often quickly correlates such previous histories with the intervening period of good health, and the present symptoms, into a clear clinical picture.

The present history obtained in cases of incipient tuberculosis presents a wide variety of symptoms, and this very variety is largely responsible for much faulty diagnosis. The only safeguard for a general practitioner is a constant attitude of watchfulness for tuberculosis, and in doubtful cases to treat the patient as though tuberculosis were present until the contrary can be definitely proved.

The more usual methods of onset are: 1, The catarrhal or influenzal in which the cough is the principal symptom; 2, the malarial, so called, in which general malaise, loss of appetite, slight rise of evening temperature, and perhaps mild digestive disturbance are usually associated with or follow the cough; 3, hæmoptysis which should always be considered to be due to tuberculosis unless another definite cause can be demonstrated; 4, gastric disturb-

ances obscuring other more definite symptoms for a varying period of time; 5, anæmia without apparent cause, especially in young girls in whom the frequency of chlorosis may put one off guard in regard to the underlying infection; 6, pleurisy with effusion is not an infrequent mode of onset and should be considered tuberculous unless prolonged observation proves the contrary; 7, pain in the chest, usually dull aching in character, and referred to the shoulder blade is by no means an infrequent first symptom, and one which is often disregarded.

The combination of any two of these symptoms or trains of symptoms should, usually, be sufficient to establish a tentative diagnosis, whether they present themselves in a continuous story of gradual impairment of general health, or whether, as is most common, they are separated by intervals of comparative improvement. Even the lack of definite physical signs should not allay suspicion in such cases, and a habit formed or requiring prolonged supervision and periodical reexamination will often forestall the humiliation of discovering that some other physician has been consulted to make the later examination which may then reveal perfectly obvious signs.

PHYSICAL EXAMINATION.

Physical examination must, however, be the mainstay of our diagnosis. This consists of two main divisions; 1, that of the lungs for the determination of the lesion; and 2, general examination and observation for evidences of toxæmia.

Proper methods are essential in order to obtain accurate results, and as most important of these, I should mention the removal of all clothing to the waist in every case, a quiet room with the patient in a comfortable sitting position upon a stool, examination of *all* portions of the chest, painstaking instruction to the patient of how to elicit the desired signs, especially the cough and breath sounds, repeated examinations at varying times of day, especially the early morning, and finally, a courage to refuse to give a positive opinion in doubtful cases until opportunity has been given for sufficient observation.

In the examination of the lungs, the usual methods of inspection, palpation, percussion, and auscultation are of course routine and are generally in themselves sufficient. Of these, auscultation is by far the most important and conclusive. I make this statement without intention to slight the necessity of employing the other methods, but in my experience, cases in which one can be absolutely sure of a lesion in the absence of any abnormal signs on auscultation are very few, and this method is usually therefore the court of last and final resort in suspicious cases.

Corroborative evidence obtained by the other methods is of course most helpful, such as localized retraction, lagging of one side, restricted movement at the apex or the base, variations in vocal fremitus, and deviations from normal pulmonary resonance. Appreciation of the sense of resistance on percussion, and also of the absolute percussion note as recently emphasized by Waller are important. I have, however, been unable to use with much advantage Kronig's method of mapping out the isthmus of

resonance at the apex, or Pottenger's sign of increased rigidity of the intercostal muscles.

On auscultation, I am a confirmed believer in the use of the stethoscope applied systematically to all portions of the chest. The unaided ear undoubtedly can better appreciate some changes in breath sounds, but cannot compare with the stethoscope for adaptability to all regions, and for the detection of râles. Moreover, the routine use of the stethoscope in ordinary hands tends toward thoroughness in examination, and that of the unaided ear, in my experience, toward carelessness.

Certain areas of the chest are of course to be examined with especial care. In the approximate order of their importance they are, the apices above the clavicle; the apices posteriorly in the supraspinous fossæ; the first intercostal spaces, particularly the inner and outer extremities; the interscapular region, just below the level of the fourth dorsal vertebra corresponding to the apices of the lower lobes; the area along the vertebral border of the scapula when the arm is thrown well forward with the hand on the opposite shoulder, this area corresponding to the septum between the upper and the lower lobes; an area internal to the angle of the scapula corresponding to the lung area in proximity to the bronchial glands; and finally, in children, the fifth and sixth intercostal spaces just outside the nipple line.

The most satisfactory routine procedure for auscultation that I have found, is the use of a short, sharp cough alternating with a short, quick forced inspiration which is quickly expelled. This is employed without any previous deep breathing for the detection of respiratory movement, expansion, etc., so that evanescent râles may not escape detection. Properly executed, this method may be employed uninterruptedly over the entire chest without fatigue or dizziness on the part of the patient, or when desirable, slight intervals of rest may be afforded, during which the voice and whispered sounds may be determined.

Three separate observations can be made simultaneously by this method of auscultation:

1. The character of the breath sounds. These may be normal, diminished vesicular, interrupted or wavy, rude or "granular," prolonged high pitched respiratory murmur, or changed in quality to a bronchovesicular or bronchial.

2. The adventitious sounds. These are usually fine, slightly moist râles heard best in inspiration, but also often in expiration, and intensified by coughing. These may, however, be fine crepitant, sibilant, or sonorous râles, or even large and more moist sounds.

3. The cough sound. This sound I use in a somewhat different way from that usually described. The cough itself, consisting as it does of an intensified explosive expiration, has when properly regulated a character of its own, just as has the breath or voice sounds. This cough sound may show the same variations as have already been described as taking place in the breath sounds, and these variations have the same significance. It is, however, especially valuable for the appreciation of interruptions in its continuity either by fine râles not appreciable by any other method or at any other time,

or by more minute interruptions in continuity which are not distinct râles, but are similar to the same change in breath sounds described as granular or rude breathing. This sign may be designated "granular or rude cough sound" and indicates an early stage of the same condition which later in its further development causes distinct râles.

Auscultation is further valuable in determining the character of the spoken and whispered voice sounds, the latter is especially important as changes to the bronchovesicular denoting slight consolidation, are appreciated by the whisper more delicately and accurately than by either the voice or breath sounds.

With the systematic examination of all portions of the chest, and in the use of the cough sound and whispered voice in addition to the other methods universally employed, there are, I believe, comparatively few certain cases of incipient tuberculosis in which auscultation will not detect the lesion.

The *x ray examination* of the chest is also valuable. I have had little experience with the fluoroscope, but cannot help but feel that determination of shadows and restricted diaphragmatic movement by this method must be considerably influenced by the personal equation. The *x ray photograph* can, however, yield to no such influence, and when taken and interpreted by an expert affords a beautiful opportunity for careful study.

The satisfaction experienced upon having doubtful and conclusive signs corroborated or contradicted by this definite and graphic method cannot be overestimated. I have been fortunate in having the efficient cooperation of Dr. Lewis Gregory Cole in a considerable number of cases of this kind, with very satisfactory results.

Physical examination for evidences of toxæmia. The more usual evidences of toxæmia are, anæmia, slight dyspnoea, as shown by increased rate of respiration, rapidity of pulse, slight rise of afternoon temperature, loss of weight, and evidences of fatigue. All of these signs and symptoms are best appreciated when noted over a period of several days under varying conditions, especially after exercise and at varying times of the day. The temperature and pulse rate are very unstable in early tuberculosis, and usually show abnormal variations upon slight provocation. The daily range of temperature is often abnormally great, even when the maximum temperature is not much if any above normal. This period of observation affording as it does, opportunity also for repeated physical examinations of the chest is in many cases absolutely essential.

The diagnostic value of evidences of toxæmia cannot be exaggerated, and when associated with a suspicious history, a diagnosis of tuberculosis can often be made with certainty even in the absence of corroborative physical signs. These, however, sooner or later, usually sooner, appear to localize the focus of the disease.

ACCESSORY MEANS OF DIAGNOSIS.

1. *Search for the Tubercle Bacilli.* The sputum is of course the most important for investigation for bacilli, and in negative cases repeated and most thorough examination is necessary. The fact that a positive result is conclusive should not obscure the further fact that a negative one is not at all

so, and that bacilli are absent from the sputum in fully sixty-five per cent. of all incipient cases.

The faces and urine are reported to often contain bacilli in early cases, and the former almost invariably in advanced cases. The value of these methods has probably been unduly disregarded, and I must admit that personally I have made little use of them.

In exudates, especially in those from the pleura and spinal canal, examination for bacilli is most valuable in diagnosis, especially when animal inoculations are also made.

Very recently the examination of the gastric secretion has been urged by Hausmann as of value, because of containing bacilli frequently when they are absent from the sputum. The extended application of this method is doubtful.

The blood is maintained by Rosenberger to contain tubercle bacilli recognizable in smears, in a large percentage of incipient cases. This observation still lacks confirmation. Certainly all of these suggestions as to the ubiquity of the tubercle bacillus in the various tissues or secretions of the body in incipient tuberculosis are rather startling.

2. *Blood Examination.* The usual routine method of blood examination reveals little of value in early tuberculosis. Sometimes there is slight secondary anemia, and occasionally an increased proportion of lymphocytes.

The opsonic index has failed to aid materially in diagnosis in the pulmonary forms of tuberculosis. The faith even of the ardent supporters in this country at least, appears to have been shaken.

Arneth's method of differentiation of the nuclei of the neutrophils is also of little value in diagnosis, although for prognosis it may be helpful.

3. *Examination of the Cellular Elements of Serous Exudates.* This examination is of real value because of the high percentage of lymphocytes present in cases of tuberculous infection.

4. *The Tuberculin Tests.* The recent use of the tuberculin tests has served to widen enormously our experience with this agent in the diagnosis of tuberculosis. Not yet, however, have we arrived at a point where the interpretation of the results obtained by these tests can be said to be upon a definite scientific basis.

The hypodermic test with the experience of years behind it must still up to the present be regarded as the standard gauge in tuberculin diagnosis, and there can be no doubt of its great value when small doses up to five or six milligrammes are employed.

Of the local tests, the conjunctival is now very generally discarded and rightly so. The Moro or percutaneous test is also not in general use because of the more satisfactory and definite results obtained by the cutaneous or the von Pirquet reaction. This latter test has proved to be of extremely great value, and is probably destined to replace all others including the hypodermic test. Further experience will undoubtedly establish its limitations more certainly, and lead to a more accurate interpretation of the varying kinds of reaction obtained by it. At the present time it would seem that in children a positive reaction is definite evidence of tuberculosis, and from the nature of the case, must be more certainly a recent infection, the younger

the child tested. In adults a prompt and marked reaction is also presumptive evidence of recent and active disease; mild delayed and sluggish reactions however, are of no real value in diagnosis as latent and healed lesions which have often never given any clinical evidence will thus react. Negative reactions are extremely valuable and can be considered to exclude tuberculosis excepting in very advanced cases, in those patients with poor general resistance, or in the acute exanthemata. These exceptions to only a very slight degree impair the negative value of this test.

Too great emphasis however, cannot be placed upon the fact that diagnosis of what we may term "clinical tuberculosis" cannot be made by scratching a patient's arm; that we do not yet know with certainty the optimum strength of solution to be used, or the exact interpretation of the positive reactions obtained, and that such reactions must only be considered as one link in the chain of evidence to be used or disregarded as the careful study of other factors in the diagnosis may determine.

Our consideration of diagnosis up to this point has had to do entirely with cases where the question is of the presence or absence of definite signs or symptoms. There is another important class of cases, however, where the signs and symptoms of disease are very evident, but which present difficulty from the standpoint of differential diagnosis.

The most common conditions included here are influenza pulmonary lesions, pneumonia, syphilis of the lung, emphysema and chronic bronchitis, pulmonary signs associated with mitral disease, and lastly, signs of healed tuberculosis.

I shall not attempt at this time to discuss these problems in detail, and will only refer to the influenza lesions, and those of healed tuberculosis.

Of the pulmonary lesions encountered in influenza, the most perplexing from our present point of view are those which present signs simulating in every particular those of tuberculous infiltration. These signs are usually in the lower lobes, and cover a considerable area, the history of onset is usually rather acute, but the physical signs, the cough and expectoration and moderate impairment of the general health, may persist for many weeks after the acute symptoms have subsided. The fact that though the sputum is abundant, tubercle bacilli are absent, and influenza bacilli may be present, that the constitutional disturbance is slight as compared with the extent of the lesion, and that the lesions are in the lower lobes, are helpful points in differential diagnosis.

I have seen a considerable number of such extensive lesions which have entirely cleared up after a few weeks, but have always been uneasy in mind until they have done so. The treatment suitable for tuberculosis should be instituted in any event, while these cases are under observation.

In regard to healed tuberculous lesions of the lungs, the problems presented arise either from their discovery in the course of a routine physical examination, or as has of late been most common, because of a positive reaction to one of the tuberculin tests.

There can be no doubt that much unnecessary anxiety of mind has been caused in this way during

the past year to both patients and their physicians. It is not an easy matter to allay such anxieties, or to prove them groundless, and moreover, it is neither popular nor a wise procedure to attempt to restrain the growing tendency to make a thorough physical examination, or to discourage a willingness to suspect tuberculosis. It is nevertheless true that not a few persons are at the present time branded unnecessarily with a diagnosis of active tuberculosis, and the injustice which this entails is considerable.

The relief from this situation will probably come from the more accurate future interpretation of tuberculin reactions, and from a wider appreciation by physicians of the possibility of the persistence of physical signs for years after lung lesions have healed.

In summarizing the subject of the clinical diagnosis of pulmonary tuberculosis I should place especial emphasis upon the following points:—

1. The attitude of every physician toward tuberculosis should be that of constant suspicion.

2. The history of intimate exposure to infection and a detailed inquiry into previous illnesses are of the greatest importance.

3. A properly conducted physical examination is the cornerstone of the diagnosis, but physical signs of tuberculous toxæmia are quite as important as are the signs in the lungs.

4. Prolonged observation and repeated examinations are often essential.

5. Failure to find the tubercle bacilli in the sputum and other excretions is evidence of little value.

6. The tuberculin tests are valuable in connection with the clinical manifestations, but their exact significance is not yet absolutely determined.

7. In general, the diagnosis is based upon no one symptom, sign, or test, but upon a careful correlation of all the evidence into a rational clinical picture.

18 WEST FIFTY-FIRST STREET.

THE PRESENCE OF TUBERCLE BACILLI IN THE URINE OF TUBERCULOUS PATIENTS, THEIR SIGNIFICANCE AND DANGERS.

By E. J. G. BEARDSLEY, M. D., L. R. C. P. (London), Philadelphia,

Clinical Pathologist at Henry Phipps Institute; Physician at Henry Phipps Institute; Assistant Demonstrator of Clinical Medicine, Jefferson Medical College.

For twenty-four of the twenty-seven years since Koch's (1) discovery, and isolation of the bacillus responsible for tuberculosis it has been known that the tubercle bacillus could, at times, be found in the urine of a tuberculous patient. Koch, in the more elaborate report (2) which followed his original paper, pointed out this fact, while later writers confirmed his findings.

At first it was thought that the presence of acid fast bacilli in the urine of a patient was positive evidence that there was tuberculous disease of the genitourinary tract. For this reason the greater number of the early cases reported with acid resisting bacilli in the urine were instances of successful search made by surgeons who suspected tuberculosis of the kidney or bladder. As is true of many of the great medical discoveries in other fields, there

was still much to learn as to the correct interpretation of the presence of such organisms in the urine. Just as the profession was about to accept the belief that the presence of acid fast bacilli in the urine was positive proof of the presence of tuberculous infection of the genitourinary tract, Alvarez and Tavel (3) published their observations, in which they described other acid fast organisms but chiefly one found in the urine, which, when stained by the ordinary staining methods, was indistinguishable from the tubercle bacillus. It was ascertained that smegma contained large numbers of these organisms and the bacillus was named the *Bacillus smegmatis*. Other writers were able to support these findings, notably Matterstock (4) and Klemperer and Bittu (5). Shortly after these studies were made it was found that the smegma bacillus was but one of many organisms which might be mistaken for the specific germ of tuberculosis. So numerous are these so called "acid fast" that Abbott and Gildersleve (6) were able to describe thirty varieties in their very complete study of the ætiological significance of this group of bacteria.

That the majority of these germs which resemble the tubercle bacillus are not normally found in the urine detracts in no way from the possibility of their being mistaken for this germ, moreover, it was soon learned that in only one way was it possible to distinguish the pseudotuberculous organism from the specific germ, namely, by the inoculation of susceptible animals with a suspension of the suspected material. This was advocated by Koch and pronounced by him the only reliable method; but many workers thought it too long and laborious, and attempted to obtain the same result by other methods only to return to the original plan of Koch. In America, Reynolds (7) was the first to insist that only by inoculation experiments could positive and conclusive results be obtained.

It was also learned, about this time, that, when acid fast organisms other than the tubercle bacillus were injected into the bodies of susceptible animals they sometimes brought about the death of the animal, lesions being found that were identical with those caused by the tubercle bacillus, except that, from them no specific organism could be recovered. Thus, in order to prove that the urine of a patient contains virulent tubercle bacilli it is necessary to do more than find an acid resisting germ in the sediment.

A suspension of the suspected bacilli, freed as much as possible from the toxic materials of the urine, must be injected into a suitable animal, known to be free from disease, and the material injected must cause tuberculosis and from the lesion must be recovered the tubercle bacillus which, when injected into a second susceptible animal, must cause tuberculosis in it. Notwithstanding the fact that inoculation experiments are necessary to prove conclusively that an acid fast organism in the urine is a virulent tubercle bacillus, an opinion of value can be found by observing the behavior of the organism when stained by different methods. Pappenheim (8) was among those who studied this problem of differential staining and by his experiments established the fact that the smegma bacillus when stained by the ordinary Ziehl-Nielsen method and placed in alco-

hol, rapidly lost its red color while the tubercle bacillus remained unchanged.

As the smegma bacillus is the only acid fast germ that is known to frequently contaminate the urine it can be seen how important is a staining method which will satisfactorily distinguish these two acid fast organisms. Pappenheim later developed a special staining method which satisfactorily differentiates these bacilli. His method of staining is as follows: Stain with carbol fuchsin in the usual way, pour off the excess of stain and decolorize as well as counterstain with a solution composed of corallin, one part dissolved in 100 parts of absolute alcohol, with methylene blue added to saturation, and finally 20 parts of glycerin. The counterstain should be poured slowly over the preparation three or four times, or until the specimen loses all the red color. This stain reveals the tubercle bacillus stained red, while the smegma bacillus, if present, is stained blue. It is readily seen that the smegma bacillus, the natural habitat of which is in and about the genital tract, would cause more difficulty in being mistaken for the germ of tuberculosis than would many of the other acid resisting bacilli that occur in the urine only on accidental contamination. For this reason we find that many observers are of the opinion that if the possibility of infection with the smegma bacillus is prevented all other germs which retain the red color after decolorization are the specific organisms of tuberculosis.

Bunge and Trautenroth (9) believed that if the genitals were carefully washed and the urine obtained by sterile catheter there would be no danger of contamination with the bacillus of smegma while on the other hand Bayard Holmes (10) reports that he found the latter germ in the pus of a pyelitis.

Cohnheim was the first to point out that the tubercle bacillus might be found in the urine without a lesion existing in the genitourinary tract, and A. von Fritsch (11) was also able to satisfy himself upon this point. It is to be remembered in connection with the first work upon this subject that in the early days when the organisms were searched for they were found with great difficulty and in very small numbers as centrifuges were not used and the urine was sedimented very slowly by standing in conical glasses. Strassburger (12) was the first to suggest a modification which would hasten the sedimentation. He found by adding an equal bulk of alcohol that the sediment was precipitated very much more readily. Many surgeons observed, and attention was called to the fact by Bryson (13), that, in disease of the kidney or bladder if the residual urine was used for examination the probability of finding the specific germ was greatly increased. Just about this time the centrifuge was introduced into medical laboratories by Thor-Steubeck (14) and strongly advocated by Albu (15) who popularized its use. By the use of the centrifuge the labor of finding the bacilli was greatly reduced as large quantities of urine could be precipitated in a short space of time and it became easy to find the organisms.

It was, however, soon learned that tuberculosis of other portions of the body than the kidney and bladder revealed the specific organism in the urine. Flick and Walsh (16) were among the first to call

attention to the frequency of tubercle bacilli in the urine in cases of pulmonary involvement apart from gross lesions of the genitourinary tract. Fournier and Beaufume (17) were able to find the bacillus in five out of twenty-five urines from patients suffering from pulmonary tuberculosis. Three cases were proved to have virulent specific bacilli by inoculation experiments while in the two remaining animals sepsis from the contaminating germs in the urine killed the pigs before they became tuberculous. Rosenberger (18) was also able to find the bacilli in five out of twenty-five tuberculous cases in which there was no clinical evidence of genitourinary infection.

Alexander (19) came to the conclusion that although it was more frequent to find bacilli in a patient whose genitourinary organs were the site of tuberculous infiltration it was by no means rare to find the germ without there being such involvement. This conclusion is justified by the results of the study of sixty cases of pulmonary tuberculosis by Flick and Walsh (16) who found in this number forty patients, in whose urine were acid fast bacilli which were alcohol fast.

In a study of the kidneys of one hundred patients coming to autopsy made by Walsh (20) tubercles were found but fifty-five times. In connection with the same study a series of inoculations were made which showed tubercle bacilli in the urine in 82.5 per cent. of the seventeen urines inoculated.

During the past year the writer has made a study of the sediment from two hundred and fifty urines of the tuberculous patients as to the presence of acid and alcohol resisting bacilli. Of this number eighty-two, or 32.8 per cent., revealed the presence of such bacilli. Of the eighty-two cases sixty were found to be advanced cases of tuberculosis, while twenty-two patients were capable of attending the dispensary and showed physical signs not indicative of a widespread involvement. Of the sixty bed patients whose urine showed tubercle bacilli, forty-four, or 73 per cent., showed also albumin, and forty-eight, or 80 per cent., casts. Of the twenty-two dispensary patients, twelve, or 54.5 per cent., showed albumin, while only nine, or 40 per cent., casts.

It is worth remarking that in all these examinations only the ordinary amount of urine (eight ounces) which is sent to the laboratory for routine examination was used. No special precautions were taken in collecting the urines except to see that they were in perfectly clean bottles supplied with clean corks. The entire eight ounces of urine were centrifuged in a water motor centrifuge and the collected sediment was again centrifuged in electric centrifuge. From this sediment smears were made and stained by the Pappenheim method. As a rule when the organisms were found they were present in fairly large numbers and their morphology and staining characteristics were not unlike the specific germ found in the sputum. Occasionally the bacilli seemed shorter than those ordinarily found in the sputum, and in one patient's urine I was able, by repeated examinations, to satisfy myself that the same peculiarity as to the morphology of the bacillus found in the urine was true of the bacillus found in the sputum.

It was found that there were several sources of error to be avoided in searching for the bacilli. The most important was to avoid mistaking a crystal in the urine which still retained the red of the carbol fuchsin for a bacillus, while the same warning held true for the periphery of epithelial cells and scratches upon the slides, which retain the stain and at times resemble the bacillus. The significance of the presence of such acid and alcohol resisting bacilli in the urine of tuberculous patients is worthy of very careful study. By many it is believed that the bacilli found in the urine are, in reality, dead bacilli, and if not dead, at least, much impaired in their virulence. The evidence for such belief is insufficient because many workers have proved that these germs are virulent by inoculation into susceptible animals. One great difficulty encountered in the inoculation experiments, in which the sediment from tuberculous urines is used for injection, is that the toxine or other bacteria contained in the urine are often sufficient to kill the animal. To overcome this difficulty the sediment must be thoroughly washed in sterile water until freed from the toxine and must then be heated for ten minutes to 60° C. to destroy the contaminating bacteria before the injection is made. The writer has had difficulty even after these precautions in keeping the animals alive long enough to have them show tuberculous lesions.

It would seem from what we know of the pathology of tuberculosis that in every advanced case, and probably in the early cases as well, there are likely to be tubercle bacilli in the blood at various times, but in the miliary form of the disease there must be large numbers present. Rosenberger's success in finding tubercle bacilli in one hundred per cent. of cases in the blood of tuberculous individuals and in a certain number of people who are apparently well has not, as yet, been duplicated by other observers. (Philadelphia Pathological Society, December 10, 1908.)

Auché and Chambrelent (20) were able to find twenty cases in which there had been placental transmission of the disease and in several of these no tuberculous disease of the placenta could be found. Weichselbaum (22) had previously shown that the blood of tuberculous patients occasionally revealed the specific organisms. Birch-Hirschfeld and Schmorl (23) recovered the bacilli from the blood of the umbilical vein of a fetus dying of tuberculosis whose mother was the victim of miliary tuberculosis. Jousset (24), at the International Congress of Tuberculosis in Paris in 1905, reported that he was able to demonstrate the bacilli in the blood of the acute and subacute forms of pulmonary tuberculosis, but in the chronic forms only exceptionally.

The writer has injected the ear vein of six rabbits with a solution containing virulent tubercle bacilli and after six weeks, when the animals were killed, found tubercle bacilli in the urine contained in the bladder at the time of death. In the kidneys of these rabbits there was no macroscopical evidence of tuberculosis, but, microscopically, three sections revealed tubercles.

It would seem probable that tubercle bacilli, like other organisms, are excreted by the kidney, even when no lesion exists that can be determined by the

methods at our command, as proved by Biedel and Kraus (25). It is also likely that the virulence of the organisms is unchanged by its passage through the arterial system and the genitourinary organs. That a dead organism would be eliminated with greater ease than a virulent one appears to me questionable.

If it is true, as the writer is inclined to believe, that in a large proportion of the cases of pulmonary tuberculosis virulent tubercle bacilli are being eliminated by the kidney, it is easily seen how great a problem is before those interested in the prevention of this disease in advocating suitable methods for the disinfection of the urine of all tuberculous patients. At the present time, despite all the attention paid to methods of prevention, the urine and fæces are seldom disinfected even in sanatoria and hospitals for the study and care of this particular disease.

Chantemesse and Widal (26) demonstrated that the tubercle bacillus was able to live from sixty to seventy days in sewage, while Galtur and Cedeac (27) confirmed their findings with regard to stagnant water and also proved that the germ was still virulent after being left in running water for forty-five days. Twitchell (28) found that the bacilli was virulent after two and one half months if kept in a moist state, but were destroyed in less than ten days if exposed to sunlight. It is to be remembered that connected with the question of infection by the germs in the urine is this transmission by insects. Spillman and Houshalter (29) found tubercle bacilli in the bodies and excrement of flies in large numbers, and without doubt other insects such as the cockroach, the bedbug, and the louse could act as hosts.

Many have questioned whether the presence of tubercle bacilli in drinking water as a result of contamination with infected sewage would prove a menace to the public health, believing that the gastric juices would destroy the bacilli. When we remember how difficult it is to destroy the bacillus by chemicals as well as by heat it hardly requires the confirmatory evidence of the work of Carrière (30) and Chauveau (31) and others (Gerlack, Klebs) to disprove such a surmise.

CONCLUSIONS.

1. Acid and alcohol fast bacilli are frequently present in the urine of tuberculous patients.
2. Such bacilli have been proved in many instances to be capable of producing tuberculosis in animals.
3. Until it is conclusively proved that these bacilli are not virulent it is wise to consider all of them virulent.
4. It is reasonable to believe that in tuberculosis tubercle bacilli are present, at times, in the blood of the individual.
5. Tubercle bacilli may be present in the urine without a macroscopical lesion of the genitourinary organs.
6. Although inoculation experiments are absolutely necessary to conclusively prove that a germ found in the urine is the specific bacillus of tuberculosis, nevertheless a bacillus that retains the carbol fuchsin stain after thorough decolorization with Pappenheim's solution is likely to be the tubercle bacillus.
7. Disinfection of the urine and fæces of tubercu-

nor is there any in rheumatism, and it is an acknowledged fact that one attack predisposes to subsequent attacks of these diseases.

It is thus easily discernible that any factor which may be considered a predisposing cause of one disease, may be considered a predisposing cause of the other, and within their limits they do not differ materially in importance which they bear in being aetiological factors of the one or the other disease. One factor does not play a more or less important part in the one than it does in the other, and nothing which can faithfully be applied as a predisposing cause in one can be applied to the other disease.

Morbid anatomy: There is no morbid anatomy in either disease, for no morbid changes occur in either which may be considered characteristic of that disease. It is important to note, the reason for which will be evident later, that arteriosclerosis may be present in both diseases.

Symptomatology: If we take into consideration the fact that these two diseases manifest themselves in tissues which differ widely from one another both physiologically and histologically, it can be easily concluded that the local and especially the constitutional symptoms of these diseases will differ. In the same manner that the manifestations of acknowledged rheumatic intoxications will differ according to the tissues or organs which it will affect as the symptoms of a rheumatic pleurisy and an attack of articular rheumatism differ, although the pleural cavity is often designated as a large joint, so the symptoms of an attack of migraine and that of articular rheumatism or any other manifestation of a rheumatic intoxication will differ. Pain is present in both, and as in rheumatism there is local redness, heat, and sweating, so in migraine the affected side will appear at a certain stage flushed, and feel warmer than the unaffected side, and moist from the presence of sweat. If we omit the various psychic and sensory symptoms, sometimes present in migraine, the reason for which I shall explain later, and if we consider migraine due to a very mild rheumatic intoxication, the constitutional symptoms of both diseases will not differ materially. Yet many attacks of other acknowledged rheumatic manifestations do not present more or less marked constitutional symptoms than those present in the usual attack of migraine. The various hallucinations and psychic disturbances which precede the true onset of an attack of migraine are more marked in this disease, due to the fact that the local site of the disease is in the brain, the seat of origin of all psychic and sensory impressions. The symptoms of the various manifestations of rheumatic intoxication are referred principally to the tissues or organs which are chiefly affected, whose functions are modified or disturbed accordingly. The constitutional symptoms are of secondary importance in determining a clinical diagnosis, i. e., in distinguishing them from the other diseases, with which they may be confounded. As in rheumatic pleurisy we have symptoms which are referred to the lung and pleural sac, as cough, dyspnoea, etc., so in migraine the sensory and psychic symptoms are more prominent. In rheumatism we have many nervous manifestations which take place, as hallucinations, delirium, etc., which are due to the direct action of the rheumatic

toxine present in the blood. The psychic, aural, visual, and other nervous symptoms of migraine may be explained along the same line of reasoning. Any stimulation of the special senses as a loud noise or bright light will aggravate the local symptoms of a migrainic attack, so in rheumatism exciting the activity of the joint by movement will aggravate the local symptoms of the disease. Acid perspiration is present in both diseases. The acidity of the stomach contents in both diseases is markedly increased.

As it has been conceded that trifacial neuralgia may be due to a rheumatic intoxication and occurs on one side of the head, so the cephalalgia of migraine most frequently occurs on one side, although it may be bilateral. In acute articular rheumatism the attacks occur in one or more joints of the extremities of the same side although as in migraine they may occur simultaneously on both sides. On careful inquiry the patients suffering from migrainic attacks will tell in the majority of cases of having had mild rheumatic symptoms or of having them at the time of the attacks of hemicrania. Frequently they will complain of having had only a slight pain in the muscles of the chest or of the arms and legs, saying that they must have "caught cold" in the muscles. It is important to note whether the patients were subject to frequent attacks of what is commonly called the "growing pains" of children or were subject to frequent acute inflammation of the tonsils or acute bronchitis. They may have had chorea, torticollis, or pleurisy, etc. Although these facts seem trivial at the outset and are often ignored by the attending physician in his history taking, yet they are very important in obtaining a definite history of the case.

The attacks of both diseases occur paroxysmally. Intervals of a few days to a few months may elapse before the onset of a subsequent attack of either of these diseases with which the individual may be afflicted.

Urine analysis: In both diseases we find the daily excretion of urine diminished in amount. It is dark in color. The specific gravity is high and it is loaded with urates. In fact it is a urine which is characteristic of every febrile disease.

Conclusion: If we glance over the numerous factors which have been advanced as being aetiological of migraine, it is evident that the question of the aetiology of this disease is far from settled, and it would have been far better to have called it an idiopathic disease, which is a synonym for ignorance, and yet is just as informant as are some of the theories advanced as direct aetiological factors.

Starr states that migraine is due to an intoxication, but considers it an autointoxication, the nature of the toxine not having been determined. Some contend that a migrainic attack may be due to digestive disturbances. But Wellsbaugh has practically proved that the cephalalgia following digestive disturbances or the ingestion of a particular article of food is not the same as that of hemicrania; and contends that the cephalalgia and the accompanying gastric disturbances of migraine are in all probability due to the same cause, which according to other investigators is uric acid or one of the incompletely oxidized end products of nitrogen metabolism.

Edward Liveing considers the attack to be "nerve storms," i. e., a form of periodic discharges from certain sensory centres in the brain, similar to those by which epilepsy is explained. Others consider it a vasomotor neurosis and bring forth as evidence the occasional presence of an arteriosclerosis of the affected side of a patient suffering from migraine, but arteriosclerosis also plays an important part in the morbid changes of rheumatism. Even if we admit all these theories to be correct, that there is an intoxication, or that there are periodic sensory discharges of the brain, or that there is a vasomotor neurosis, we are still ignorant as to the direct exciting cause of these nervous disturbances, advanced as explanations of migrainic attacks. Now, if we combine any of these theories with that of a rheumatic toxæmia, we have an exciting cause which will be an initiative for the various nervous phenomena by which these attacks are explained. Or if we wish we can combine all three, and this I believe is the most probable, namely: A rheumatic intoxication, a "brain storm," and a vasomotor neurosis; and we have a vasomotor disturbance, caused by an intoxication acting centrally on the brain and causing periodic discharges and thus indirectly acting on the vasomotor system. That the vasomotor disturbances are not due to the exciting cause acting on the vasomotor system primarily, but indirectly to disturbances of the sensory centres of the cortex of the brain, is easily comprehended by analyzing the various nervous symptoms present, as the aphasia which is frequently present as a premonitory symptom in a migrainic attack of the left side of the head. But what is the nature of this intoxication? From the foregoing statements it is not a difficult matter to conclude that we can affix our *q. e. d.* to the idea that the direct exciting cause is the same as that of rheumatism and that the symptoms are due to the direct action of the rheumatic toxine on the sensory centres of the cortex and indirectly on the vasomotor system. In an acute attack of rheumatism we have a toxine which acts as a vasomotor stimulant—we have the high tension pulse, throbbing headache, etc. In the latter stage of the disease, there is a depression of the vasomotor system. The same holds true of the direct ætiological factor of migraine, of whatever nature you may presume this factor to be. The premonitory symptoms were conclusively proved by some investigators to be due to a vasomotor stimulation and the subsequent symptoms of the true onset of the disease to a vasomotor depression.

Adenoids have been given credit for being ætiological of migrainic attacks. As time elapses it is becoming more generally recognized that a very frequent site and, according to some, the most frequent site for the entrance into the system of the rheumatic toxine are the tonsils and adenoids. But the adenoids or tonsils are not *per se* the cause of the hemicrania; it is their being the seat of rheumatic infection that brings them into prominence as ætiological factors; and the reported successes of relieving sufferers from the attacks of migraine by the removal of adenoid tissue are due to the removal of the source of the rheumatic infection. It is precisely for this reason that the tonsils and adenoids are removed to effect a cure for

chorea minor, another way by which a rheumatic intoxication often manifests itself. Thousands, nay, we may even say millions, of young folk have an excessive growth of adenoid tissue in the nasopharynx, yet very few, proportionately speaking, are sufferers from hemicrania. For only in this small number of individuals is the rheumatic toxine generated, and which toxine finds a convenient entrance into the system, through the excessive lymphatic tissue in the nasopharynx. Brunton refers to caries of the teeth as being ætiological of migraine, but can not carious teeth be good media for the culture of the rheumatic germ and in which the toxine may be generated and be a source of infection to the system? As in previous years, rheumatic fever was attributed to a uric acid intoxication, but now it is contended that it is due to a toxine generated by a specific germ, so also the theories of migraine that it is caused by a uric acid diathesis as referred to by Haig and others will ultimately be found to be fallacious, and when more of the nature of the rheumatic toxine will be known, it will then be admitted that the direct ætiological factor of migraine is one and the same as that of rheumatism.

Therapeutics: Briefly summarizing the various medicinal measures employed in the preventive treatment of migrainic attacks, it may be stated that the various coal tar products have been prescribed with more or less success. But these do not cure the disease, they relieve the patient temporarily or as long as these products are employed; the cephalalgia returning with their discontinuance. The deleterious effect of these drugs on the blood, even when prescribed with great care, is unquestionable and they should not constitute a prolonged course of treatment, as advocated by some writers. Cannabis indica, caffeine citrate, and ergot also have their advocates. The method with which marked success can be attained, is summarized in these few words: Treat your patient exactly as you would if he were suffering from any acknowledged rheumatic affection. Salicylic acid and its preparations stand pre-eminent, and when rightly employed are a most valuable remedy. A prolonged course of the acid or derivative preparations was always attended by marked beneficial results, in fact complete cures. As a routine treatment, the stock solution of the dispensary was dispensed which consists of fresh sodium salicylate. This was found to be more beneficial than the other preparations of sodium salicylate. To this may be added tincture of cannabis indica, but it was never found to be absolutely necessary. Favorable results also followed a prolonged course of average size doses of aspirin (acetylsalicylic acid) to which phenacetin and caffeine citrate may be added during an attack. Salophen (acetylparamidophenol salicylate) also proved efficient in a few cases, and is worthy of a trial. Salol and the other salicylate preparations were not tried enough to comment on their activity as medicinal agents in this disease. If anæmia is present, iron and arsenic are indicated. Small doses of the bichloride of mercury as an adjuvant to the ordinary Blaud's pill, were found very efficient as a hæmatomic in these cases. The eliminative organs of the system should receive considerable attention.

SOME OBSERVATIONS ON INFLAMMATION OF THE VERU MONTANUM.*

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In the *American Journal of Dermatology and Genitourinary Diseases*, Vol. XI, No. 11 (November, 1907), I called attention to diseases of the veru montanum in these words: "There are certain chronic cases in which examination of the posterior urethra with the urethroscope will show the presence of a very large and succulent veru montanum. The caput will be seen filling the urethra at this point. The actual cautery will serve well to reduce the swelling, but a quicker and better way is to remove the top of the hypertrophy with the sharp edge of the deep urethral tube. . . . Only a small portion will be removed, as the swollen caput will be pushed away from the cutting edge of the tube. It is remarkable how quickly this little operation will produce benefits in the patient suffering from a discharge from the deep urethra due to this cause and with a train of symptoms of sexual neurasthenia."

This paragraph was written after eight years' use of the deep urethroscope and the examination of many hundreds of urethras, but the very excellent results of the operation were first observed after the accidental removal of a portion of this body while withdrawing the curved urethroscope cannula from the deep urethra after an examination.

This occurred in June, 1900. The patient, age thirty-eight, contracted his first and only gonorrhoea eighteen months previously. He had received treatment at the hands of a very skillful surgeon, but without results. I treated him at first quite regularly but later intermittently for about a year, but still the shreds persisted. He had been leading a continent life and drank very little, never to excess. The accidental removal of a part of the veru montanum was followed by considerable bleeding and irritation, so much so that he was not again treated for eleven days. The discharge and other symptoms gradually disappeared. He has since married and is the father of several children, and his wife enjoys the best of health.

I have been unable to find very much in literature on the subject of diseases of the veru. The fact is that little attention has been paid to the organ. Even our books on anatomy and genitourinary diseases differ in their description of it, and some of the illustrations would have us believe that it looks like an oat grain lying on the floor of the deep urethra, while others give to it the appearance of a split pea. Some illustrations place it at the prostatomembranous junction, while others locate it at different parts of the prostatic urethra.

Inventions and discoveries of recent years have shown us that, in many instances, the anatomy of the dissecting room differs materially from that found in the living. This is particularly true as to the relations of the heart, the stomach, and the lungs, as shown by the x ray, and the urogenital tract as shown by the cystoscope and urethroscope.

The veru resembles very much an exposed glans clitoridis as it bobs up into the fenestrum of the long bent tube. There is possible a small ridge extending from it toward the bladder, but if so it is not possible to see it under ordinary conditions with the usual instruments. If the beak of the instrument is passed about one half inch beyond the veru urine will run or trickle into the tube, completely obscuring the view. This requires complete removal and reinsertion of the tube or removal of urine with the aspirator and cotton mop.

On the anterior surface near the top of the veru as it presents in the fenestrum can usually be seen the opening of the utricle, on the lower margin of which the ejaculatory ducts open. I have never seen the openings of these ducts, neither can I understand how they can be seen without the use of a megaloscope, as they are so small they will only take an instrument the size of a bristle. The mouth of the utricle is rather frequently seen apparently closed, with the secretion showing through very much resembling a salivary ranula. Pressure of the tube in its passage occasionally expresses this secretion which gathers at the window. It quickly solidifies and resembles slightly softened gum Arabic.

The veru montanum and its contents, the utricle and the ejaculatory ducts, are not a part of the prostate, but have a distinct wall of their own and lie outside of the true capsule of the prostate, and I am very much inclined to the belief that no matter which perineal operation is used in the removal of the prostate, unless the floor of the prostatic urethra is removed, the utricle and the ejaculatory ducts are seldom destroyed. The veru is evidently quite richly endowed with nerves both from the spinal and sympathetic systems, as reflex pain and sexual derangement would indicate.

Inflammation of the veru montanum is usually due to gonorrhoea affecting the deep urethra, and as probably ninety per cent of all patients suffering with gonorrhoea acquire an extension to the posterior urethra and many of them to the seminal vesicles and epididymes of necessity by way of the ejaculatory ducts, it is surprising that the veru should escape as often as it does.

From subjective symptoms as given by patients suffering from inflammation of the veru montanum it is impossible to differentiate a case from prostatitis or vesiculitis without a urethral examination. The most common symptom of which the patients complain of is pain in the anterior two inches of the urethra. This pain is of a stinging or burning character and leads the patient to believe that his trouble is located in the anterior rather than in the posterior urethra. In some cases a frequent desire to urinate is observed. To this is added a desire to evacuate another drop or two after the bladder has been emptied. In some cases there is marked tenesmus with the appearance of a little blood with the last drop of urine. A fullness or heaviness in the deep urethra which may be reflected to the rectum is a symptom frequently complained of by patients. Shreds are usually but not always present in the urine. The urine to-day may be full of shreds and tomorrow absolutely clear, and again in a few days

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full of shreds. Irritation of the sexual apparatus is usually marked. Continued erections without apparent cause, even while the patient is waiting for treatment, have been observed. Later, from prolonged irritation, the opposite train of symptoms appear—loss of desire for sexual indulgence, weak erections, premature or delayed ejaculation. With the occurrence of ejaculation the patient is often annoyed by sharp pain of varying degree in the deep urethra or reflected to the rectum or perinæum.

Examination of the prostate and vesicles may show them to be normal, but usually the prostate is somewhat enlarged. The vesicles may or may not be engorged.

For the examination of the deep urethra I have for ten years used the instrument made by K. Schall, of London. It is a sturdy little instrument, ruggedly built and capable of withstanding a good many falls, and still be always ready for use. The light is in the handle and is thrown into the tube by a prism, the lamps being ten volts and four candle power. This instrument is so constructed that air dilatation may be used for other work when required. The regular Leiter tubes are used on this instrument and the tube used for deep urethral work, usually number twenty-four French, is about 20 cm. long from shoulder to tip with a fenestrum 18 mm. long on the convex surface of the elbow. Only the floor of the deep urethra is seen with the bent tube, but this is no drawback, as it is seldom that the roof of the deep urethra is involved.

Water dilatation has been used in the exploration of the deep urethra, but with the instrument of Goldschmidt, of Berlin, I have had no experience.

In no case of acute inflammation of either the anterior or posterior urethra should the urethroscope be used.

The appearance of the veru as seen through the tube is a rather dark red elevated process about 3 mm. high and 2 mm. wide at its base. The utricle may be seen, but the openings of the ejaculatory ducts rarely. When inflamed the veru assumes quite a different shape. In some instances it is simply enlarged, being 5 mm. high, with a uniform width of 5 mm. or even larger. In other cases it will be enlarged in but one direction and leaning well to one side, resembling an inflamed uvula. In other cases it will assume a bicornate appearance. In others it may have a granular appearance. When inflamed it usually bleeds quite freely when touched with the cotton mop, but the pressure of the walls of the tube window tends to prevent hæmorrhage. Not infrequently we see an ulcer on the anterior surface of the veru. I have never seen a polyp in this part of the urethra.

In the paragraph quoted at the beginning of this paper I spoke of the removal of the veru with the sharpened edge of the tube. I believe this a good procedure in certain cases, but usually the same result can be secured through a slower process, by the use of strong solutions of silver nitrate. I might say here that never under any circumstances do I feel the need of the patented silver preparations. I have given each of them a fair trial from samples. Patients themselves seem to be very thoroughly educated in their use and also their names, thanks to some of our medical friends. The use of silver nitrate will be followed by results if

intelligently used. Solutions varying in strength from one to twenty per cent. are readily borne and are extremely useful when properly used in the various stages of these inflammations. With a solution of fifteen or twenty per cent. the swollen veru is promptly reduced in size. In some cases the surface seems to dry up and separate, similar to an eschar from the site of a burn, but leaves no deformity. This treatment should not be applied oftener than once in a week, but in the meantime installations of two per cent. solutions three or four days after each strong application hasten the result. These strong solutions are applied, of course, on cotton mops, and its action is limited to the part attacked, but in nearly all cases it is well to apply the same solution to the deep urethra anterior to the veru.

I do not wish to presume that in all diseases of the deep urethra the veru is involved, but in many instances inflammation of this small but important organ is the partial if not the sole cause of the patient's trouble, and I trust that this paper may lead others to investigate inflammation of the veru montanum.

800 KEENAN BUILDING.

AN ERROR IN DIAGNOSIS MAINTAINED BY MICROSCOPICAL EXAMINATION.

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Medicine, in her desires to become more and more an exact science, is becoming daily more and more complicated. However, until that exactitude is attained, it would seem that, contrary to our aims or efforts to render by laboratory researches our diagnoses more rapid and more certain, we commit errors quite pardonable, it is true, but which, if not always injurious, are nevertheless annoying to the patient and frequently delay a cure that could otherwise be rapidly obtained. In support of this fact an example has just been given me where a serious affection of the throat and of the whole organism was not recognized on account of the resemblance, or rather the nonresemblance, which exists microscopically between the *Spirochæta pallida* of Schaudinn and the spirillum of Vincent.

It concerns a young man, twenty-four years old, who last November had a sore throat which persisted a few months in spite of all local treatments and which was diagnosed "Vincent's angina."

The very competent physician and specialist who treated him had the secretions of the throat examined bacteriologically by a professional bacteriologist who found the spirilla of Vincent and declared that the case could not be one of syphilis, because the *spirochæta pallida* had one spiral more or less, the patient could not remember exactly which, although the preparations were shown him under the microscope.

As his general condition was bad, suffering particularly from persistent insomnia, anxious about his generalized polyadenitis and his throat giving him constant trouble, he came to Paris and consulted Dr. E. L. Gros, who referred him to me for his throat. I found in the latter a diffuse erythematous condition, the tonsils were very red and indurated, forming a compact mass adherent to the pillars of the fauces, and there was a very marked catarrhal condition, necessitating constant spitting, a symptom most distressing during meals. Furthermore, the voice was muffled and articulation heavy.

I saw the patient for the first time in February, three months therefore after the beginning of the sore throat. Naturally Dr. Gros and I thought of all the possibilities, glandular tuberculosis of pharyngeal origin, syphilis, etc. Dr. Gros had the analysis of the blood made, fearing the beginning of Hodgkin's disease. The result was: Anæmia, sixty per cent.; leucocytes, 11,300; red blood corpuscles, 4,460,000; polynuclears, sixty-eight per cent.; lymphocytes, 23.3 per cent.; mononuclears, seven per cent.; eosinophiles, 1.7 per cent.; mastzellen, 0; and hematoblasts, 0.

There was consequently a slight degree of anæmia as one observes in the beginning of syphilis and a slight increase of the leucocytes.

We kept the patient in observation for a few weeks, I swabbed his throat occasionally with silver and iodine preparations, and Dr. Gros gave him hyperdermic injections of cacodylates, when one day I noticed on his right wrist and forearm a very slight eruption which did not itch, of a vague copper tint, to which I drew Dr. Gros's attention, and together we decided to put him on a test mercurial treatment. Hypodermic injections of benzoate of mercury, 2 centigrammes, were given by Dr. Gros daily. The dose was changed shortly to 1 centigramme.

This treatment was followed by general and local improvement the insomnia disappeared after a few injections; the swelling of the glands, in about fifteen days, had considerably diminished, the throat was much less red and swollen, the tonsils had returned to about their normal size, the catarrh persisted but was very much less. In general, the patient was much more comfortable.

It was therefore evident that we had to deal with a case of syphilis and that what was taken three months previously for a Vincent's angina was in reality the initial lesion, very probably, a chancre of the tonsil.

The error in diagnosis is easy, for it is known how Vincent's angina, at its second period, resembles a chancre of the tonsil; it is on account of this resemblance that Vincent's angina has also been called "chancriform angina."

The diagnosis can therefore not be based on the local appearance of the lesion, nor on the appearance of the spirillum under the microscope, since a professional bacteriologist, consequently an expert, was mistaken. It would be necessary to obtain those organisms (protozoa or bacteria?) in pure culture and inoculate animals with them. That day may come, for certain protozoa have been successfully cultivated, such as the *Trypanosoma Levisii*, spirillum of ulcerative and gangrenous balanitis, as well as the *Leishmania Donovanii*, protozoa of the kala azar, or Assam epidemic fever. Recourse may also be had to the serodiagnosis of Wassermann which, however, is not always positive and is complicated in its execution.

Until laboratory researches have become more precise and more simple, the specific mercurial test treatment will continue as the touchstone and the most certain and rapid means of revealing a doubtful or latent syphilis, and in that respect we shall still be able to proclaim the value of the old adage: "Naturam morborum curationes ostendunt."

65 RUE DE MIROMESNIL.

AN INTERESTING CASE OF DOUBLE UTERUS.

By J. A. CAMPBELL, M. D.,
New York.

CASE.—Mrs. C. consulted me July 13th, for sterility. I made a digital examination which disclosed a small and apparently stenosed uterus. I sent her to the St. Elizabeth Hospital, where on the twenty-first of July, under an an-

æsthetic, with Dr. Claud Weir assisting me, I discovered a vertical and loose septum extending from below the meatus to the perineum and dividing equally the vagina into two parts. After dilating and packing the os, Dr. Weir was about to replace the speculum, but this time placed it to the left of the septum and then discovered an os unpacked and undilated, and in this way we discovered two normal uteri, each of equal length and each with its corresponding vaginal communication.

The woman has no interesting history, save that she has been married some years and was anxious to have children, and consulted me because of this. Menstruation had been normal and I inferred from the history of her case that it occurred from both organs simultaneously.

I have not told the patient of my discovery, as both uteri were stenosed. I judge fetation may occur in one or both and not likely at the same period—true superfetation.

323 WEST TWENTY-SECOND STREET.

Correspondence.

LETTER FROM LONDON.

The Belfast Meeting of the British Medical Association.—The Nursing Conference.—The New King's College Hospital.—The New Orthopaedic Hospital.—The Royal College of Surgeons.—The Edinburgh Chair of Surgery.

LONDON, July 27, 1900.

The annual meeting of the British Medical Association opened at Belfast on Friday, July 23d, and will be continued until the end of the week. The scientific business of the meeting does not begin until to-day, when Sir William Whitla, professor of materia medica and therapeutics in Queen's College, Belfast, will be inducted as president. The retiring president is Mr. Sinclair White, F. R. C. S., of Sheffield, who succeeded the late Mr. Simeon Snell. Yesterday the annual representative meeting held its session and discussed the treatment of school children. Resolutions were passed to the effect that in sparsely populated districts provision for treatment should be made at "recognized" surgeries of private practitioners, at the public expense, and that the work should be entrusted to private practitioners. The meeting determined by a vote of 108 to 8 in favor of this provision, and strong protests were entered against the recent action of the Education Committee of the London County Council in arranging with the boards of the metropolitan hospitals whereby a small number of children would receive treatment. It was further resolved that the members of the medical staff of hospitals should be appealed to to do all in their power to prevent such abuse of voluntary charities as this action would entail and to assist in guarding against this evil. The resolutions embodying these points are to be brought to the notice of the Education Committees of the London County Council and of some other local education authorities. The system of reorganizing contract practice on a scheme which has been put forward by the association under the name of the "Public Medical Service," and which has received favorable treatment in both the majority and the minority reports issued by the Royal Commission appointed to inquire into the poor law, was discussed briefly. It was resolved that a scheme be drafted to organize this service in such a way that all the existing dispensaries, medical services, friendly societies, and

¹Leishmaniosis, by A. Laveran, *Presse médicale*, April 10, 1900, p. 257. See also Pith in *The New York Medical Journal*, May 25, 1900, p. 1070.

clubs should be embraced. The meeting considered and agreed to a set of model rules for the better management of district nursing associations, which could be adopted by these associations in addition to the existing rules.

In the afternoon session several matters affecting the administration of hospitals and the practice of them were dealt with. It was decided that a medical certificate of suitability for hospital treatment be required as a condition of such treatment except in a case of casualty at its first attendance. It was further decided that no fresh public medical institution should be opened without previous consultation with the local medical profession through some organized body, such as the local division of the British Medical Association, and that the same body should appoint representatives to assist in the promotion and general management of hospitals and other medical charities. The meeting then adjourned until to-day, when every branch of medical science will be discussed at the meetings of the various sections. Altogether, there are over 800 delegates and a large number of visitors from the continent and America.

Another conference that is just now being held is the second quinquennial meeting of the International Council of Nurses, which is being attended by representatives of the nursing profession from all parts of the world. The proceedings were inaugurated by an address from the president, Mrs. Bedford Fenwick. It was decided that in future meetings should be held triennially, and the next meeting will accordingly be held in 1912 in Cologne. Among those who read papers were Miss Iola Stewart, matron of St. Bartholomew's Hospital, Mr. D'Arcy Power, and Dr. Rose, of the Education Department of the London County Council. The last spoke about the value of open air schools and medical inspection of school children. In connection with the conference a nursery exhibition has been opened at Caxton Hall and receptions have been held at St. Bartholomew's Hospital, at Dorchester House (the American Embassy), and at the Mansion House.

The foundation stone of the new King's College Hospital at Denmark Hill was laid by the King on July 20th. The hospital will stand on a site rising toward the south and overlooking Ruskin Park. The main elevation, 1,000 feet long, contains the administrative block in the centre, with the medical school to the west and the out-patient and casualty departments to the east. The ward pavilions, which will contain 600 beds, will be erected on the southern part of the site. The building was begun some time ago, and the casualty and out-patient departments are approaching completion. The out-patient department consists of a central hall, off which the consulting rooms open. His Majesty, accompanied by the Queen, was received by the Hon. W. F. Smith, M. P., chairman of the committee, and Mr. Charles Awdry, treasurer of the hospital, and among those present on the platform were the senior physician and senior surgeon to the hospital (Dr. Nestor Tirard and Sir William Watson Cheyne, Bart.). Mr. Smith, in presenting an address to the King, said that the site of the hospital comprised twelve acres, and that in addition some thirty acres had been acquired, partly by private liberality and

partly by public funds, for a people's park, so that the hospital would always have the advantage of an adjoining open space larger than that enjoyed by any similar institution in London. The Removal Fund now amounted to £229,000. The King in his reply said that King's College Hospital was specially and closely associated with the great work of Lord Lister, who, in introducing the antiseptic method in surgery, had rendered an inestimable benefit to all mankind. The decision to abandon the old building and to remove the hospital to a poorer and more populous district, where the need for a hospital was greater and the field for its work wider, was a bold and in His Majesty's opinion a wise and right step. He congratulated the medical staff on the great opportunity thus given for increased usefulness. Later in the week the King opened the new Orthopaedic Hospital in Great Portland Street. This is a large and sumptuous building which will replace the two existing smaller orthopaedic hospitals.

Mr. Henry T. Butlin, F. R. C. S., consulting surgeon to St. Bartholomew's Hospital, has been elected president of the Royal College of Surgeons of England by a unanimous vote. Besides his many years' service as surgeon and lecturer in surgery at St. Bartholomew's Hospital, Mr. Butlin has held many important authoritative positions in the medical world, having been president of both the Pathological and Laryngological Societies of London as well as dean of the Faculty of Medicine in the University of London and vice-president of the British Medical Association. The retiring president is Sir Henry Morris.

Mr. Alexis Thompson, assistant surgeon to the Royal Infirmary, Edinburgh, and lecturer in surgery in the School of Medicine, Edinburgh, was on July 21st appointed professor of surgery in the University of Edinburgh in succession to Professor John Chiene, C. B. There were five other candidates.

Therapeutical Notes.

Medicinal Measures in Measles.—*Folia Therapeutica* for July reproduces from Latham's *Dictionary of Medical Treatment* the following remarks on medicinal measures in measles:

Expectorants and purgatives should be used with care owing to the liability to catarrh so common to the disease. The mouth should be washed out two or three times a day. The eyes and also the nasopharynx should be washed with five per cent. boric acid solution to lessen the chance of complications. In addition the eyelids should be smeared with petrolatum. If conjunctivitis is marked iced cloths should be applied to the eyes. To diminish the chance of bronchopneumonia, the chest should be rubbed daily with oil and protected with flannel. If cough is a troublesome feature and bronchitis is not marked, codeine, 1/60 grain for a child one year old, and 1/8 grain for a child six years old, may be given, or Dover's powder, 1/4 grain to 3 grains, may be taken at night. The itching of the skin may be relieved by inunctions of petrolatum. If there is much restlessness or headache, acetphenetidin, 1 grain to

to grains, according to age, may be given occasionally. Irritating laryngitis is best met by the steam kettle and hot fomentations to the neck.

When there are high fever and marked nervous symptoms ice should be applied to the head. Cold sponging with water or equal parts of vinegar and water at 80° F. to 85° F. will allay nervous symptoms, but has not much effect on the temperature unless frequently repeated. A better method is to envelop the body in a sheet wrung out in warm water, 100° F., and then to rub the body through the sheet with ice. High fever with cyanosis, feeble pulse, and cold extremities requires a hot mustard bath, ice to the head, and free stimulation.

The Treatment of Intestinal Toxæmia.—Quintard is cited in *The Hospital* for June 5, 1909, as the author of the following method of treating hepatointestinal toxæmia. So far as drugs are concerned, the first object is to rid the system of accumulated poison. This is accomplished by flushing out the liver and the intestines. Apart from special treatment rendered necessary by definite gastrointestinal complications, it is Dr. Quintard's rule to give these patients three times a day before each of the principal meals ten grains of sodium glycerophosphate in a large glass of hot water, to be sipped slowly. This may be continued for many weeks. He also administers to these patients every other day for the first week a mercurial in the following form:

R Ext. nucis vomice, gr. ʒss;
 Masse hydrargyri, gr. v;
 Ext. colocynth. comp., gr. iij;
 Ext. rhei, gr. viij.

Misce et divide in capsula duas.

Sig.: Both capsules to be taken at night.

This is to be followed the next morning by a dose of citrate of magnesia or Rochelle salts, or phosphate of soda, or one of its various preparations. On the morning when such saline is given that morning's dose of sodium glycerophosphate is omitted. The second week the above mercurial is given twice, and during the third week only once.

It may be well to remark particularly that blue mass is far more efficacious in these cases than is calomel. The latter at times acts too violently and leaves the patients depressed, with feelings of nausea and chilly sensations that may last as long as 48 hours after the dose has been taken. Moreover, after calomel one is more liable to have such symptoms as breathlessness on exertion than after the use of blue mass. The course of treatment with blue mass and salines may have to be repeated. If there is a particular desire to give calomel it should be given in quite small doses—gr. ¼ to ½—either alone or with salol or sodium carbonate.

If there is any actual colitis or enterocolitis, or if constipation has existed for a long time, or if the toxæmia is severe and accompanied by intestinal flatulency, it is well to resort to high colonic lavage. The solutions commonly employed for this are either normal saline or else Carlsbad salts in water, a drachm or two drachms to the quart. The water should be fairly hot to avoid abdominal cramps.

The anæmia will need attention. After the first week or ten days, when the liver and intestine have

been flushed out to some extent, one may begin to give the blander preparations of iron. The pyrophosphate in one-grain doses in capsules or solution, or the peptomanganate, are good. No iron tonic should be given until the toxæmia is at least partly under control. Later, when an iron tonic treatment can be adopted with less reserve, the following prescription will be found serviceable:—

R Acidi arseniosi, gr. 1/30;
 Strychnina phosphatis, gr. 1/40;
 Ferri pyrophosphatis, gr. j.
 Misce et mitte in forma capsula.

Sig.: Take one capsule three times a day after meals.

Or as an alternative:—

R Strychnina glycerophosphatis, gr. 1/40;
 Ferri glycerophosphatis, gr. j.
 Mangan. glycerophosphatis, gr. ij.
 Misce et mitte in forma capsula.

Sig.: Take one capsule thrice daily after meals.

For the nervous manifestations in these cases, especially at the onset, there is nothing better than the combinations of bromides. Five grains each of ammonium, potassium, and sodium bromide given in plain water two or three times daily act better than any other sedative in these cases. When neurasthenia is a complication the preparations of valerian, especially zinc valerate in 1 or 2 grain doses three times a day, seem to act well. Strychnine and its various combinations may be given with advantage where the patients are in need of such a neuro-muscular stimulant and tonic, but if the patients are very nervous or if the toxæmia is severe strychnine should not be given at the start. The same may be said of arsenic and its various preparations.

Calcium Lactate in Cases of Defective Blood Coagulability.—Urticaria, chilblains, lymphatic headache, and the like are associated with a condition of defective blood coagulability, and it is generally recognized, according to *The Hospital* for June 5, 1909, that any lesion that can be included under the general term of serous hæmorrhage can often be greatly benefited by the oral administration of calcium salts. The preparations best adapted for this purpose are the chloride and the lactate, and of these the latter has the advantage that its organic radicle is readily oxidized in the system, with the result that the base remains more fully at the disposal of the organism than is the case with the chloride. It is important, however, that the lactate should be freshly prepared, since it decomposes when kept any length of time. For adults the dose is fifteen grains, flavored with one-half to one minim of tincture of capsicum, and made up to the ounce with chloroform water. The treatment should be continued for six weeks at a time, three doses being given daily about an hour before food. More than half the cases of chilblains so treated are rapidly cured, though a repetition of the course may be required the next winter. Other affections in which similar treatment has proved very beneficial are boils, headache of the lymphatic type, urticaria, face-flushings, acne rosacea, and perspiring hands and feet with offensive perspiration. If constipation should result from the use of the calcium, it may be corrected by giving a small dose of infusion of senna pods at bedtime.

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THE ORIGIN OF SURGICAL ANÆSTHESIA.

The Massachusetts General Hospital—which, by the way, will doubtless before many more months are over be celebrating its centenary—does well to observe "Ether Day," the 16th of October, the anniversary of the first surgical operation performed publicly upon a patient fully anesthetized. At the last of these observances a notable address was delivered by Dr. William H. Welch, of the Johns Hopkins University, Baltimore. The question of who was entitled to the credit of discovering anesthetization as we know it to-day has been discussed, and not always very temperately, for many years, and the recent publication of Dr. Welch's address in pamphlet form ought to go far toward doing away with what discord still remains in regard to the subject.

The ancients, as we are told, probably did accomplish something substantial in the way of partially anesthetizing persons with narcotic drugs, but their crude performances can hardly be said to have conduced to the introduction of modern anesthesia. In 1799 Sir Humphrey Davy, who had been experimenting with nitrous oxide, a gas discovered by Priestley, in 1776, published his *Researches, Chemical and Physical, Chiefly Concerning Nitrous Oxide and its Respiration*, in which he said: "As nitrous oxide in its extensive operation seems capable of

destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." It is amazing, as Dr. Welch remarks, that such a suggestion, from such a source, bore no practical fruit for more than forty years, when the unfortunate Horace Wells took it up, only to meet with final disappointment which seems not to have been attributable to any fault of his own.

Still more astonishing is it that Faraday's early announcement of the effects of inhaling the vapor of ether itself met with no immediate response. In 1818, says Dr. Welch, Faraday pointed out that the inhalation of the vapor of sulphuric ether produced intoxicating and stupefying effects similar to those of nitrous oxide, and in Pereira's *Materia Medica*, "a widely read and authoritative textbook in its day, first published in 1839-40, it is stated that 'if the air be too strongly impregnated with the ether, stupefaction ensues.'" This amount of knowledge concerning the action of ether must soon have become current among medical men, and in 1842 Dr. Crawford W. Long, of Jefferson, Ga., performed the first of a series of minor operations upon patients anesthetized with ether. We have no record to the effect that ether had previously been used with the express purpose of producing surgical anesthesia. Dr. Long was therefore, in a certain sense, the discoverer of anesthetization. But he did not lay his observations promptly before the world, and he was thus, to use Dr. Welch's words, "necessarily deprived of the larger honor which would have been his due had he not delayed publication of his experiments with ether."

But it was to Dr. William T. G. Morton, a dentist and medical student of Boston, that the establishment of the practice of surgical anesthesia was really due. The particular agent employed, ether, appears to have been suggested to him by Dr. Charles T. Jackson, an eminent chemist and geologist of the period, whose own experience seems to have added something to the knowledge handed down from Faraday and Pereira. Dr. Welch doubts if there will ever be entire agreement of opinion concerning the exact measure of Morton's indebtedness to Jackson; but, he says, if we assign to it all possible weight and remember that Davy had suggested the use of nitrous oxide for surgical anesthesia in 1799, and that enough was already known of the anesthetic properties of both ether and nitrous oxide to lead Long, in 1842, to apply the former, and Wells, in 1844, the latter to painless surgery with a considerable measure of success, it seems clear that "the chief glory belongs, not to Jackson's experiences of 1842 or his thought or suggestion, whatever these may have been, but to Mor-

ton's deed in demonstrating publicly and convincingly the applicability of anæsthetic inhalation to surgical purposes, and under such fortunate circumstances that the knowledge became, as quickly as it could be carried, the blessed possession of the whole world."

NEW ACTIVITIES IN LIFE INSURANCE.

If, some months ago, the great life insurance companies were lukewarm in their attitude toward Dr. Burnside Foster's plans for enabling them to effect an increase of longevity among their policy holders, it seems that the distinguished editor of the *St. Paul Medical Journal* need not look upon his visit to New York as barren of results, for it is not difficult to see in certain activities recently manifested by some of the companies the fruit of meditation upon just such suggestions as Dr. Foster laid before them.

One of the large companies, looking justly upon tuberculous disease as adding greatly to premature mortality, is endeavoring to establish a sanatorium for such of its insured as may have contracted tuberculous infection since they took out their policies. It is feared at present that there may be some legal impediment to the establishment of the sanatorium, but it is to be hoped that a way will be found to enable the company to carry out virtually such a design as it has in mind, for its consummation would apparently be sure to reduce the losses by death.

Another of the large companies, not limiting its attention to any one disease, has established a "health bureau" for the benefit of its policy holders and for the consequent enhancement of its own interests. It is announced that the bureau will issue "health bulletins" giving information as to the preservation of health, and further instruct its policy holders by means of correspondence with them as individuals, care being taken not to usurp the functions of the family physician. Furthermore, any insured person may be examined physically as often as once in two years, with a view to the detection of unsuspected disease in its incipient stages, when with a reasonable expectation of success measures to cure it or keep it within bounds may be undertaken—and all this without expense to the insured.

For many years the fire insurance companies have put forth analogous efforts to diminish the number and destructiveness of conflagrations. The flying wagons of the insurance patrol are daily to be seen on their errands to save material property from destruction or damage by fire, and the companies associate themselves in the effort to reduce the risk of conflagrations, seeking to diminish the elements of danger or, failing in that, to adjust rates with a proper regard for the degree of risk. If the life in-

surance companies have been somewhat tardy in taking action looking to similar business ends, it is reasonable to expect that they will now make up for past remissness.

TUBERCULOUS DISEASE AMONG NEGROES.

Surgeon C. P. Wertenbaker, of the United States Public Health and Marine Hospital Service, has started among the negroes of Georgia a movement which bids fair to become widespread and to be productive of great good. It is that of organizing and conducting the Colored Antituberculosis League. Being on detail to inspect the quarantine station at Savannah, Surgeon Wertenbaker, at the request of the president of the Georgia State College for Colored Youths, was directed by the surgeon general to give a lecture before a negro farmers' conference in Savannah. Tuberculous disease was the subject of his lecture, and it was delivered before a large audience consisting wholly of negroes, the faculty and students of the college, clergymen, physicians, farmers, and other persons of prominence among the colored inhabitants of Savannah and different parts of the State.

After the close of the lecture he broached a well conceived scheme for the formation and operation of the league. The suggestion seems to have been immediately and heartily adopted and acted upon. The organization was effected, and the president of the college was made president of the league. He appointed a committee to select a vice-president for each county in the State, and it was proposed that the vice-presidents proceed to organize branches of the league in the various negro churches of the several counties. Negroes, as is well known, are very amenable to church influences, and probably no more effective plan for enlisting the cooperation of the negro population could have been devised than that of turning to account each church organization as the nucleus of a branch league.

It is proposed that any colored person may become and continue a member of one of these branch leagues by the payment of annual dues to the amount of a dollar. He is to receive a certificate of membership, of attractive design, on the back of which is to be printed simple information as to the best means of preventing and controlling tuberculous disease, the idea being that the certificate will be carefully preserved, and consequently the directions printed on it be always available for reference and study. Any member who becomes affected with the disease is entitled to necessary pecuniary and other assistance from the league, and the funds are to be further used in providing for lectures and pub-

lications on tuberculous disease and for the establishment of dispensaries and sanatoria.

The movement seems to us admirable, especially as it provides means by which the negro will contribute to the care of the consumptives of his race, "which at present," says the reports (reprinted from the *Public Health Reports*), "he does not do to any great extent." He will also be contributing to the efficiency of the general struggle against tuberculous disease, and his own great susceptibility to the infection is an important element in its dissemination. It is to be expected that similar leagues will be formed in other States.

SENILITY AND THE THYROID GLAND.

While the ultimate nature of senile decay remains an unsolved mystery and the causes through which the changes of old age are evolved are still a matter of speculation, the anatomical picture of the various stages of the process are more or less familiar, and some of the factors which contribute to these changes, in some cases at least, are now recognized. A knowledge of these factors enables us to advise certain precautions which are of undoubted value as prophylactic measures. Rational rules of personal hygiene, proper care in illness and convalescence, etc., are familiar examples. On the other hand, a recognition of the anatomical changes of senility and the consequent disturbances in function makes it possible to meet the discomforts of the aged with a greater degree of intelligence and to prevent to a certain extent the development of other vicious conditions which are dependent upon the primary changes.

Among the changes which usually accompany senility, atrophy of the thyroid gland has long been known, but the clinical significance of this phenomenon has received but slight attention. Léopold-Lévi, in a candidate's thesis (*Journal de médecine de Paris*, No. 26, 1909), has submitted a suggestive study of the similarity between the symptoms dependent upon loss of function of the thyroid gland and those seen in senility. The wrinkled, dry skin, the subnormal temperature, the alopecia, thinning of the eyebrows, loss of the teeth, anorexia and constipation, the diurnal somnolence, the suppression of the menses and of the sexual function, the vague muscular pains, the enfeeblement of all the functions, and the tendency to various degenerations, particularly vascular degeneration, all these symptoms appear both in hypothyroidism and in senility. Indeed, Léopold-Lévi remarks that myxœdema might almost be termed "precocious senility."

These symptoms occurring in the aged are usually attributed to arteriosclerosis, but it is undoubtedly

true that they do occur in patients who present no other evidence of arterial disease. The author states that such symptoms may frequently be controlled by thyroid feeding. The administration of thyroid extract has been highly recommended, particularly by French writers, for a great variety of disorders, but the results reported have not been substantiated to any great degree in this country. It may be that the variations in the method of administration and in the preparation used are accountable for some of the discrepancies. In the condition under consideration, however, a judicious trial of thyroid extract would seem to be justified when the symptoms are controlled with difficulty. The discomforts which make the declining years of life a burden to so many are not infrequently exceedingly obstinate, and any suggestion which may alleviate these ills is most welcome. It should be remembered, however, that much harm may be done by using too large doses, and that any patient under thyroid treatment requires constant and careful watching.

THE PATHOGENESIS OF TYPHOID FEVER.

As a result of the bacteriological study of forty-six cases of typhoid fever, particularly during the stage of convalescence, Coleman and Buxton (*Journal of Medical Research*, July) suggest the following modification of their original theory of the pathogenesis of that disease, published in 1907: The lymphatic structures in the wall of the intestine furnish the point of entry of *Bacillus typhosus* into the tissues. The bacilli invade the general lymphatic system from these structures, and finally reach the spleen. They grow chiefly in the spleen, and relatively few of them are destroyed in that organ; but a limited number filter through it and enter the general circulation during the incubation period of the disease. When the organisms in the spleen have reached a certain number they pass copiously into the peripheral circulation, where they are destroyed, with the liberation of their endotoxines and the development of symptoms. The latter represent the reaction of the tissues of the host to these endotoxines.

As the disease advances, the growth of bacilli in the tissues is limited by the immunizing forces of the organism, provided these forces are of a sufficient degree of activity; the symptoms become less severe, and recovery follows. If, on the other hand, the immunizing forces are of insufficient degree, the growth of the organisms proceeds without hindrance, the symptoms increase in intensity, and death results. At the time that the temperature returns to normal the bacilli have almost if not quite disappeared from the blood, and convalescence pro-

ceeds normally. In those cases in which there is no complication, but an intermittent rise of temperature continues, it is probable that growth of the bacilli in the organs has not been completely checked and that a few organisms continue to enter the circulating blood. In other cases the spleen remains enlarged after the temperature returns to normal, and later a relapse occurs. This suggests that, although the growth of *Bacillus typhosus*, both in the spleen and in the other lymphatic structures, has been brought under temporary control, complete immunity has not been established, and later rapid multiplication occurs; bacilli are discharged into the blood and are destroyed, their endotoxins are liberated, and the symptoms of relapse appear. The late development of local suppurative lesions seems to indicate that an attack of typhoid fever does not confer local immunity.

News Items.

Changes of Address.—Dr. B. Sachs, to 135 Central Park West, New York.

Dr. William Lintz, to 907 St. Mark's Avenue, Brooklyn, N. Y.

Cancer Research.—It has been decided by the trustees of the fund of \$1,250,000, left by Henry Barnato to found a hospital in memory of his brother, Barney Barnato, and his cousin, Woolf Joel, to devote the money to building and endowing an institution for cancer patients in London.

The Richmond, Va., Health Department Issues Warning Against Typhoid.—A pamphlet for free distribution has been issued by the Health Department of Richmond, Va., containing a statement of certain precautions to be observed in cases of typhoid fever, and instructions for preventing the spread of the disease.

The McKeesport, Pa., Hospital has a new staff of resident physicians, as a result of the reorganization which took place there recently. The staff now consists of the following: Dr. C. M. Hammer, of Johnstown; Dr. C. G. Throckmorton, of Waynesburg; Dr. G. G. Fox, of Louisville, and Dr. H. L. Madden, of Philadelphia.

The U. S. Naval Medical Bulletin.—Copies of this quarterly may hereafter be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. Single numbers cost twenty-five cents, domestic postage prepaid, and thirty-one cents, foreign postage prepaid. Yearly subscriptions are \$1.00, domestic postage prepaid, and \$1.25, foreign postage prepaid.

A Site for the New South Shore Hospital has been purchased on the Hempstead-Freepoint Road, near Roosevelt, Long Island. Plans will be prepared and work on the new building started as soon as possible. The cost of the structure has not been determined, but it is said that there will be no lack of funds. The South Shore Hospital is now in a leased building in Freeport.

An Epidemic of Scarlet Fever at Braddock, Pa.—It is reported that an epidemic of scarlet fever exists at Braddock, Pa. Special measures are being taken by the Health Department to prevent the spread of the disease, and it is hoped that the outbreak will soon be under control. One of the results of the epidemic was the closing of the summer vacation schools two weeks earlier than was planned.

A Roof Garden at St. Agnes's Hospital, Philadelphia.—To give patients who are convalescent all the fresh air possible, the physicians of St. Agnes's Hospital have established on the roof of the hospital a large roof garden, which is well equipped with everything that is necessary for the comfort of the patients. As soon as patients are able to take the trip to the roof, they spend as much time as possible in the open air.

The Health of Pittsburgh.—During the week ending July 31, 1909, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Typhoid fever, 20 cases, 2 deaths; scarlet fever, 11 cases, 1 death; diphtheria, 7 cases, 0 deaths; measles, 5 cases, 0 deaths; whooping cough, 22 cases, 2 deaths; pulmonary tuberculosis, 39 cases, 10 deaths. The total deaths for the week numbered 166, in an estimated population of 572,000, corresponding to an annual death rate of 15.09 in a thousand of population.

Improvements at the City Hospital.—Plans have been filed for remodeling the top story of the City Hospital, Blackwell's Island, New York, and erecting an operating theatre with modern equipment. It will be lighted with a dome skylight, and will have annexed a surgeon's room, a workroom for nurses and an x ray room, together with several "recovery" rooms. New elevators will be built on either side of the operating theatre for the transportation of patients to and from the various wards. The projected improvement will cost about \$30,000.

The Psychological Congress, which met in Geneva, Switzerland, last week, will hold its next meeting in Boston in 1913. The following officers were elected: Honorary president, Professor William James, professor of philosophy in Harvard University; president, Professor James Mark Baldwin, professor of philosophy and psychology in Johns Hopkins University; vice-presidents, Professor Edward Bradford Titchener, Sage professor of psychology in Cornell University, and Professor James McKeen Cattell, professor of psychology in Columbia University.

A National Tuberculosis Hospital in New York State.—It is announced by the State Charities Aid Association that application has been made to the Health Commissioner by the Workmen's Circle, a national fraternal insurance organization, for permission to erect and maintain at Liberty, N. Y., a tuberculosis sanatorium. If permission is granted, immediate steps will be taken for the erection of the hospital, which will provide accommodations for about forty patients. The necessary funds for the construction and maintenance of the institution will be obtained by assessing the 27,000 members of the organization \$1.10 a year, resulting in a fund of \$29,700 a year. These members are scattered throughout twenty-eight States.

The Daniel Drake Memorial Association was organized in Cincinnati on August 7th. This association, which has for its object the collection and care of the archives of the profession in Cincinnati, was largely due to the appearance of Dr. Otto Juettnier's book, *Daniel Drake and His Followers*. The members of the association have expressed a wish to erect a monument to Daniel Drake, and will, as was done last May, decorate the graves of eminent physicians in and about Cincinnati. The officers of the association are: President, Dr. A. G. Kriedler; secretary, Dr. E. S. McKee; treasurer, Dr. A. G. Drury; historian, Dr. Otto Juettnier; custodian, Dr. H. W. Felter.

The Cincinnati Röntgen Ray Society.—A meeting of the medical men of Cincinnati who are interested in x ray work was held at the office of Dr. Harry K. Dunham on the evening of August 7th, and the Cincinnati Röntgen Society organized. The following are the charter members of the society: Dr. H. K. Dunham, Dr. Otto Juettnier, Dr. Sidney Lange, Dr. Marion Whitacre, Dr. Dudley Webb, Dr. Charles M. Paul, and Dr. Joseph W. Ricker. Dr. Webb was elected secretary, and a president will be chosen at each meeting to act for that particular meeting. The meetings of the society, which will be social as well as scientific in character, will be held at the residences or offices of its members.

Pennsylvania State Board of Health Warns Physicians.—Circulars are being sent out by the State Board of Health to all physicians in the State, calling their attention to the law which requires them to report to the proper officials all cases of communicable diseases, and stating the penalty imposed in case of neglect to conform to the law in that respect. The physicians are urged to cooperate with health officials in stamping out contagious diseases. The following come within the category of contagious diseases and must be placarded: Actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis, chickenpox, Asiatic cholera, diphtheria, epidemic dysentery, erysipelas, German measles, glanders, rabies, leprosy, malarial fever, measles, mumps, pneumonia, puerperal fever, relapsing fever, scarlet fever, smallpox, tetanus, trachoma, trichiniasis, tuberculosis, typhoid fever, typhus fever and whooping cough.

The Junior Sea Breeze.—A report just issued from this institution, which is a summer hospital for babies, situated at Sixty-fourth Street and East River, New York, shows about twice as many dispensary cases as during the corresponding period last year, while the total number of admissions to the hospital has been only about one-half the number for last year and the number of deaths has been very small. It is said that this is due largely to the work of the nurses who visit the homes of the poor, and send the babies to the dispensary before they are dangerously ill. The institution is maintained by Mr. John D. Rockefeller, through the New York Association for Improving the Condition of the Poor. Dr. D. S. Conley is house physician.

The Negro Antituberculosis League.—The plan proposed recently by the United States Public Health and Marine Hospital Service to organize an antituberculosis league among the negro population has met with a quick response. State leagues have already been formed in Georgia, Louisiana, Mississippi, North Carolina, and Virginia, and the movement has received the endorsement of the last conference of State and territorial boards of health. Branches of the State leagues are to be established in the various negro churches, and the membership certificates, issued to supporters of the movement, have printed on them information relative to the cause, prevention, and cure of tuberculosis. The movement is mainly a campaign of education, intended to check the spread of tuberculosis among the negroes.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 7, 1909.

	July 1-14	July 15-28	August 1-7
Tuberculosis, pulmonary	304	149	532
Deaths	20	20	13
Cases	204	207	13
Measles	200	200	200
Scarlet fever	20	20	20
Smallpox	20	20	20
Whooping cough	20	20	20
Diphtheria	20	20	20
Deaths	20	20	20
Cases	20	20	20
Cerebrospinal meningitis	20	20	20
Deaths	20	20	20
Cases	20	20	20

The Mortality of Chicago.—According to the Bulletin of the Chicago School of Sanitary Instruction the total number of deaths reported during the week ending July 31, 1909, was 507, as compared with 534 for the preceding week and 610 for the corresponding period in 1908. The annual death rate in a thousand population was 13.36 for the week; for the preceding week it was 12.52, and for the corresponding week in 1908 it was 14.08. The total infant mortality was 223; 146 under one year of age and 77 between one and five years of age. The deaths from important causes were as follows: Diphtheria, 6; scarlet fever, 5; measles, 5; whooping cough, 8; influenza, 3; typhoid fever, 4; diarrheal diseases, 145, of which number 129 were under two years of age; pneumonia, 41; pulmonary tuberculosis, 53; other forms of tuberculosis, 14; cancer, 32; nervous diseases, 17; heart diseases, 48; apoplexy, 10; Bright's disease, 32; suicides, 11; accidents, 25; manslaughter, 5; sunstroke, 2.

Personal.—Dr. John Guiteras has resigned as chief sanitary officer of Havana.

Dr. Robert F. Sheehan has been appointed professor of hygiene at the University of Buffalo to succeed Dr. Henry R. Hopkins, who has been made emeritus professor of hygiene.

Dr. Frank A. Kendall, of Saranac Lake, N. Y., has been appointed treasurer of the New York State Hospital for the Treatment of Incipient Tuberculosis at Raybrook, N. Y.

Dr. Warren W. Hilditch, university scholar in physiological chemistry, Yale University, has been appointed instructor in physiological chemistry in the Medical Department of Syracuse University.

Dr. G. Wilsie Robinson has been appointed superintendent of the New York City General Hospital.

Dr. Robert Wolcott, professor of anatomy in the University of Wisconsin, has been appointed acting dean of the institution. The appointment takes effect at once, and will continue until the Board of Regents is able to select a permanent dean.

Vital Statistics of New York.—During the week ending July 31, 1909, the total number of deaths from all causes reported to the Department of Health of the City of New York was 1,484, as compared with 1,410 for the corresponding period in 1908. The annual death rate in a thousand population was 16.66 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.95; the Bronx, 16.34; Brooklyn, 17.66; Queens, 20.45; Richmond, 25.42. The deaths from important causes were as follows: Contagious diseases, 61; malarial diseases, 1; whooping cough, 16; pulmonary tuberculosis, 146; cerebrospinal meningitis, 8; bronchitis, 9; diarrheal diseases, 355; diarrheal diseases, under five years of age, 333; pneumonia, 52; bronchopneumonia, 65; cancer, 73; heart diseases, 94; Bright's disease, 90; suicides, 15; homicides, 2; accidents, 75; sunstroke, 5. The total infant mortality was 688; 486 under one year of age; 116 between one and two years of age; and 86 between two and five years of age. There were 135 stillbirths.

Vital Statistics of New Jersey.—According to the monthly statement of mortality of the Board of Health and Bureau of Vital Statistics of the State of New Jersey, 2,666 deaths were reported to the Bureau of Vital Statistics during the month ending July 15, 1909. The deaths from important causes were as follows: Typhoid fever, 21; measles, 19; scarlet fever, 29; whooping cough, 25; diphtheria, 25; malarial fever, 1; tuberculosis of the lungs, 285; tuberculosis of other organs, 54; cancer, 128; cerebrospinal meningitis, 12; diseases of the nervous system, 333; diseases of the circulatory system, 310; diseases of the respiratory system (pneumonia and tuberculosis excepted), 132; pneumonia, 133; infantile diarrhoea, 152; diseases of the digestive system (infantile diarrhoea excepted), 155; Bright's disease, 184; suicide, 38. The usual increase in the number of deaths from infantile diarrhoea expected at this time of the year was below the average, the number for the month being 152, while in the corresponding period last year the total number was 202, and the average number for the preceding twelve months was 218. There was also a marked decrease in the number of deaths from measles, scarlet fever, diphtheria, cancer, cerebrospinal meningitis, and Bright's disease.

The Health of Philadelphia.—During the week ending July 31, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 34 cases, 4 deaths; malarial fever, 2 cases, 0 deaths; scarlet fever, 33 cases, 1 death; chickenpox, 4 cases, 0 deaths; diphtheria, 52 cases, 7 deaths; measles, 48 cases, 6 deaths; whooping cough, 21 cases, 6 deaths; tuberculosis of the lungs, 104 cases, 44 deaths; pneumonia, 8 cases, 14 deaths; erysipelas, 3 cases, 0 deaths; peripneumonia, 1 case, 2 deaths; mumps, 3 cases, 0 deaths; anthrax, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10 deaths; diarrhoea and enteritis, under two years of age, 113 deaths; cholera morbus, 1 death. The total deaths numbered 507 in an estimated population of 1,565,569, corresponding to an annual death rate of 16.83 in a thousand population. The total infant mortality was 201; 173 under one year of age, and 28 between one and two years of age. There were 23 stillbirths; 13 males and 10 females. There was no precipitation, and the temperatures were high. There were two deaths from heat and sunstroke.

The Metropolitan Life Insurance Company Not Permitted to Build Sanatorium.—The application of the Metropolitan Life Insurance Company for permission to acquire real estate for the purpose of erecting a hospital for its employees and selected policy holders afflicted with tuberculosis has been denied by the State superintendent of insurance. The denial was based upon Section 20 of the insurance law, which prohibits the purchase, holding, or conveyance of real estate by an insurance corporation transacting business in this State, save, among other purposes, "such as shall be requisite for its convenient accommodation in the transaction of its business." In concluding his memorandum Superintendent Hotchkiss comments as follows: "While appreciating the practical philanthropy behind the application, the possibilities which lurk therein of the assumption by insurance companies of many functions not strictly incident to their business suggest that the State may well move slowly in determining whether its creatures, particularly the numerous of such enormous financial power, should be permitted to step outside their legitimate field."

Physicians Wanted in the Indian Service.—The United States Civil Service Commission announces an examination on September 8, 1909, to secure eligibles from which to make certification to fill two vacancies in the position of physician (male) in the Indian Service at Nett Lake, Minnesota, and Volcan, California, at \$1,000 per annum, and other similar vacancies as they may occur in the Indian Service, unless it shall be decided in the interests of the service to fill the vacancy by reinstatement, transfer, or promotion. The examination will consist of the following subjects: Letter writing, anatomy and physiology, chemistry, materia medica and therapeutics, surgery and surgical pathology, general pathology and practice, bacteriology and hygiene, and obstetrics and gynecology. Seven hours will be allowed for the examination. The age limit is twenty-five to fifty-five years on the date of the examination, and men only will be admitted. In accordance with a recent act of congress an applicant for this examination will be required to be examined in the State or territory in which he resides and to show in his application that he has been actually domiciled in such State or territory for at least one year previous to the examination. This examination is open to all citizens of the United States who comply with the requirements. Applicants should apply at once to the United States Civil Service Commission, Washington, D. C., for application Form 1312.

Gifts and Bequests to Charity.—An endowment of \$5,000 has been received by the New Jersey Orthopaedic Hospital and Dispensary, Orange, N. J., from Mr. and Mrs. William A. Barstow.

By the will of Mrs. Celia L. Brett, of Hamilton, N. Y., the Faxon Hospital, Utica, N. Y., will receive \$5,000.

By the will of Mrs. Jane L. Gray, widow of Professor Gray, the botanist, the Cambridge, Mass., Hospital, will receive \$5,000 for the maintenance of a free bed.

By the will of Mrs. Elizabeth Sheldon, of Rensselaerville, N. Y., the German Deaconess Hospital, Buffalo, will receive \$5,000, and the Buffalo Home for the Friendless will receive \$1,000. Smaller bequests were made to the Rochester City Hospital and the Door of Hope.

By the will of Judge Solomon H. Bethea, of the Federal Court, the Dixon, Ill., Public Hospital will receive \$150,000. The conditions attached to the bequest were that the name of the hospital should be changed to the Katharine Shaw Bethea Hospital, and that the income from the money should be used for caring for the poor and needy patients of Dixon and Palmyra townships free of charge.

By the will of Matilda Lacey, the Lutheran Orphans' Home and Asylum for the Aged and Infirm, of Philadelphia, receives \$2,300.

The Committee on the Prevention of Tuberculosis of the State Charities Aid Association, New York, has received \$14,244.47 in tax rebates. It is said that this money will be used by the committee for a tuberculosis exhibit to be made in all the schools of the city.

The Mississippi Valley Medical Association.—The thirty-fifth annual meeting of this association, which will be held in St. Louis, Mo., on October 12th, 13th, and 14th, gives promise of being a great success. An unusually large attendance is expected, and the local committees, under the direction of Dr. Louis H. Behrens, are making elaborate preparations for the entertainment of the visitors. The scientific programme is being arranged, and already many papers have been promised by men who are authorities in the various branches of medicine. The oration in medicine will be delivered by Dr. Sherman G. Bonney, of Denver, and the oration in surgery by Dr. John B. Deaver, of Philadelphia. One morning of the meeting will be devoted to a "symposium" on exophthalmic goitre. There will be the usual scientific exhibit. The meeting follows "Centennial Week" at St. Louis, and the local committees have found it possible to have some of the attractions of that week continued for the benefit of those who attend the meeting of the association. All the sessions will be held in the Southern Hotel, which has been chosen as headquarters, and the exhibit will also be held there. For further information regarding the meeting write to the chairman of the Press and Publicity Committee, Dr. Thomas A. Hopkins, 300 Century Building, St. Louis, Mo. The officers of the association are: President, Dr. J. A. Witherspoon, of Nashville, Tenn.; first vice-president, Dr. Louis Frank, of Louisville, Ky.; second vice-president, Dr. Albert E. Sterne, of Indianapolis, Ind.; secretary, Dr. Henry Enos Tuley, of Louisville, Ky.; treasurer, Dr. S. C. Stanton, of Chicago, Ill.; Chairman of Committee on Arrangements, Dr. Louis Behrens, of St. Louis, Mo.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 29, 1909.

1. The Histological Classification of Tumors,
By F. B. MALLORY.
2. Injections of Sea Water in Skin Diseases,
By CHARLES J. WHITE.
3. A Study of the Psychoses Beginning in the Puerperal States,
By CHARLES RICKSHER.
4. The Education of the Child's Nervous System,
By A. C. EASTMAN.
5. Vestibular Nystagmus and its Relation to the Sound Perceiving Apparatus,
By HARRY F. BYRNES.
6. Isolation of the Bacillus of Typhoid Fever from the Breast Milk of a Woman Ill with the Disease,
By CHARLES H. LAWRENCE, JR.

2. **Injections of Sea Water in Skin Diseases.**—White reports fifteen such cases treated with isotonic sea water, and observes that this unusual therapeutic measure produces a certain amelioration of symptoms in widely various dermatoses. This improved condition is most conspicuous in tuberculous processes, especially in tuberculous ulcers. But as a whole, this therapeutic agent in our hands is a great disappointment, judged from the standard of Dr. Simon's results. Sea water can be injected in surprisingly large amounts, even into children, without causing much pain or other untoward symptoms. Injected into the buttocks it causes immediate desire to micturate, a continued easy and sometimes increased number of daily movements of the bowels, as a rule a slight tendency toward increase of bodily weight, and at times a distinct improvement in the well being of the recipient.

3. **A Study of the Psychoses Beginning in the Puerperal States.**—Ricksher remarks that there is no psychosis which can be strictly called a puerperal psychosis, but there is no doubt that the puerperal states can act as an exciting cause of a psychosis in certain women under certain conditions, which conditions are at present unknown. The mortality of children born of mothers who become insane during pregnancy is very great. The puerperal states may be exciting causes of attacks of manic depressive insanity in women who have never before been insane and in women who have had previous attacks of this disease. In women suffering from dementia præcox the puerperal states cause an exacerbation of the acute symptoms and cause the psychosis to become more active. Homicide is comparatively rare among women becoming insane during this period and is more liable to occur in patients suffering from dementia præcox than any other psychosis, while attempts at suicide are less numerous in these cases, but are more liable to occur in patients suffering from the depressed form of manic depressive insanity. Eclampsia and the toxic infections are not more frequent in women who become insane than in women who are normal mentally, and these factors are of little moment in any but the toxic deliria. Illegitimate children are not given as the cause of insanity as frequently in this country as in Europe. The reason for this is not determined. Comparatively few women who later became insane show abnormalities in pregnancy, and one cannot tell from the character of the pregnancy whether a woman will become insane after labor or during lactation.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 7, 1909.

1. A Brief Consideration of the Pulmonary Complications of One Thousand Laparotomies.

By JOHN C. MUNRO.

2. The Colon Tube and the High Enema.

By HORACE W. SOPER.

3. Otological and Rhinological Complications of Skull Fracture.

By CHARLES R. C. BORDEN.

4. Tuberculosis of the Larynx: The Type Which is Capable of Recovery or Arrest and the Principles of Treatment.

By W. E. CASSELLBERRY.

5. Enlargement of Nasal Sinuses in Young Children by Orthodontia. Results in a Number of Cases.

By E. A. BOGUE.

6. Conservative Surgery for the Treatment of Diseases of the Mandible.

By THOMAS L. GILMER.

7. Anæsthetics for Dental Surgery.

By L. G. NOEL.

8. Thirteen Thousand Administrations of Nitrous Oxide with Oxygen as an Anæsthetic.

By CHARLES K. TETER.

9. Hæmoptysis Due to Tuberculosis. A Preliminary Study.

By J. M. ANDERS.

1. A Brief Consideration of the Pulmonary Complications of One Thousand Laparotomies.—

Munro, in his chairman's address in the section in surgery of the American Medical Association, says that of one thousand laparotomies performed at the Carney Hospital by Dr. J. T. Bottomley and himself, thirty-nine per cent. (387) were for appendicular inflammation, 21 per cent. (209) for hernia, nineteen per cent. (188) for pelvic lesions, 10 per cent. (106) for diseases of the liver and pancreas, six per cent. (57) for lesions of the stomach and duodenum, three per cent. (36) for intestinal diseases, and two per cent. (17) are unclassified (omentum, spleen, retroperitoneal glands, etc.). Thirty-four patients exhibited signs and symptoms pointing to trouble in the respiratory organs, but of these all but eleven are excluded as not being postoperative pulmonary complications in the strict sense of the word. That is, two patients had pulmonary tuberculosis, one had asthma, eight had cough with pulmonary râles before operation, some of them exhibiting cardiac lesions as well. None of these gave any anxiety, the cough being merely a source of discomfort for a few days only. In four patients without preoperative signs or symptoms temporary cough without bronchial or pulmonary signs developed. One elderly man with broken cardiac compensation had slight œdema of the lungs; four patients with preexisting bronchitis had slight postoperative cough, and, finally, in one septic pelvic case with cardiac disease a cough developed from œdema, and two patients with bronchopneumonia were not made worse by operation. All of these can be excluded from the class of postoperative pulmonary complications. The cases that are of interest and which will bear closer analysis are those in which a bronchitis or a pneumonia developed out of a clear sky and in which examination before operation demonstrated no sign or symptom of a pathological lesion in the chest. There were five cases, four of simple bronchitis, and one of bronchopneumonia. That is, in one thousand laparotomies occurred eleven cases of postoperative pulmonary complications, four of which proved fatal, a mortality of 0.4 per cent. The contrast of this mortality with that reported from most of the active foreign clinics, a mortality ranging from three to five per cent. or over, leads the author to believe that possibly his routine methods

in preparation, etherization, and after care may be a factor of some moment. To obtain these results, the author says, ordinary rather than extraordinary precautions were used, precautions that can be used in any hospital. The operative field is cleaned with as little slopping as possible, on the operative table. The rest of the body is well protected throughout the operation, which is performed in a warm but not overheated room. The anæsthetic is pure ethyl chloride, followed by pure ether given in as small a quantity as possible by the drop method on open gauze. Morphine and atropine are given just before starting the anæsthetic. After operation, the patients are kept well protected from exposure, but not overburdened with blankets to avoid sweating. In practically all cases, except inguinal and femoral hernias, the patient is set upright in bed at once after operation or within a few hours, and the majority are out of bed in forty-eight hours and are given as liberal a diet as they can be persuaded to take. All are encouraged to move the body and extremities, and they are given water liberally to keep down thirst and to prevent the dirty dry mouth that comes with lack of moisture.

4. Tuberculosis of the Larynx.—Casselberry remarks that tuberculous hyperplasia in the larynx has not infrequently undergone resolution, in whole or in part. Unmistakable tuberculous ulcers have occasionally healed and remained healed. Favorable negative qualities have characterized in common the cases which have proved to be capable of arrest or recovery; for instance, the laryngeal hyperplasia has been less progressive, less diffused, and less prone to ulceration; the underlying pulmonary infection has been less extended; there were fewer tubercle bacilli, a lower pulse rate, and less emaciation. These qualities persisting, the patients who are capable at least of a hopeful resistance, can be distinguished, thus justifying every effort at any sacrifice to invoke the methods likely to arrest the disease and lead to recovery, including intralaryngeal surgery when the lesions in degree and kind are suitable for it. In like manner the nonresistant type should be recognized and those patients guarded from the privation and distress which surely follow in the wake of an indiscriminate exposure to the elements and to the hardships of travel in distant climes. In them surgery is contraindicated excepting to prevent air hunger and suffocation, or to prevent starvation by the removal of some particularly painful impediment in swallowing.

8. Thirteen Thousand Administrations of Nitrous Oxide with Oxygen as an Anæsthetic.—Teter reports thirteen thousand successful administrations of nitrous oxide and oxygen covering a period of nine years for practically every kind of an operation to its completion, under varying degrees of hazard, and varying in time from a few minutes to three hours, and remarks that of all that has been said in favor of nitrous oxide with oxygen as an anæsthetic, there is nothing more important or more in its favor than the freedom from nausea and vomiting. This freedom from nausea and vomiting will depend to a great extent on the evenness of narcosis produced, preparation of the patient for the anæsthetic, and purity of the gases. With a patient properly prepared and anæsthesia evenly maintained

with pure nitrous oxide and oxygen, nausea and vomiting will be a rare occurrence. In all his work he has had only five cases in which persistent vomiting was encountered, and in none of these did it last over six hours. As a rule patients who have been operated upon under nitrous oxide and oxygen anæsthesia get along better than when other general anæsthetics are used. They are less sick, can take nourishment quicker, have fewer complications, and in every way have a better chance for a speedy and complete recovery.

MEDICAL RECORD.

August 7, 1900.

1. Who Are the Unfit? By CHARLES E. WOODRUFF.
2. Tuberculosis of the Pericardium Cured by Incision and Drainage, By C. L. GIBSON.
3. The Ophthalmotuberculin Reaction, By JOHN R. HICKS.
4. Brain Tumor with Unusual Symptoms, By J. E. DALE.
5. Mumps vs. Tetanus; A Clinical Note, By DAVID I. MACHT.
6. The Unreliability of Measurements of Ancient Skulls, By A. L. BENEDICT.
7. Tabular Report of Cases of Cancer Treated with Trypsin, By WILLIAM SEAMAN BAINBRIDGE.
8. Ivy Poisoning, By ADDISON W. BAIRD.

1. **Who Are the Unfit?**—Woodruff says that there is one form of unfitness which is causing dreadful disability wholly unnoticed—unfitness to climate when there is a migration to a climate markedly different from the ancestral one. Physicians have been so much occupied with those who through infectious disease are unfit to struggle for existence, that they are inclined to overlook the curious states of exhaustion which unfit one for labor and drive the sufferer into vagrancy, crime, or pauperism, and it has therefore escaped notice that many of these cases are climatic and differ in no respects from the loss of energy following long residence in the tropics. As we are all far from our ancestral home it behooves us to study the failures among us, so that we can discover the causes and prevent similar disasters to our grandchildren, if the causes can be avoided. Unfavorable climatic factors are causing unfitness for survival in the types too far misplaced, and the process differs in no respect whatever from that found in all other species of migrated plants and animals. The unfittest for ultimate survival may be those which we formerly considered the best of our immigrants. The "worst" types from southern Europe may survive permanently for they are not so greatly out of adjustment, indeed, the climate selection may not differ at all from the ancestral one. They may hold a carnival of murder and crimes of violence, but if they survive in health and are self supporting and keep out of the poor house, they are the fittest for survival and the brainy, brawny, disappearing blond the unfittest. If, on the other hand, the blond finds the causes of the lack of efficiency and higher death rate and avoids them, he is just as fit for survival as any one else, and will prove it by surviving. But the present production of paupers, criminals, and nervous wrecks among them will continue as long as the medical profession scouts the idea that we are out of adjustment to this southern latitude—so vastly different from the cloudy ancestral home in northwestern Europe—and continues to sing the praises of the sunshine which causes the damage.

2. Tuberculosis of the Pericardium Cured by

Incision and Drainage.—Gibson reports such a case. The patient was a negro, twenty-six years of age, whose family history for tuberculosis was negative. Two months before admission to the hospital he had had a cough with slight expectoration, dyspnoea followed, and swelling of the feet. Five days after admission the pericardium was aspirated in fifth space, 4 inches to left of median line; 18 ounces of opaque, yellowish fluid were obtained. Before aspiration, heart dullness extended 5 inches to left in third space, 6½ inches to left in fifth space, 1½ inches to right in the third space, and 2 inches to right in fourth space. Area of cardiac dullness was greatly diminished by the aspiration. Blood pressure in early part of aspiration was 88 mm., subsequent to aspiration, 95 mm. The operation was an incision in the long axis of the left fifth cartilage, which with a bit of the rib was removed by rongeur forceps; more room seeming desirable and the patient's condition being satisfactory, the fourth cartilage was also removed. The exposure was admirable and made the subsequent steps simple and easy. Neither the presence of the pleura nor that legendary bugbear, the internal mammary artery, had to be considered. The greatly distended pericardium was seized between two Kocher clamps and a two finger incision gave issue to a great volume of pus; probably a quart; but as the pulse at the same time weakened perceptibly the flow was checked by blocking the exit in part, with appreciable good effect. The sac must have contained some three quarts. The pericardial edges were sutured to the soft parts and a rubber drainage tube passed into each lateral cul-de-sac. At the close of the operation the patient was in good condition, with improved quality of pulse. While remaining sick for some days the patient improved steadily. The drainage was profuse. The tubes were removed in a week; September 9, 1900, transferred back to the medical side. Wound entirely healed without sinus. Since the operation his general condition was poor, and he was readmitted to the hospital several times. He is now (May, 1900) an inmate of the tuberculosis ward, the presence of a tuberculous process in the lung being now manifest. Tubercle bacilli were not found till recently, notwithstanding almost daily examination of the sputum.

BRITISH MEDICAL JOURNAL.

July 24, 1900.

1. Treatment of Disease, By WILLIAM OSLER.
2. Hercules and the Wagoner, with Remarks on the British Medical Association, By D. J. WILLIAMS.
3. Report of a Case of Œsophageal Diverticulum, with some Remarks on that Condition, By WILLIAM TAYLOR.
4. Remarks on Common Type of Sore Throat, By A. STANLEY GREEN.
5. On the Wassermann Reaction in General Paralysis of the Insane, By J. HENDERSON SMITH and J. P. CANDLER.
6. Pneumonia Migrans Involving the Whole of Both Lungs, followed by Empyema; Recovery, By JAMES BANNERMAN.
7. The Causes of Obstruction Producing Cyanosis during the Nasal Administration of Nitrous Oxide, By F. J. BERRY.
8. The Treatment of Some Chronic Inflammations of the Eye, By C. G. RUSS WOOD.
9. Hydatid Disease; Recurrence; External Rupture; Recovery, By ARTHUR W. BAIRD.
10. Intraabdominal Hæmorrhage Associated with Labor, By MAURICE C. BARBER.

3. **Cesophageal Diverticulum.**—Taylor says that aetiologically there are two varieties of diverticula—traction and pressure diverticula. In the former the wall of the cesophagus is pulled outward by the contraction of fibrous tissue formed in connection with some old standing inflammation in a neighboring structure to which the cesophagus had become adherent. Most traction diverticula are small and situated on the anterior aspect of the cesophagus, though they have also been observed on the posterior wall. They do not, as a rule, produce symptoms, because the apex of the diverticulum is at a higher level than the opening, so that food either does not enter the diverticulum at all or does not stay in it. Such a condition is said, however, to favor the development of carcinoma. Pressure diverticula are produced, as the term implies, by pressure, and the mouth of the diverticulum is at a higher level than the sacculus itself; consequently food enters the pouch, and the tendency is for the diverticulum, having once formed, to continue to increase in size. They are situated at the posterior or posterolateral aspect of the cesophagus at its junction with the pharynx. Their production is said to be favored by the physiological narrowing which exists at the level of the pharyngeal constrictor and the gap said to exist at that point in the longitudinal muscular layer. The diagnosis can generally be readily made from the history. Examination with x rays by the screen while giving food containing some salt of bismuth, particularly a heavy salt such as the oxide, will confirm the diagnosis. An x ray photograph taken when the pouch is full of the bismuth food will be a permanent record of the situation and extent of the pouch. The cesophagoscope will also confirm the diagnosis as well as show the position and size of the diverticulum. Without operation the prognosis is bad. The condition gradually gets worse, until death takes place from inanition or until decomposition leads to suppuration and abscess, mediastinitis, or septic pneumonia. The condition may, it is said, lead to the development of cancer, the pouch itself becoming cancerous. The correct treatment consists in the complete removal of the pouch. This operation does not tax the patient's strength or vital powers unduly, is simple to perform, and the results are eminently satisfactory. Old age does not seem to be any bar to the success of the operation. The mouth and teeth should be attended to before the operation, and the pouch itself should be empty. If the breath is fetid the probability is that decomposition is taking place in the pouch. It should therefore be washed out with some nonpoisonous antiseptic or disinfectant. The incision should extend from the hyoid bone to the sternum, on whichever side the pouch is situated, and along the anterior border of the sternomastoid muscle. The anterior belly of the omohyoid muscle and the superior thyroid vessels must be divided. The lateral lobe of the thyroid gland may require displacement. The pouch can then be easily seen and withdrawn, for unless decomposition has led to inflammation, it is not adherent. The continual movements of the cesophagus during deglutition prevent adhesions. On drawing the pouch out of the wound a bougie should be passed to ensure the absence of stricture, and to indicate accurately

the position to which the clamp may be applied so as not to encroach too much upon the cesophagus. Risk of infection of the neck will be minimized, if not abolished, by having the pouch emptied and by cutting between clamps. The loose tissue at the root of the neck should be disturbed as little as possible, otherwise infection of the neck, if it supervened, would readily extend to the mediastinum and cause death.

7. **The Causes of Obstruction Producing Cyanosis during the Nasal Administration of Nitrous Oxide.**—Trewby has observed some thousands of nitrous oxide administrations and states that cyanosis in ordinary cases is merely mechanical, being mainly due to the size and shape of the palate and tongue. Whether nitrous oxide is given by the nasal or ordinary method, the fact remains that the oropharyngeal aperture is always obliterated before the nasopharyngeal aperture is in any way affected, and the breathing gradually tends to become nasal. This can be easily demonstrated; if nitrous oxide is given by the face piece method, when one is near the end of the administration the face piece is still kept on, and at the same time the nose is compressed, unless the palate is of the short variety, it gives rise to obstruction to expiration. Besides the condition of the fauces causing obstruction and giving rise to cyanosis, cyanosis in itself gives rise to obstruction of free breathing in the later stages, the swelling and falling back of the tongue giving rise to false stertor; he has noticed that this trouble occurs to a marked degree in patients with receding chins. Cyanosis causes distension of the large veins of the neck; and, as is well known, a collar or piece of tape, which was quite loose at the beginning is, if the administration is pushed until the patient jactitates, found to be pressing tightly round the neck, the measurement of the neck having increased $\frac{1}{4}$ in. in circumference. This is clearly due to distention of the superficial veins of the neck, as it is not likely that a structure like the cervical fascia can stretch much. In cases of oedema or suppuration beneath the deep cervical fascia, one is struck by the severe dyspnoea that occurs from pressure beneath this structure without any apparent general swelling of the neck. If the superficial veins external to the cervical fascia are compared with the deep veins of the neck, one realizes what the pressure in these huge veins must be, on the soft tissue, beneath a fixed structure like the cervical fascia. The parts likely to be affected are the laryngeal opening, which may get pressed back against the wall of the pharynx, and the space just above the larynx, where the tissue is extremely vascular, and it is quite easy to imagine how, with the increased tension within the cervical fascia occurring in asphyxia, the air way here may be completely obliterated.

THE LANCET

July 21, 1909.

1. The Desirability of Early Operation in Acute Cases of Appendicitis, together with an Analysis of 190 such Cases operated on at St. George's Hospital.
By G. R. TURNER.
2. Modern Progress in our Knowledge of the Pathology of General Paralysis.
By ERNEST JONES.

3. The Intramuscular Treatment of Syphilis, with Special Reference to the Insoluble Preparations of Mercury; a Critical Review, By GEORGE PERNET.
4. An Investigation into the Action and Uses of Fibrolysin in Middle Ear Deafness, By J. GAY FRENCH.
5. The Fate of Damaged Joints; a Study of Cases of Injury, principally Fractures, involving Joints Treated in the Massage Department of the London Hospital. By RICHARD WARREN.
6. "Painful Heels," By E. REGINALD MORTON.
7. Purpura Hæmorrhagica, with Abdominal Crises due to Intestinal Effusion, By G. PERCIVAL MILLS.
8. Note on the Treatment by Radium of Lymphatic Obstruction (Cervical, Submaxillary, and Axillary) in a Patient Suffering from Filaria Nocturna, By A. A. WARREN.
9. District Medical Officers and the Report of the Royal Commission on the Poor-Laws, By GREENWOOD.

1. **Early Operations in Acute Appendicular Inflammation.**—Turner is in favor of early operations in acute appendicular inflammation. The mortality of such early operations, although done during the attacks, should not be, and will not be much, if at all, greater than those done between attacks; he attributes the present mortality of operations during attacks almost entirely to delay, and against that delay he wishes to protest.

3. **Intramuscular Treatment of Syphilis.**—Pernet states that he has only employed the intramuscular injections of insoluble preparations in his private practice. He has never seen any complications arise. His results have been very satisfactory, and he considers the method a most valuable one, especially when any serious syphilitic complication threatens. His experience of the early abortive intense treatment has been from the nature of private practice very limited, and he has not felt justified in applying it to its full extent. But where full control of the patient could be obtained he has found no ill effects ensue after ten or twelve consecutive weekly injections of doses varying from seven to ten centigrammes. Indeed, the results have been in a few instances of this kind very encouraging. The author then takes up calomel, and says that in serious manifestations of syphilis, of the brain, eye, and so forth, calomel is a sheet anchor. Leredde, Babinski, and other observers have shown its value in syphilitic affections of the nerves. Darier, in speaking of threatening specific cerebral arteritis, is very categorical on the point, and rightly so. He advises the immediate injection of ten centigrammes of calomel in the case of men, and five to seven centigrammes in the case of women, continuing them every fifth or eighth day, but when the mouth is in bad condition a daily injection of a soluble preparation (biniodide, benzoate, cyanide) is to be preferred. In the initial manifestations of early syphilitic hemiplegia the use of calomel may make all the difference in the future of a young man. With regard to the parts of the buttocks where the injections are to be made he has come to the conclusion that an area around a point midway between the gluteal cleft and the anterior superior iliac spine is the most useful. Lévy-Bing has gone into the matter by means of actual dissections and gives the following directions. Through the middle of a line joining the gluteal cleft and the anterior superior iliac spine he drops a perpendicular, and describes a circle with its centre at the point of intersection and with a radius of three centimetres. In each of the quadrants thus formed he makes an injection. There are

also other suitable positions, but the point is to keep to the upper parts of the buttocks well away from the danger zone of vessels and nerves, which can be readily ascertained by a reference to anatomical plates or to bodies in the dissecting room. The following is the *modus operandi*. The injections should be made with the patient lying on a couch in the prone position. The part of the buttock selected must be thoroughly sterilized (soap, etheral soap, alcohol, ether, and so forth). The sterilized needle is then attached to the nozzle of the empty sterilized syringe and plunged perpendicularly and rapidly through the skin into the subjacent muscle. The piston is gently drawn up two or three times in the barrel in order to make sure that the point of the needle has not penetrated a vessel. If any blood appears the needle may be either withdrawn a little and the test repeated or withdrawn altogether and another spot selected. It is important not to inject an oily preparation into the lumen of a vessel. The barrel is then detached from the needle, which is left in place. The *huile grise* or calomel is then drawn up into the barrel directly from the *flacon*, an easy matter with Edmond Fournier's small calibre syringe. The mercurial preparations should be slightly warmed, not heated, and well shaken up before charging the barrel. The dose required, five, six, or more centigrammes, as the case may be, is then drawn up into the barrel, which is reattached to the needle, and if no blood has appeared at the mount of the needle the dose is slowly but firmly pushed home in the muscle. Duhot recommended that after this has been done some air or a little sterilized saline solution should be drawn up into the barrel, detached for a second time for that purpose, and in its turn pushed home in order to clear the needle of any preparation remaining on it, and thus avoid leaving a track of gray oil when the needle is withdrawn. Tracks of this kind may lead to small superficial furuncles. There is no need to massage the part, as is sometimes recommended. The orifice is covered with a small piece of zinc oxide plaster or collodion and wool. A careful record should be kept of the quantity injected at each sitting and the point injected. In the case of these insoluble preparations one injection a week is the rule. The injections should be made in the right and left buttock alternately. In every case, and especially when the insoluble preparations are employed, the patient should be previously thoroughly overhauled as regards the state of his mouth, the condition of the urine as to albumin, etc., his weight estimated, and so forth. Any defect in the teeth must be put right by a dental surgeon, before starting the treatment. This is an essential point, and may mean everything as regards the future course of the treatment. During treatment the urine must be watched, as also the state of the gums and buccal mucous membranes, by examination with the frontal mirror and reflected light, in order that any warning may bid you to stop the injections.

4. **Fibrolysin in Middle Ear Deafness.**—French reports fifty-two such cases of deafness and tinnitus, treated with fibrolysin, a combination of two molecules of thiosinamine with one of sodium salicylate.

The injections of a fifteen per cent aqueous solution are given twice a week. The hearing improved and noises diminished in sixteen (noises quite ceased in five of these); hearing improved, but noises not diminished in seven; noises diminished, but no improvement in hearing in fourteen (in four of these the noises had quite ceased), and no improvement in hearing and no diminution of noises in fifteen. In the sixteen cases of deafness without tinnitus, ten showed improvement to the various tests. From the results obtained it would appear that this method of treatment was more successful in the nonsuppurative than in the postsuppurative cases; but while this was so in regard to the percentage of cases showing improvement in hearing and diminution in tinnitus, yet when taken from the point of view of the amount of improvement produced the postsuppurative cases gave far better results; and he arrives at the conclusion that the fibrolysin treatment is by far the best treatment in this class of cases—the earlier the case is treated after cessation of the discharge and formation of the scar tissue the better the prognosis.

LA PRESSE MEDICALE.

June 5, 1909.

1. Sudden Death in General Paralysis.
By JACQUES ROUBINOVITCH and HENRI PAILLARD.
2. A Rapid Procedure of Intestinal Suture. The Alternating Suture.
By H. CHAPUT.

1. **Sudden Death in General Paralysis.**—Roubinovitch and Paillard have found in the hospital to which they are attached, that sudden death occurred ten times among 238 paralytics since 1901, adding to this report the reports of three other physicians the total is twenty-five sudden deaths among 538 paralytics, or 4.6 per cent. The conditions in which sudden death appears are, according to the authors, many and not well defined.

2. **Alternating Suture.**—Chaput describes his "alternating suture." With a straight, fine, and long needle he perforates each loop alternately without withdrawing the needle. When each loop has thus been pierced three or four times the needle is threaded. He then withdraws the needle and the thread is knotted at each end. With three perforations of the needle he has thus made a suture which would otherwise take a dozen piercings of the needle.

June 9, 1909.

1. Alexis Carrel's Experiences on Suturing Vessels of Transplanted Organs.
By Pozzi.
2. Diagnosis of Facial Neuralgia.
By F. LEVY.

1. **Suturing Vessels of Transplanted Organs.**—Pozzi reviews the work of Carrel, of the Rockefeller Institute of New York, who sutured the leg of dog, killed shortly before, to another dog of the same size, whose leg had been amputated below the knee. The remaining tibia was united to the tibia of the leg with the help of an aluminum splint, and the muscles, nerves, and vessels of the leg were carefully sutured to the corresponding muscles, nerves, and vessels of the dog. Healing followed by first intention, the circulation was perfect, the union of the bone took place. The dog died twenty days after operation during an epidemic of bronchopneumonia. The autopsy showed that union was perfect.

June 12, 1909.

1. Early Total Resection of Superficial Varicose Veins of the Lower Extremity.
By P. ALGLAVE.
2. Experimental Typhoid Fever,
By J. MILHIT and E. CHABROL.

1. **Resection of Varicose Veins.**—Alglave remarks that the spontaneous healing of varicose veins, especially the superficial ones of the lower extremity, is a rare occurrence, the progressive enlargement is usually the rule, leading to very grave complications, such as hæmorrhage, embolism, phlebitis, ulcers, etc. It is necessary to operate upon these patients as soon as the condition appears when the pain warns the patient of complications. The total resection which is possible at this time is an easy operation without danger, and gives immediate good results. He reports three cases in which he removed the superficial saphenous vein with as many branches as possible.

June 16, 1909.

Oospores, By H. ROGERS.
Oospores.—Rogers remarks that the affections produced by the oospores are as frequent in herbivorous animals as in men, consisting sometimes of simple suppurations, and sometimes are tuberculous-like. The analogy between actinomycosis and tuberculosis is clinically well known; and our author gives a review of our knowledge of the acid fast bacilli.

LA SEMAINE MEDICALE.

June 9, 1909.

Subhepatic Peritonitis in its Relation to the Pathogenesis of Hernia,
By RAYMOND TRIPIER and J. PAVIOT.

Subhepatic Peritonitis and Hernia.—Tripier and Paviot call attention to the influence which subhepatic adhesive peritonitis exerts upon the formation of hernia, and advise careful observations in such patients.

June 16, 1909.

The Symptomatic Importance of Sensory Disturbances Resulting in Lesions of the Brain,

BERLINER KLINISCHE WOCHENSCHRIFT.

June 21, 1909.

1. Psychology and Medicine,
By DUBOIS.
2. Organic Hemiplegia of a Young Girl after Psychic Trauma,
By E. FRANK.
3. Diagnosis of Initial Tabes,
By KANN.
4. Infection with Scarlet Fever from Patients who Had Been Discharged as Cured,
By KORNEL FREISCH.
5. Favorable Influence of the Active Elements of the Thyroid Gland upon Experimental Tuberculous and Pseudotuberculous Infections,
By C. FRUGONI and G. GRIXONI.
6. Benign Invasion of Chorion Epithelium into the Mucous Membrane and Muscular Tissue of the Normal Uterus,
By ROBERT MEYER.
7. The Breaking off and Metastasis of Intestinal Derivatives,
By LANDOIS.
8. What should the House Physician Know of Disturbances of Speech?
By H. E. KNOPP.
9. The Demonstration of Microparasites in Secretions and Excretions by Means of the Antiformin Method,
By O. THILENIUS.
10. The Biological Diagnosis of Carcinoma, with Especial Reference to Carcinoma of the Stomach,
By JOHANNES WITTE.

1. **Psychology and Medicine.**—Dubois at the close of a philosophical essay declares that in psychopathic troubles psychology is necessary to effect a cure, because there is no other known means to ef-

fect a change in the ideas. Three principal qualities are necessary to the physician: Great sympathy, perfect sincerity, and a gift of quick persuasion. In this way many psychopathic patients may be cured.

2. Hemiplegia after Psychic Trauma.—Frank describes in detail the clinical history of a young woman, twenty-six years of age, in whom a paralysis of the left side developed, which presented all the symptoms of an organic nature situated in the pons, eight days after a very severe fright. He believes that a hæmorrhage occurred in the pons rather than that the hemiplegia was a manifestation of hysteria.

4. Infection with Scarlet Fever from Cured Patients.—Preisich calls attention to the fact that after desquamation has been completed and the patient has been discharged as cured cases have been reported as having communicated the disease six weeks or more later. It is a question whether the virus may not be contained in the secretions of the throat and nose, in pus from the ear, in the secretions of the kidney, or in other secretions or excretions. If this is the case we have no means to-day by which to ascertain when the person recovered from scarlet fever ceases to be infectious. Thus virus in such cases must have been either in the organism of the recovered person and eliminated from him, or it must have been taken from some other sick person and transmitted to a third. The author favors absolute isolation and careful attention to the mucous membranes of the patients during convalescence.

5. Influence of Elements of the Thyroid Gland upon Experimental Tuberculosis.—Frugoni and Grixoni state that the daily administration of thyroid gland at a time corresponding to or preceding infection with tuberculosis, and in such doses as are well borne, causes an energetic acceleration of the metabolism of the organism and modifies favorably the action of the experimental tuberculous and pseudotuberculous infection in rabbits. The animals treated with thyroid gland live longer than the control animals, and in some cases life is prolonged indefinitely.

9. Demonstrations of Microparasites by the Antiformin Method.—Thilenius asserts that by the use of antiformin and the centrifuge microorganisms can be separated from the secretions and excretions of the body in a comparatively short time, and that it is the best method for the practitioner to use.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 22, 1900.

1. The Clinical Value of Wassermann's Syphilis Reaction. By HAUCK.
2. The Utilization of the Natural Protective Powers of the Peritoneal Cavity in the Treatment of Appendicitis and of Diffuse Peritonitis from Perforation. By JANSSEN.
3. The Origin of Tumors of the Uterus. By THENHAGEN.
4. Internal Treatment of Skin Diseases with Lime Salts. By BETTMANN.
5. Serum Therapy of Epidemic Cerebrospinal Meningitis. By L. K.
6. A Case of Masturbation in a Woman Induced by Pruritus Genitalium. Recovery under Treatment with Uviol Light. By SCHMIDT.
7. A Case of Tumor of the Liver with Leucosuria. By BORN.

8. Helgoland and Hay Fever. By LIEBERMANN.
9. A Shoe for Flatfoot. By MUSKAT.
10. The Care of the Navel in the Newborn. By KRUMMACHER.
11. The Diametrically Opposite Consequences of Two Foreign Bodies in the Nose. By MUELENKAMP.
12. Yearly Report of the Ambulatorium of the Surgical Clinic at Munich. By GEBELE.
13. Contributions to the Treatment of Post Partum Hæmorrhages (Concluded). By LABHARDT.
14. Recollections of Richard Fleischer. By PENZOLDT.

2. Utilization of the Natural Protective Powers of the Peritoneal Cavity.—Janssen refers to the power of the peritonæum to encapsulate local inflammations by plastic adhesions, and to its power to secrete an enormous quantity of fluid which results in an autoirrigation of the cavity, or as he puts it, a direct, mechanical cleansing of the great lymphatic space. The general symptoms are discussed with a view to a refinement in diagnosis and presentation of indications.

3. Origin of Tumors of the Uterus.—Theilhaber, in a statistical paper, shows that myoma of the uterus is proportionately more frequent in the well to do classes of the population, while carcinoma of the uterus is proportionately more common among the working classes.

4. Internal Treatment of Skin Diseases with Lime Salts.—Bettmann reports good results from the administration of a five per cent. solution of calcium lacticum without the addition of any corrigent, one or two tablespoonfuls before each meal for three or four weeks, in purpura, urticaria, senile pruritus, and herpes gestationis. Little or no benefit was obtained in angioneurotic œdema, eczema, lichen ruber, habitual herpes, or pemphigus.

5. Serum Therapy of Epidemic Cerebrospinal Meningitis.—Leick reports that up to the end of May of the present year he had made intralumbal injections of Kolle-Wassermann's serum in thirty-four cases of epidemic cerebrospinal meningitis. Of these eleven patients died, a mortality of 32.4 per cent. Of the eleven patients who died five were moribund when they came for treatment and four died on the same day in which they were injected. If these moribund cases are excluded there remain twenty-nine cases with a mortality of 20.7 per cent. In contrast with these figures fifty-nine patients were treated without serum and three with the serum injected subcutaneously, in all sixty-two, of which twenty recovered, a mortality of 67.7 per cent. All the three patients in whom the serum was injected subcutaneously died, their clinical condition did not seem to be affected by the serum.

7. Tumor of the Liver with Lævulosuria.—Borchardt reports a case, met with in a woman, forty-four years old, of fatal, probably carcinomatous disease of the liver, which presented all the signs of insufficiency of the liver, such as toxic destruction of albumin, raising of the ammoniac quotient, and urobilinuria, with spontaneous lævulosuria. The excretion of lævulose was markedly increased by the ingestion of small quantities of lævulose, while the ingestion of glucose had no influence upon the excretion of sugar.

13. Post Partum Hæmorrhage.—Labhardt, in desperate cases of post partum hæmorrhage, performs laparotomy and total extirpation of the uterus. He prefers this to vaginal extirpation, be-

cause it can be performed much more rapidly and is associated with less loss of blood. He says that in two minutes the body can be opened, the uterus drawn forward and tied off, and that then the remainder of the operation can be done more leisurely. Another advantage of the abdominal operation in private practice is that it can be performed without special instruments and without assistants.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

July, 1909.

1. A Clinical Study of the Therapeutic Value of the Calcium Salts in Gastric Tetany, with an Anatomical Report on the Parathyroid Bodies, By FRANCIS P. KINNICUTT.
2. A Common Modification of the First Sound of the Normal Heart Simulating that Heard with Mitral Stenosis, By HENRY SEWALL.
3. Gastrointestinal Autointoxication, By J. KAUFMANN.
4. Acquired Chronic Acholuric Jaundice, with a Blood Picture at One Time Resembling that of Pernicious Anæmia, By F. PARKES WEBER.
5. The Means by which Infectious Diseases Are Transmitted, By ALVAH H. DOTY.
6. Uncinariasis in Panama, By G. H. WHIPPLE.
7. Malignant Newgrowth in Childhood. I. Malignant Disease of the Uterus, Ovary, and Vagina in Children, By WILLIAM A. EDWARDS.
8. A Case of Viperine Snake Bite (of undetermined kind) Treated with Calmette's Serum Antivenimeux (or Antivenin), By W. F. ARNOLD.
9. Solitary Tuberculosis of the Breast, By E. M. VON EBERTS.
10. Tuberculous Pulmonary Cavities in Infants, By C. Y. WHITE and HOWARD CHILDS CARPENTER.
11. Two Cases of Myxedema, By ROBERT L. FITFIELD.
12. Fatal Anæmia of Unknown Cause in a Child of Five Years, with Unusual Cells in the Blood, By WILLISTON W. BARKER.
13. The Ocular Complications of Nasal Sinus Disease, By ARNOLD KNAPP.
14. The Cammidge Reaction in Experimental Lesions of the Pancreas, By JOHN SPEESE and EDWARD H. GOODMAN.
15. The Tonsils as Eliminative Organs, By WILLIAM W. ASHBURST.

1. **The Calcium Salts in Gastric Tetany.**—Kinnicutt reports a case of gastric tetany. The patient had been treated with calcium salts and parathyroid preparations, and the author remarks that certain facts stand out prominently in the clinical study of the case: The rapid and controlling effect of the soluble calcium salts upon the tetanic symptoms. The maintenance of this effect only by the continued use. The comparatively slight effect of large infusions of salt solutions, used alone. The slight influence, if any, of parathyroid preparations (nucleoproteid) given by the mouth in controlling the hyperexcitability of the nervous system. The effect of the nucleoproteid given subcutaneously cannot be estimated positively in the present instance, as it was given alone only during a period of twenty-four hours and when the tetanic symptoms had been controlled practically by the calcium salt. A distinct renewal of the spasm at the end of this interval led to the renewed use of the calcium salt in combination with the parathyroid material. The demonstration of the controlling influence of the soluble calcium salts upon the characteristic symptoms of at least one important variety of human spontaneous tetany—the tetany of gastrectasis, with stagnating stomach contents—suggests a probable similar therapeutic value of these salts in other forms of the disease in human beings. The occurrence of typical tetanic spasm in a case of gas-

trectasis with parathyroid bodies of normal anatomical structure and—presumably—of normal functioning power.

2. **First Sound of the Normal Heart.**—Sewall observes that in the structurally normal heart, especially in conditions of circulation excitement, the first sound frequently begins with a crescendo tone, simulating closely the faint and brief presystolic murmur or acute accent initiating the first sound in certain stages of organic mitral stenosis. This modification of the first sound may be pronounced either in the tricuspid or the mitral area or both. An attempt has been made to show that when the ventricles are filled at a certain rate the reflux of the blood current may be expected to bring the auriculo-ventricular valves sufficiently into approximation, so that the auricles in contracting must force a channel between them and cause vibrations of perceptible intensity, thus giving rise to an audible presystolic tone or murmur.

6. **Uncinariasis in Panama.**—Whipple shows that hook worms are found in the routine autopsy examinations in thirty-one per cent. of the cases. The old world hook worm (*Ankylostomum duodenale*) is present in seventeen per cent. of the cases, together with *Necator americanus* in eleven per cent. of the cases. The new world hook worm (*Necator americanus*) is present in twenty-one per cent. of all the cases, and predominates in all heavy infections. The whip worm (*Trichuris trichiura*) is present in seventeen per cent., and *Ascaris lumbricoides* in eight per cent. of the cases. Hook worms removed from the intestinal mucosa a few hours after the death of a patient very often contain fresh blood. Ecchymoses and small submucous hæmatomata are not rare findings in an infected jejunum. Hook worms ingest both blood and epithelial cells and presumably digest both. The anæmia is due not only to direct loss of blood through activity of the hook worms, but to a diffuse inflammation of the mucosa and submucosa of the jejunum. This inflammation is caused by the bites of the parasites which damage the mucosa and give entrance to the intestinal bacteria. The severity of the anæmia depends upon the number of hook worms, and upon the intensity and extent of this diffuse inflammation. Study of the "blood cysts" containing hook worms shows that the parasites can live in blood for days and cause no active hæmolysis of this blood—strong evidence against the presence of a powerful hæmolysin in the hook worm.

14. **The Cammidge Reaction.**—Speese and Goodman have made experiments on thirteen dogs to confirm or refute Cammidge's statement that by means of chemical analysis a specific substance could be demonstrated in the urine of individuals suffering with pancreatic disease. They conclude that the Cammidge reaction is a constant feature in hæmorrhagical pancreatitis, in mechanical injuries of the gland (crushing of the tail, partial extirpation), and in total extirpation. In certain cases of the subacute type of pancreatitis the reaction is inconstant. The nature of the phenylhydrazin compound is not definitely established. If pentose, it is apparently not derived from the pentose yielding material of the pancreas. A positive reaction is indicative of altered carbohydrate metabolism due to disturbance of the internal secretion of the pancreas.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirty-fourth Annual Meeting, Celebrating the Centennial of McDowell's Operation, Held in New York, April 20, 21, and 22, 1909.

The President, Dr. J. RIDDLE GOFFE, of New York, in the Chair.

An Address of Welcome was delivered by Dr. CLEMENT CLEVELAND, of New York, and was responded to by Dr. J. MONTGOMERY BALDY, of Philadelphia.

Indications for Cæsarean Section in Placenta Prævia.—Dr. GEORGE TUCKER HARRISON, of New York, read a paper on this subject in which he pointed out that the resources at our command were amply sufficient in the vast majority of cases. While the cases in which Cæsarean section for placenta prævia was justifiable were very few, they did occur, and when such a case presented itself for operative intervention, he maintained that vaginal Cæsarean section should be the operation of election. Vaginal Cæsarean section was a surgically exact method and should not be brought in competition with other methods. It fulfilled the requirements of quick scientific surgery, in that one could make a clean incision, deliver, sew up the incision, and get union by first intention.

Cæsarean Section in Placenta Prævia.—Dr. CHARLES JEWETT, of Brooklyn, said that in case of complete placenta prævia, when complicated with an undilated and rigid cervix, abdominal section claimed consideration. Certain of the more conservative sectionists accorded a place to the Cæsarean operation in these conditions when it could be performed in a hospital. But the benefits of a hospital environment obtained in a similar measure for obstetric delivery. Even in cases of central implantation, and with an undilated cervix, bleeding was amenable to one or more of the usual obstetric procedures, the gauze tamponade or a water bag within the cervix, or the bag passed through the placenta, podalic version, etc. Grave hæmorrhage in placenta prævia was due more to failure in the timely and well directed use of the obstetric measures at our command than to any lack of them.

With ligation of the uterine arteries, as proposed by Miller, of Pittsburgh, the author had had no experience in vicious implantation of the placenta. Its value in certain other uterine hæmorrhages was known, and if its author's contentions were borne out by further trial, nothing more was required for the management of the kind of hæmorrhage under discussion. From the standpoint of shock, the major operation was at a signal disadvantage. The abnormal implantation was seldom or never recognized until bleeding had begun. Abdominal section was fraught with grave risk after much hæmorrhage. In a greatly depleted patient it was almost surely fatal. Cæsarean section, when once begun, must be carried to completion, whatever the condition of the woman. On the other hand, no shock attached to the introduction of a hydrostatic bag, and little or none to a Braxton Hicks version. The obstetric procedure might be moderated to suit the needs of the individual case. Bleeding controlled, time was

permitted for returning strength and a slow and gradual dilatation, and delivery entailed a minimum of tax. In a considerable proportion of cases expulsion or extraction was made easier by immature foetal development. In nearly twenty-five per cent. the child was not viable, and here often extraction might be simplified by craniotomy. As between a skilful section and an equally skilful delivery by the natural passages less shock should occur in the latter.

The principal allegation for Cæsarean section in placenta prævia was its diminished foetal mortality. Under obstetric treatment the death rate of the child was formidable. A large proportion of the children were doomed to death, whatever the method of delivery. In cases of viable children, Cæsarean section might save many lives, but by no means all. Vaginal Cæsarean section, which had been advocated by German writers, had no greater title to consideration than the abdominal operation. While it might offer quite as good a prognosis for the mother, the chances for the child were not so good, owing to the somewhat greater foetal risks in extraction through the natural passages. Not only did we find little rational basis for Cæsarean section in placenta prævia, but its merits received scant support from experience.

In 2,010 cases of placenta prævia from the German, French, and Italian literature of the last two years, the maternal mortality under obstetric methods of delivery was 221 (10.9 per cent.), the foetal 1159 (57.3 per cent.); 726 of these cases, reported by Fûth, had been collected from the practice of midwives and general practitioners. Many of the women were subjected to prolonged tamponade and were exhausted by needless hæmorrhage. Exclusive of Fûth's cases, the maternal mortality was 6 plus per cent., and the foetal 68.8 per cent.

Comparing these results with those of ninety-five abdominal Cæsarean operations collected from seven publications, all but one of the last year, he found in the latter a mortality of 11.5 per cent. for the mothers, and 34 per cent. for the children. Sellheim, in one vaginal Cæsarean section, saved both mother and child. In twelve uterovaginal sections reported by Bumm, the maternal deaths were 8.3 per cent., and the foetal 83.3 per cent. Hammerschlag referred to twenty-six vaginal Cæsarean sections, with a foetal death rate of 55 per cent. How many mothers were lost he failed to say. The few vaginal operations made a better showing for the mothers than the abdominal, but the percentage of foetal deaths was no less than under ordinary methods. If conclusions might be formulated on so small a number of cases, the Cæsareanists had not yet established their case.

The Indications for Abdominal Cæsarean Section in Placenta Prævia.—Dr. HENRY D. FRY, of Washington, D. C., said the principal dangers to be overcome in the treatment of placenta prævia were hæmorrhage, laceration of the uterus, and sepsis. Delivery from above did away with these dangers to a great extent, because removal of the infant and placenta by a Cæsarean section abolished the first and second stages of labor. Abdominal Cæsarean section, however, brought dangers of its own, such as shock, sepsis, acute dilatation of the stomach, and

other postoperative complications. The indications for the classical Cæsarean section were primiparity, a small vagina, a rigid and undilatable cervix, and placenta prævia centralis. This combination would be met with in about five per cent. of all cases of placenta prævia; therefore other management would best meet the indications in ninety-five per cent. of the cases.

Cæsarean Section in the Treatment of Complete Placenta Prævia.—Dr. FRANKLIN S. NEWELL, of Boston, said that the advocates of Cæsarean section maintained that the maternal mortality under the ordinary methods of treatment was so great that some change must be made. Hirst stated that in the hands of the general practitioner a mortality of approximately forty per cent. was present in complete placenta prævia, but thought that in the hands of experts the ordinary mortality should be in the neighborhood of one per cent., or, in other words, an accidental mortality. Other authorities admitted a mortality varying from three to six per cent. in a large series of cases, presumably under the care of experts. The maternal mortality from abdominal Cæsarean section for placenta prævia was variously given as from twenty per cent. upward, even in expert hands, and it seemed probable that if abdominal Cæsarean section was adopted as the routine treatment by the profession as a whole, a constant high mortality would be maintained, since the results of surgery performed by the general practitioner were always worse than those obtained by competent abdominal surgeons. While the maternal mortality in the hands of an expert averaged from three to five per cent., in the hands of the general practitioner the mortality was forty per cent. The fetal mortality in cases of complete placenta prævia varied from sixty to sixty-five per cent. under the ordinary methods of treatment, and it would seem at first sight that this was the indication for the performance of Cæsarean section. However, any one who studied carefully the causes of the foetal death rate must be impressed with the fact that no such improvement in statistics was to be expected as would seem probable at first sight. If there was any factor which claimed recognition in determining the advisability of substituting Cæsarean section for the ordinary methods of treatment of placenta prævia, it would seem that the morbidity attendant on dilatation and extraction was the one. There could be no doubt that the trained surgeon, who had had no obstetric training, would have better results in treating placenta prævia by Cæsarean section than if he tried to perform an operation with which he had had little or no experience. The advocates of Cæsarean section had not recognized that their personal limitations furnished the great indication for an abdominal delivery, and not the exigencies of the case. Recently vaginal Cæsarean section had been urged as the best solution of the problem, and the advocates of this operation alleged that it was simple and easy for the trained surgeon and carried much less risk with it than the abdominal delivery, but the author's feeling, based on a limited experience with the operation was that it was not so simple a procedure, even in uncomplicated cases, as was commonly stated, and he felt that, although in the rare cases, where the cervix

was more or less rigid it was probably a safer operation than abdominal delivery as a routine procedure, but in complete placenta prævia it had few if any advantages over the methods previously in use.

Cæsarean Section in Case of Placenta Prævia.—Dr. EGBERT H. GRANDIN, of New York, said that since, except where the patient could be kept under constant observation, the rule should be to empty the uterus as soon as the diagnosis was made, rarely would the question of section offer. Less radical means would suffice from the standpoint of the woman, and in marginal instances for the child. In central implantation near or at term the child might be disregarded, and except the cervix was diseased, undilatable, and not incisable, the question of Cæsarean section would not offer. Where time permitted, if the vaginal portion had merged, dilating measures sufficed, associated with the Dührssen operation. In marginal instances the vaginal Cæsarean section might enter into consideration.

Sterilization in Cæsarean Section.—Dr. JOHN OSBORNE POLAK, of Brooklyn, felt that the obstetric surgeon should sterilize the woman who was subjected to repeated Cæsarean section, first, if she requested the procedure; second, after the second section, in the presence of the absolute indication, if the proper consent could be obtained; third, if the pathological conditions present necessitated extirpation of the uterus in the interests of the patient's life and health, and then sterilization might be done, if necessary, without consent.

In elective and uncomplicated hysterotomies, excision of the proximal ends of the Fallopian tubes at their origin in the uterus and the occlusion of the severed ends by flattening them out and suturing them to the peritonæum or the posterior fundal wall was the operation of choice. When infection, disease, or atony with uncontrollable hæmorrhage of the uterus was present, hysterectomy or the Porro operation should be elected, in order to secure to the patient immunity from future conception and gestation. Finally, whenever possible, one or both ovaries should be retained, in order that an operative menopause might be averted.

The Justifiability of Sterilizing a Woman after Cæsarean Section.—Dr. CHARLES M. GREEN, of Boston, said it was ethically and morally unjustifiable to sterilize a woman in performing Cæsarean section, even if she and her husband requested it. The burden of proof to the contrary rested with those who advocated it. Opportunity might properly be taken in performing Cæsarean section to remove diseased organs; and the result might be that the woman could never again become pregnant, as in bilateral salpingo-oophorectomy or in hysterectomy for neoplasms. But in the presence of disease requiring total ablation of the pelvic generative organs, pregnancy could not again occur were the organs not removed. If the indications for Cæsarean section were absolute, and husband and wife were so informed, they might abstain from subsequent sexual intercourse and pregnancy. If the indication was relative and the disproportion of minor degree, the woman subsequently might be safely delivered of living children. She might deliver herself. In either case experience taught that repeated

section might be performed as safely as the primary operation. A husband and wife might not ethically ask that either be sterilized with a view to preventing pregnancy and avoiding repeated section. If such a request was made and acceded to, not only was the operation morally wrong, but, in the event of a second marriage, might be bitterly regretted. The author furnished statistics in support of these opinions.

Dr. ALBERT F. A. KING, of Washington, D. C., said there were a great many cases of placenta prævia all over this country for which the greatest surgical skill could not be obtained, and hence the question arose, What was the best treatment to pursue in these cases? We had to fall back on other treatment. It was very essential to divide the cases into two classes, namely, those in hospitals with surgical aid and those in the homes of women without surgical aid. Obstetrics in the home without proper surgical aid was entirely different from obstetrics in hospitals with surgical aid.

Dr. HERBERT R. SPENCER, of London, England, stated that some nineteen years ago he wrote his first paper on The Diagnosis of Placenta Prævia by Abdominal Palpation. At about this time Lawson Tait made a statement relative to the high mortality from ordinary methods of treatment of this complication of pregnancy, and suggested abdominal Cæsarean section. This was received with great ridicule everywhere by obstetricians in Great Britain, and Tait acknowledged that he had not done obstetric work for many, many years. The speaker looked the subject up in connection with the University College Hospital, in which there was a large maternity under his charge, the number of cases of confinement amounting to from 2,500 to 3,000 a year, and found at that time that the mortality of women treated in their own homes and those treated at hospitals aseptically by his predecessor, Dr. John Williams, and his own slight experience after him, was about six per cent. Tait said the mortality under the usual methods of treatment was forty or fifty per cent. This statement regarding the percentage of mortality was very much ridiculed.

He had had practically no experience with abdominal or with vaginal Cæsarean section in the treatment of placenta prævia. His own treatment had been usually by the Braxton Hicks version and leaving the case to Nature, and usually the child was born without any further hæmorrhage in the course, on an average, of three hours, but this resulted in a high foetal mortality. One should consider whether he was going to take into account the mother or the child or both. While that treatment saved the mother in the great majority of cases, the foetal mortality was quite high. In a certain small proportion of cases there was an indication for abdominal Cæsarean section. The speaker cited such a case.

PROFESSOR HOFMEIER, of Würzburg, Germany, stated that abdominal Cæsarean section in the treatment of placenta prævia was limited to a small number of cases, for the reason that it was practically impossible for the general practitioner to follow out this method of treatment. The old method of combined version and slow extraction, which was generally accepted in Germany twenty-five years ago, and the treatment by means of metreurynters in

cases of large and strong children, had given good results, and in spite of the results obtained by abdominal Cæsarean section in placenta prævia, combined version and slow extraction was still a useful method of practice.

Dr. CHARLES M. GREEN, of Boston, desired to place himself on record as being in agreement with Dr. Fry and others who took the position that the Cæsarean section must have a limited application in the treatment of placenta prævia.

Dr. A. LAPHORN SMITH, of Montreal, said it was his earnest conviction at the present time that the mortality following abdominal Cæsarean section in the hands of experts in this country was almost nil. This operation was far preferable to *accouchement forcé*, which, in the hands of the general practitioner and some experts, had quite a high mortality. He hoped this society and other societies would frown down upon *accouchement forcé* as a means of delivery in this and other cases where Cæsarean section could be resorted to with practically no mortality. If the woman was operated upon before she was touched by septic hands, when the child was not viable, there was no reason for waiting to do abdominal Cæsarean section, as there the life of the child did not come into question. When it came to the question of whether Cæsarean section in the hands of the general practitioner was logical or not, it was not. It was a safe operation only when done by an expert.

Dr. PHILANDER A. HARRIS, of Paterson, N. J., said it was hardly in accord with his experience when he heard one of the speakers mention the extreme dangers of dilating the cervix with the hand. He had not done much obstetric work in the last few years, but in forty or more cases which he attended before that time labor was not attended with great difficulty, and in many of them he had no trouble in dilating the cervix with his hand. Of this number of cases he lost only one by the employment of this method of dilatation. Fatalities sometimes resulted from the injudicious use of *accouchement forcé*. If one knew how to use the hand and took plenty of time, there was no occasion for a woman having hæmorrhages and extensive laceration of the cervix.

Dr. E. W. CUSHING, of Boston did not think Dr. Green or even the Boston Lying-in Hospital had a right to determine whether a woman should be sterilized or not. If she had been malformed by Nature and could not be delivered of a child without repeated surgical operations which involved the risk of life, and she desired to avoid that subsequent risk by having a sterilizing operation done, she had a right to do so.

Dr. FRY said that his rule was to explain the situation to the woman and her husband, and allow them to decide whether or not she should be sterilized. He did not believe we could draw a dividing line, on account of the social position of the woman, and say we could sterilize those of the lower classes and not those of high social position. If such a position was taken, women of humble position, who gave birth to children that might become great men, would be sterilized.

PROFESSOR HOFMEIER said he had performed sterilization not only with the consent of the woman and

her husband, but at their urgent request. He did not think it was possible for women to abstain from sexual intercourse and subsequent pregnancy, as indicated by Dr. Green.

Dr. JEWETT had performed Cæsarean section two months before on a woman upon whom he had done the same operation two years previously, and at the request of both the husband and wife he felt justified in sterilizing the woman.

Dr. HERBERT R. SPENCER, of London, did not consider we were justified in saying, in the absence of pathological conditions, such as fibroid tumors, cancer, or infection, that a woman should not have any more children. From a purely ethical standpoint, he could not see any difference between consenting to operate on a woman and preventing her from having children by this sterilizing operation and committing an abortion because she asked for it. The so called sterilizing operation was not always reliable. A distinguishing abdominal surgeon in England had supposedly sterilized a woman, but subsequently, much to her annoyance and mortification, she again became pregnant, and the speaker delivered her. He subsequently delivered this woman for the seventh time after the operation of so called sterilization.

Dr. J. MONTGOMERY BALDY, of Philadelphia, said that Nature had so arranged matters that some women, apparently healthy, could not bear children. Pathological processes set in which rendered them incapable of so doing. A woman was not in this world to be a beast of burden, although she had reproductive duties to perform, and there came a time when, after she had performed them to the best of her ability, Nature had so deformed her, perhaps maimed her, that she no longer could be delivered of a child without a surgical operation, and for the sake of her health, comfort, and happiness, she was the best arbiter as to whether sterilization should be done or not. His sympathies went out largely to women in this respect. They had a right to an exceedingly serious "say" in regard to many of these operations. If a woman, guided by the conscientious judgment of the physician, decided to be sterilized, the surgeon had a right to sterilize her and prevent reproduction in the future in this individual case, but this did not mean that this operation should be done on every woman who requested it.

Dr. ANDREW F. CURRIER, of Mt. Vernon, N. Y., placed himself on the side of those who believed that it was an injustice to a woman, aside from any desire she might have for children, to subject her repeatedly to an operation which risked her life. The mere physical conditions alone which resulted, or were likely to result, should influence us very materially in regard to the question of future pregnancy.

Dr. SETH C. GORDON, of Portland, Maine, thought a woman had a right to say whether she should be sterilized or not. Where she was subjected repeatedly to an operation which was known to be dangerous to life, in order to be delivered of a child, she certainly had a right to say whether or not sterilization should be performed.

Dr. C. C. FREDERICK, of Buffalo, had sterilized women at their request and that of their husbands,

in cases where Cæsarean section had been done for the absolute indication, with narrowing of the pelvis to a degree that it was absolutely impossible to extract a viable child through the pelvis.

Dr. KING said that self preservation was the first law of Nature, and preservation of the species was the second law. He agreed with those who had expressed the opinion that woman and their husbands had a right to decide the question of sterilization.

Dr. J. WESLEY BOVIE, of Washington, D. C., concurred in the view that the husband and wife should decide whether the woman was to become pregnant or be sterilized; but the surgeon had not the right to act as he chose to produce sterility. The decision of the question rested largely with the husband and wife, and not with the surgeon. The surgeon had no right to remove a woman's possibility of future pregnancy except for grave pathological lesions in the organs of generation themselves.

Dr. WILLIAM S. STONE, of New York, said that one of the impressions gained from this discussion was an exaggerated idea of the frequency of placenta prævia. Personally, he never performed either vaginal or abdominal Cæsarean section for placenta prævia. On one occasion, however, in a case of severe hæmorrhage, where the placenta was normally implanted, he did a Dührssen operation. He had no idea of doing it, until he found hæmorrhage was profuse and the indication was to empty the uterus just as rapidly as possible, and it occurred to him at the time that he could resort to the Dührssen operation and deliver the woman quickly, which he did with success.

Dr. REUBEN PETERSON, of Ann Arbor, Mich., said it was the consensus of the authors of the various papers read that Cæsarean section was very infrequently indicated in placenta prævia where we could usually dilate the cervix easily. If Cæsarean section was generally promulgated as an operation for this complication of pregnancy, the mortality in the hands of the general practitioner would be enormous. This should always be borne in mind. A safe procedure for the general practitioner was to resort to the Braxton Hicks method or use the bag. Only a very small number of the cases he had seen presented indications for abdominal Cæsarean section. Vaginal Cæsarean section was totally unindicated in this class of cases.

Dr. GEORGE GELLHORN, of St. Louis, said that Dr. Fry had clearly shown that in only about five per cent. of the cases was Cæsarean section indicated in placenta prævia. He wondered whether this percentage could not be still further reduced if the Barnes bag, so widely used, was discarded, and instead the Champetier de Ribes or the Pomeroy bag used more generally, as he thought a number of women would be successfully delivered in whom heretofore there had been failure.

As to Cæsarean section, it was not only necessary to consider its mortality, but its morbidity, and in placenta prævia this operation had certainly untoward complications or after effects that should be emphasized, and among them postoperative adhesions, ventrifixations, sepsis, etc. If the indications for Cæsarean section in placenta prævia were extended, the number of such complications later on would materially increase.

With reference to sterilization, there was a simple way of sterilizing the man by doing a vasectomy instead of sterilizing the woman. This simple operation could be done in a minute or so under local anaesthesia; yet, how many men would be willing to have vasectomy done on them? He thought we should be more charitable and not do unto others what we did not want done unto ourselves.

Dr. WILLIS E. FORD, of Utica, N. Y., said he hoped the society would not go on record in favor of the sterilization of women, for if it opened the door, it might be opened still wider for other operations which ought not to be done.

(To be continued.)

Letters to the Editor.

A SWINDLER.

248 WEST 121ST STREET,
August 3, 1909.

To the Editor:

I beg leave to call your attention to the following: This afternoon a young man called at my office with a package which he declared contained instruments that had been ordered by me, that he could not wait for me, as he lived in New Jersey, but that I had left word that I must have the instruments that afternoon for an operation the following morning, whereupon my mother, summoned by the maid, paid him the \$7.50 that he demanded. On my return at 5:30, the package was immediately opened and found to contain a cigar box full of moth balls. The man was about five feet eight inches in height, very slender, with a decidedly long nose and Jewish cast of feature, and of fair complexion. He was neatly dressed in a gray suit, tan shoes, and a straw hat, and was clean shaven and a good talker.

The police have been notified, but advise that you publish some kind of warning to the profession, that they may be put on their guard and that may possibly lead to his detection and arrest, for he will undoubtedly attempt to work his game again. They inform me that the same chap, judging from the description, obtained \$6.50 from the servant of a doctor in West 116th Street, whose name they have forgotten. In this case he also used moth balls. This happened in the early part of July.

ARTHUR S. TENNER.

THE TREATMENT OF EPISTAXIS.

85 BROAD STREET, Charleston, S. C.,
August 6, 1909.

To the Editor:

In the multitude of counsel there is wisdom. That is the first reason which prompts me to write the following addenda to what my distinguished friend Dr. Beverley Robinson has written in your issue of July 31st on *The Treatment of Epistaxis*. The second reason is that I have never published any article that I did not wish some one would take some notice of it, criticise it adversely if necessary, or pat me on the back if possible, because it has been said that he who pats himself on the back is generally the same fellow who kicks himself a little lower down later on. Indiscriminate packing of the nostrils for epistaxis often produces or aggravates the

very condition which we are trying to prevent. It acts precisely like a tourniquet and dams the blood up so that it forces its way out worse than before the packing was applied. Of course if the packing is applied directly over the bleeding spot and not elsewhere, and the hæmorrhage is not a result of heart lesion or hæmophilia, the clot forms, the vessel retracts, and the hæmorrhage is stopped. For this reason also, if a stream of cold water or moderately cool water is pumped through the nostril, the same effect will be produced. I have found a most admirable method by which the clot is allowed to form and the hæmorrhage is controlled when every other method has failed. It is the simplest and handiest of all devices. An ordinary washerwoman's clothespin or a stiff bent hair pin is applied over the end of the nostrils so as to occlude both nostrils for a short time. This is a most effective method and will often stop the hæmorrhage, be it forward or backward. The use of saturated solutions of adrenalin or cocaine or alumol or any combination of them is extremely effective, but they are often only of temporary service and do not prevent the secondary hæmorrhages which are generally so annoying to the specialist. There are very few rhinologists who have not had patients who became almost exsanguinated after operations on the nose and who are at least always fearful that a terrible hæmorrhage will occur after all bleeding has apparently ceased. After these operations I caution the patient always to keep the head up, as the bleeding generally continues as long as the head is held in a dependent position. I next caution all patients to provide themselves with a stiff bent hair pin or a common washerwoman's clothespin and apply continuous pressure to the end of the nose until the clot has a chance to form and the bleeding to stop. Of course I have administered the various internal remedies in very severe cases and with those hæmophiliacs who I have reason in advance to believe will bleed profusely.

W. PEYRE PORCHER.

New Inventions.

A COLLAPSIBLE GENITOURINARY BASIN FOR THE MALE;

Being an Improvement on the Author's Basin, Suggested by Professor James R. Hayden.

By ABRAM L. WOLBARST, M. D.,
New York,

Consulting Genitourinary Surgeon, Central Islip State Hospital;
Attending Genitourinary Surgeon, Beth Israel Hospital and
West Side German Dispensaries; Professor of Genitourinary Diseases, New York School of Clinical Medicine, etc.

In the *American Journal of Surgery*, July 1905, I described a new basin devised especially for use in connection with diseases of the male genitourinary organs. Briefly it may be described as follows:

It is made of sheet metal or hard rubber, and so shaped that it conforms to the outlines made necessary by the thighs, scrotum, and penis (Fig. 1). The basin, when in use, rests on and between the thighs, its projecting proximal wall so arranged as to rest over but not in contact with the scrotum, and reaching by means of extension flaps on either side.

to the inguinal region. In the centre of this wall a semicircular notch of ample proportions allows a convenient resting place for the pendulous urethra.

At its upper margin the basin is $11\frac{1}{2}$ inches long, not including the extensions on each side, and $7\frac{1}{2}$ inches in width. Its floor is $5\frac{1}{2}$ inches long and $1\frac{1}{2}$ inches wide. The walls of the basin describe a curve the concavity of which corresponds to the convexity of the thighs. The depth is five inches, and the capacity thirty-two ounces.

Some time ago, it was suggested to me by Pro-

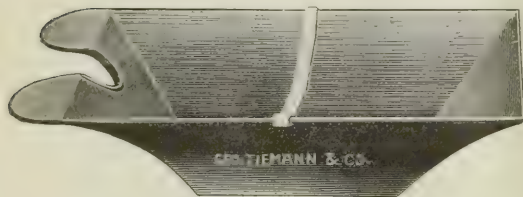


FIG. 1.—Noncollapsible basin.

fessor James R. Hayden, of Columbia University, that the usefulness of this basin would be greatly enhanced if it were made of some collapsible material so that it could be carried to the bedside of the patient in the surgeon's bag. Acting on this suggestion, I have had this improvement made.

The new basin is made of rubber sheeting like that of the Kelly pad, supported by a covered wire



FIG. 2.—Improved basin, ready for use.

framework (Fig. 2). The dimensions and shape are practically identical with the original noncollapsible model. In order to insure greater rigidity when in use, the walls are enforced by a metal frame, which is removed when the basin is to be folded, and which also serves the purpose of acting as a rest for a catheter projecting from the urethra.

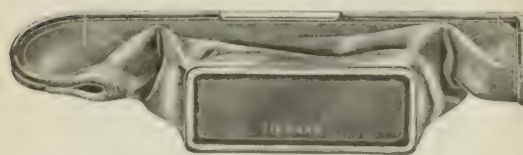


FIG. 3.—Improved basin, folded.

When folded (Fig. 3) the basin occupies a space $12\frac{3}{4}$ inches by 4 inches, and is but $\frac{3}{4}$ inch in thickness. The entire weight, including the metal frame and catheter carrier is seven and one half ounces.

It fits easily into an ordinary bag, and can be carried conveniently in the coat pocket.

I wish to take this opportunity to thank Professor Hayden for his kind suggestion, and Messrs. Rostiemann & Co., for their courteous cooperation.

105 EAST NINETEENTH STREET.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

An Introduction to the Science of Radioactivity. By CHARLES W. RAFFETY. With Illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. xii-208.

This very excellent work is exactly what it is said to be, namely, an introduction into the science of radioactivity. The author has succeeded in presenting in a concise and popular manner the essence of our present knowledge of the radioactive elements. The significance and results of all important experiments are carefully analyzed, but very few are given in detail. In this way one is enabled to arrive at conclusions without being fatigued by laboratory details which require a specially trained mind to appreciate. At the same time one is made thoroughly acquainted with the general character, the difficulties, the importance, the interpretation, and the significance of every noteworthy experiment. The book is full of interesting and valuable knowledge; the sentences are so well connected and the entire subject so well presented that the reader's attention is held from the first page to the last. Indeed, the most reasonable interpretation of the word "introduction" in the title is to consider that the reader will be stimulated to better acquaintance with the subject; that is, he will be likely to continue his investigations by reading exhaustive treatises on the theory and practical value of radioactivity.

The book is divided into three parts—descriptive, theoretical, and practical. This is not an entirely favorable division, because it causes considerable repetition. The first part deals with a general description of the radioactive elements and their physical properties. In the second part the author enters into a theoretical discussion of the various phenomena produced by these elements. This is decidedly the most interesting part of the book. It is here that one is made acquainted with the electron theory, atomic disintegration, periods of decay and recovery, ionization, etc. The last chapter of this section is no less than fascinating. We are told how radium originates from uranium, and that the final product is probably lead, and, as in the study of astronomy, the imagination is stimulated to such an extent that one immediately desires to plunge beyond the progress of science and demand the impossible. One also learns that the heat emitted from radium is a secondary effect due to the impact of alpha particles with the substance of radium itself. To quote the author, "A difficulty which has always confronted physicists is the estimated age of the earth. Geological and biological considerations

demand a period far longer than was physically admissible on the assumption that the earth was a mass which was simply cooling down from an initially high temperature. It has been calculated that one gramme of radium emits 100 grammes calories per hour, from which it can be shown that the presence of a very minute quantity of active matter in the mass of the earth will suffice to so prolong the process of cooling as to amply satisfy the most extravagant demands of geologists. The science of radioactivity also supplies the solution to the great question of the maintenance of solar radiation, and it has been calculated that the presence of 2.5 parts of radium in one million will account for the present rate of emission of energy. Such possibilities have a profound astronomical significance, indicating almost limitless time for the process of stellar evolution." Not only is the science of radioactivity modifying many of the fixed conceptions of astronomy, but, as is well demonstrated by the author, it has caused radical changes in and revolutionized the study of chemistry and physics.

The third part is devoted to a description of experiments that can be reproduced by any one possessing the proper apparatus; experiments illustrating the action of the radioactive elements upon the photographic plate, upon fluorescing substances, magnetic deflection, the canal and cathode rays, ionization, etc. The work closes with an appendix which consists of a summary of the more important proved facts. Many physicians will undoubtedly be disappointed because the book does not contain a discussion regarding the medical value of radioactivity. To enter the field of medicine in the present work is not the aim of the author, who in his modest preface states that he has "endeavored to give a concise and popular account of the properties of the radioactive elements and the theoretical conceptions which are introduced by the study of radioactive phenomena." The book is illustrated with many diagrams and radiographs. It is printed on good paper, is free from typographical errors, and is substantially bound in cloth. The index, which is arranged according to section, is not altogether satisfactory. The work has merit, and those who read it will profit thereby.

Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A. M., C. M. (Aberdeen), Professor of Surgery, Kansas State University, etc. Volume I. Operations on the Head, Neck, Nerves, Trunk, Genitourinary System. Fourth Edition, Revised and Enlarged, With 713 Illustrations, a Number of Which Are Printed in Colors. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xi-832. (Price \$3.50.)

This new edition has been fully brought up to date and contains many changes; thus, the chapter on the nervous system has been entirely rewritten and greatly enlarged. The manual is divided into two volumes and the volume before us deals with the operations specified on the title page. There is also a section on certain unclassified topics, such as abscess, drainage, the nerves, and sutures. In the table of contents Part VI is called VII, evidently one of the unpleasant printer's errors which will always creep in where the least expected. The book well represents our present knowledge in operative surgery, and is in its condensed form a good manual, the illustrations, more or less schematic, well elucidating the text.

The Herter Lectures (New York, 1908) on *The Forces of the Body*. By ERNEST H. STARLING, M. D., F. R. C. P., F. R. S., Jodrell Professor of Physiology in University College, London. Chicago: W. T. Keener & Co., 1909. Pp. viii-186.

The book contains eight lectures, partly based on the author's Herter lectures delivered in 1907 and 1908, partly his Arris and Gale lectures delivered in 1896. They are very interesting reading. Lecture I is entitled Physical Properties of Protoplasm; the second lecture treats of the osmotic relationship of cells; the third speaks of the intake of fluids; the fourth takes up the production of lymph; the fifth, the absorption of the intestinal fluids; the sixth the output of fluid; and the seventh, the fluid balance of the body. In the eighth lecture the author discusses the causes of dropsy, that is, anasarca, cedema, hydrothorax, and ascites. That dropsy may be produced by factors causing increased transudation or causing diminished absorption is a statement which is the logical consequence of the preceding seven lectures, which find their conclusion in the last chapter.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XIII. Philadelphia: Printed for the College, 1908. Pp. lii-256.

The thirteenth volume of the third series of these *Transactions* contains, besides the usual matter pertaining to the society proper, such as lists of officers and committees, presidents, fellows, and members of the college, necrology, etc., the annual address by the president, Dr. James Tyson, twenty-two essays, and a list of papers read before the sections in ophthalmology, otology and laryngology, general medicine, and medical history. Space will not permit us to review here the essays, which contain many valuable points.

Medicoliterary Notes.

In the Augustan period the word medicine had become quite divorced from any magical connotations; it was sometimes used for poison and also for cosmetic. In the Middle Ages, however, medicine had become once more inextricably entangled with the black art, just as it has among the North American Indians. The alchemists applied the word to anything by which they hoped to accomplish their transformations. The philosopher's stone and the elixir of life were "medicine." If an uncivilized Indian dreams of any portable article, he will secure the latter to his costume and call it medicine. In this sense, too, certain white men still carry a horse-chestnut in the pocket as medicine against rheumatism.

Physicians form a large proportion of the amateur magicians of this country and Great Britain, and not a few have been graduated to the professional rank. Are we to welcome in return certain nonmedical hypnotists to our therapeutic cohorts?

McClure's for August has many interesting things. An article on The Aerial Battleship states that this vessel will carry a gun to fire four hundred shots a minute, which will "annihilate infantry and cavalry as surely as the hand of God." Apparently the army surgeon must be replaced by an undertaker specially trained to wholesale work. E. T. Brewster continues his interesting account of the researches into animal mentality; it is full of

surprises, especially for dog lovers. I. P. Youtat-shev gives a horrible account of four years' sojourn in the Russian Schlüsselberg fortress, where the dirt and crowding are so great that typhus exists perpetually. The Story of an Alcohol Slave, told by himself, is a dispassionate account of the ruin of a man by liquor. The narrator blames the modern saloon for his downfall and that of many other promising young men, especially for its custom of selling to minors.

The *Delineator* in its August issue returns to the worthy subject of the children. There were six hundred applications to adopt one child whose picture was published, but intending guardians are reminded that one hundred thousand others await their notice in numerous founding asylums. The magazine also makes a strong plea for instruction of poor and ignorant mothers, who have a belief that some divinely implanted instinct always guides them aright in feeding and otherwise caring for their young. As a matter of fact, they require information carefully imparted on such elementary matters as filth flies (generally known as house flies) and milk. By the way, how is their time spent by the various rescuers, settlement workers, and uplifters who pass much of their lives in the slums?

Such masters of short story writing as Maurice Hewlett, E. W. Hornung, and Edith Wharton contribute to the August *Scribner's*. In Miss Wharton's story, *The Debt*, there is a rather feminine stab; the hero, Galen Dredge, is fond of reciting Barbara Frietchie and Queen of the May. "His taste in literature was uniformly bad," remarks the narrator in the next sentence. We think the story will read somewhat absurdly to a scientist. Dredge's duty to teach the latest discoveries is obvious in spite of what he owes to his predecessor socially; to make the tale plausible, Archie should have been a woman and without scientific training.

R. Mountney Jephson, a popular military novelist of three decades ago, wrote in *A Race for a Life*: "By the way, it is a noticeable fact that nearly all the doctors in the British army are Irish, while a very large majority of the paymasters seem to be Scotch. Here we have, I suppose, exemplifications of the two national proclivities. Broken heads, so dear to the heart of every true Irishman, must be the magnet which attracts the sons of Erin to that profession in which, if they cannot break the heads themselves, they can do the next best thing—mend them."

Women, their habits and their foibles—if any—are occupying considerable space in the magazines these days. Men being quite too prejudiced to deal with the subject impartially, it is handed over to one of the stronger sex. Mrs. Wilson Woodrow discusses *The Fantastic Feminine* in the August *American* without mousquetaires or suedes, so to speak; why the present "hysteria of clothes"? she asks severely. Woman stands before the world with all the appearance of a daughter of Bedlam, continues Mrs. Woodrow; she pretends to be a sturdy oak and dresses like a clinging, floppy vine. These quotations show how unfitted rough, discourteous man is to handle so delicate a matter.

In the August *Everybody's*, Dr. William Hanna Thomson discusses *Indispensable Bacteria*; his reference is mainly to the fertilizing bacteria, although

he mentions staphylococcus, stegomyia, and others indispensable at present to the continuance of pathology.

According to *Farm and Home* for July 15th, chemists have finally succeeded in removing the crude taste of the oil extracted from Indian corn, thus furnishing another satisfactory substitute for olive oil.

The Century, in its August dress, is as beautiful and tinctorial as ever. A letter from Eugene A. Hecker points out that the majority of the residents of Rome in the Augustan period were decent, home-loving people, and that women were respected then and had more rights than they had a half century ago. We have shown how physicians were held in honor. A decadent society respects nobody and nothing. Martial and Juvenal are about as accurate as the writers for our comic weeklies, upon whom it would not do to rely for a picture of our civilization.

NEW PUBLICATIONS.

Oberst, Adolf.—Leitfaden der Krankenpflege. Mit besonderer Berücksichtigung des Bundesraterlasses über die städtische Prüfung von Krankenpflege-Personen nebst einem Verzeichnis von Fremdwörtern, welche in der Krankenpflege häufig vorkommen. Zweite Auflage. Jena: Gustav Fischer, 1909.

Winkler, Karl.—Die Geschwülste der Nebennieren. Mit 4 Tafeln. Jena: Gustav Fischer, 1909. (Price, 10 M.)

Jensen, Orla.—Die Hauptlinien des natürlichen Bakteriensystems nebst einer Übersicht der Gärungsphänomene. II. Abteilung. Band XXII. Mit 1 Figur. Jena: Gustav Fischer, 1909. (Price, 1 M.)

Lejars, Félix.—Technik dringlicher Operationen. Vierte deutsche Auflage. Mit ungefähr 1000 Abbildungen und 20 Tafeln. Jena: Gustav Fischer, 1909.

Aschoff, L.—Lehrbuch der allgemeinen und speziellen Pathologie. Bearbeitet von Dr. E. Albrecht, et al. Band I: Allgemeine Ätiologie. Allgemeine pathologische Anatomie und allgemeine Pathologie. Band II: Spezielle pathologische Anatomie. Mit zahlreichen zum Teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1909.

Wüllstein, L., und Wilms, M.—Lehrbuch der Chirurgie. Bearbeitet von Dr. Klapp, et al. Zweiter Band, II. (Schluss-) Lieferung, enthaltend den Schluss des I. Teils von Band II und den Schluss des ganzen Werkes. Mit etwa 400 teilweise mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1909.

Müller, Paul Theodor.—Technik der serodiagnostischen Methoden. 2. Auflage. Mit 7 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 2 M.)

Stöhr, Philip.—Lehrbuch der Histologie und der mikroskopischen Anatomie des Menschen mit Einschluss der mikroskopischen Technik. Dreizehnte verbesserte Auflage. Mit etwa 370 zum Teil mehrfarbigen Abbildungen und Berücksichtigung der neuen anatomischen Nomenklatur. Jena: Gustav Fischer, 1909. (Price, 9 M.)

Cramer, A.—Die Ursachen der Nervosität und ihre Bekämpfung. Referat. Braunschweig: F. Vieweg & Sohn, 1909. 1 Pp. 17.

Eschle, Franz C. R.—Ernährung und Pflege des Kindes mit besonderer Berücksichtigung des ersten Lebensjahrs. Fünfte, umgearbeitete Auflage. Leipzig: B. Konig, 1909. 1 Pp. 198.

Oppenheimer, Carl.—Handbuch der Biochemie des Menschen und der Tiere. I. Band. Mit 43 Abbildungen. Jena: Gustav Fischer, 1909. Pp. 932.

Sommerfeld, Paul.—Handbuch der Milchkunde. Mit Abbildungen und 3 Tafeln. Wiesbaden: J. F. Bergmann, 1909. 1 Pp. 1000.

Heyn, I.—Altes und Neues aus dem Gebiete der Stoffwechselkrankheiten. Leipzig: B. Konig, 1909. Pp. 81.

Huotmel, P.—Les Maladies des enfants, tome I. (Generalités, hygiène infant, maladies infectieuses.) Paris: Asselin et Houzeau. Pp. 808.

Johannsen, H.—Elemente der exakten Erblichkeitslehre. Deutsche, wesentlich erweiterte Ausgabe in 25 Vorles.

gungen. Mit 31 Figuren. Jena: Gustav Fischer, 1909. Pp. 516.

Ingerslev, E.—Französische Geburtshelfer zur Zeit Louis XIV. Mit 34 Abbildungen. Leipzig: J. A. Barth, 1909. Pp. 128.

Joteyko, J.—La Fonction musculaire. Avec figures. Paris: Doin et fils, 1909. Pp. 420.

Klemperer, Georg.—Grundriss der klinischen Diagnostik. 15., neubearbeitete Auflage. Mit 53 Figuren und 2 farbigen Tafeln. Berlin: A. Hirschwald, 1909. Pp. 292.

Kleven, K.—Die Kunst alt zu werden und jung zu bleiben. Berlin: H. Steinitz, 1909. Pp. 95.

Kraepelin, Emil.—Psychiatrie. Ein Lehrbuch für Studierende und Aerzte. 8., umgearbeitete Auflage. I. Band. Allgemeine Psychiatrie. Mit 38 Abbildungen und 1 Einschalttafel. Leipzig: J. A. Barth, 1909. Pp. 676.

Krauss, Hans.—Aus dem Gebiete der Serologie. Vortrag. Leipzig: B. Koenig, 1908. Pp. 9.

Krohne, Otto.—Aerztliche Praxis und Medizinalgesetzgebung. Zusammenfassende Darstellung der für den Arzt wichtigen gesetzlichen und behördlichen Bestimmungen und ihrer Beziehungen zur ärztlichen Praxis für Aerzte und Studierende der Medizin. Berlin: A. Hirschwald, 1909. Pp. 475.

Launay, P., et Brodier, H.—Maladies des veines et des lymphatiques. Paris: Baillière et fils. Pp. 266.

Bloch, Sophie.—Wärme und Massage. Eine schmerzlose neue Behandlungsmethode insbesondere bei akuten und chronischen Katarrhen der Atmungs- und Verdauungsorgane, sowie bei Rheuma, Gicht, Nervenübeln. Stuttgart: Theodor Nadelin, 1909. Pp. 111.

Brenning, M., und Oppenheimer, E. H.—Der Schiffsarzt. Leitfaden für Aerzte und Kandidaten der Medizin. Mit Angabe der Reedereien, ihrer Linien und Anstellungsbedingungen und Berücksichtigung aller einschlägigen Fragen. Berlin: A. Hirschwald, 1909. Pp. 79.

Liebmann, Albrecht.—Vorlesungen über Sprachstörungen. 8. Heft. Lisseln. Mit deutschen, französischen, englischen, und italienischen Uebungstafeln. Berlin: O. Coblentz, 1909. Pp. 75.

Röma, S.—Dermatologische Propädeutik. Die entzündlichen Erscheinungen der Haut im Licht der modernen Pathologie. 7 Vorlesungen. Berlin: J. Springer, 1909. Pp. 143.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases and deaths of smallpox, yellow fever, cholera and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending August 6, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Illinois—Danville.....	July 18-25.....	2	
Indiana—Fort Wayne.....	July 10-17.....	3	
Kansas—Kansas City.....	July 10-17.....	1	
Kentucky—Lexington.....	July 17-24.....	1	
Kentucky—Newport.....	July 18-25.....	1	
Louisiana—New Orleans.....	July 17-24.....	1	
Michigan—Detroit.....	July 17-24.....	1	
Michigan—Kalamazoo.....	July 17-24.....	1	
Minnesota—Duluth.....	July 17-24.....	1	
Missouri—St. Louis.....	July 17-24.....	1	
Montana—Butte.....	July 15-22.....	3	
Ohio—Dayton.....	July 17-24.....	1	
<i>Smallpox—Insular.</i>			
Philippine Islands—Manila.....	June 5-12.....	1	
<i>Smallpox—Foreign.</i>			
Algeria—Algiers.....	June 1-30.....		
Brazil—Rio de Janeiro.....	June 13-27.....	3	
Canada—Halifax.....	July 10-17.....	2	
China—Amoy.....	June 12-19.....		
Egypt—Cairo.....	June 10-24.....	3	
India—Calcutta.....	June 12-19.....		
India—Madras.....	June 10-25.....		
India—Rangoon.....	June 12-19.....		
Indo-China—Saigon.....	May 29-June 12.....	4	
Italy—Naples.....	June 1-11.....	29	
Jamaica—Bataavia.....	June 2-19.....	3	
Mexico—Mexico City.....	May 29-June 26.....		
Mexico—Monterrey.....	June 11-18.....		
Portugal—Lisbon.....	July 4-18.....	22	
Russia—Lithuania.....	July 3-10.....	1	

Places.	Date.	Cases.	Deaths.
Russia—Riga.....	July 8-25.....	25	5
Russia—St. Petersburg.....	June 10-19.....	43	
Spain—Barcelona.....	July 1-12.....	4	
Spain—Vigo.....	July 3-10.....	1	
Turkey—Constantinople.....	June 27-1-11.....	1	
Turkey— Smyrna.....	May 27-June 1.....	13	
<i>Yellow Fever—Foreign.</i>			
Ecuador—Guayaquil.....	June 1-27.....	9	
<i>Cholera—Insular.</i>			
Philippine Islands—Provinces.....	June 5-12.....	77	52
<i>Cholera—Foreign.</i>			
China—Amoy and vicinity.....	June 12-20.....	3	7
India—Calcutta.....	June 12-19.....		23
India—Madras.....	June 19-25.....	1	
India—Rangoon.....	June 12-19.....	3	
Indo-China—Saigon.....	May 29-June 12.....	5	
Russia.....	July 10-17.....	1,020	421
Russia—St. Petersburg.....	July 10-17.....	844	341
<i>Plague—United States.</i>			
California—Alameda County.....	Aug. 2.....	1	
<i>Plague—Foreign.</i>			
Chile—Antofagasta.....	June 26.....	2	
			In Lazaretto
Chile—Iquique.....	June 30.....	10	
			In Lazaretto
China—Amoy.....	June 12-20.....		210
China—Canton.....	June 5-19.....	30	
Ecuador—Guayaquil.....	June 13-26.....	9	
India—General.....	June 12-19.....	769	
India—Calcutta.....	June 12-19.....	67	
India—Rangoon.....	June 12-19.....	36	
Indo-China—Saigon.....	May 29-June 12.....	5	
Japan—Kobe.....	June 26-July 3.....	1	
Japan—Yokohama.....	June 26-July 3.....	5	
Peru.....	June 26-July 3.....	25	12

Public Health and Marine Hospital Service

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 4, 1909:

ASHFORD, F. A., Assistant Surgeon. Directed to proceed to Washington, D. C., and report to the chairman of board of medical examiners to determine his fitness for promotion to the grade of passed assistant surgeon.

BAILLACHE, PRESTON H., Surgeon. Placed on "waiting orders" from November 1, 1909.

BANKS, CHARLES E., Surgeon. Upon being retired by Surgeon E. K. Sprague, directed to proceed to Portland, Me., and assume command.

BROWN, B. B., Surgeon. Upon being relieved by Passed Assistant Surgeon R. H. Creel, directed to proceed to Vineyard Haven, Mass., and assume command.

BROWN, B. W., Surgeon. Granted five days' leave of absence from July 29, 1909.

BROWN, F. L., Pharmacist. Upon the departure of Assistant Surgeon W. M. Bryan, directed to assume charge of the South Atlantic Quarantine Station.

BRYAN, WILLIAM M., Assistant Surgeon. Relieved from duty at South Atlantic Quarantine Station, and directed to proceed to Southport, N. C., and assume command of the Cape Fear Quarantine Station.

CREEL, R. H., Passed Assistant Surgeon. Upon the arrival of Assistant Surgeon James P. Leake, directed to proceed to Louisville, Ky., and assume temporary command.

FOSTER, M. H., Passed Assistant Surgeon. Granted one days' leave of absence, July 27, 1909, on account of sickness.

HASSELTEIN, HERMON E., Assistant Surgeon. Directed to proceed to Buffalo, N. Y., and report to the medical officer in charge for duty.

HERRING, R. A., Assistant Surgeon. Leave of absence granted May 20, 1909, for one month and four days from June 5, 1909, amended to read one month and six days from June 5, 1909.

HUNTER, W. K., Acting Assistant Surgeon. Granted two days' leave of absence from August 5, 1909.

KALLOCH, P. C., Surgeon. Upon being relieved by Surgeon Charles E. Banks, directed to proceed to Memphis, Tenn., and assume command.

KNIGHT, CARLISLE P., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 1, 1909.

LAVINDER, C. H., Passed Assistant Surgeon. Granted fourteen days' leave of absence from August 1, 1909.

PORTER, JOSEPH Y., Jr., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 4, 1909, without pay.

RICHTER, H. C., Acting Assistant Surgeon. Granted fifteen days' leave of absence from July 29, 1909.
 SPRAGUE, E. K., Surgeon. Upon being relieved by Assistant Surgeon W. M. Bryan, directed to proceed to Key West, Fla., and assume command.
 STORY, H. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 1, 1909.
 WEEKS, ALANSON, Acting Assistant Surgeon. Leave of absence granted July 9, 1909, for thirty days from July 10, 1909, amended to read thirty days from July 19, 1909.
 WARREN, B. S., Passed Assistant Surgeon. Granted fourteen days' leave of absence from August 1, 1909.
 WADDIN, EUGENE, Surgeon. Upon arrival of Surgeon P. C. Kallioch, relieved from duty at Memphis, Tenn.

Board Convened.

Board of medical officers convened to meet at the Bureau, August 5, 1909, for the examination of Assistant Surgeon F. A. Ashford to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Assistant Surgeon General J. W. Kerr, chairman; Surgeon W. P. McIntosh; Passed Assistant Surgeon J. F. Anderson, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 7, 1909:

BARBER, JOHN R., First Lieutenant, Medical Corps. Relieved from duty at the Army Medical Museum, Washington, D. C., in time to proceed to San Francisco, Cal., and sail October 5th for Philippines service; granted leave of absence for one month.
 BUCHSBAUM, MAURICE, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort D. A. Russell, Wyo., in time to proceed to San Francisco, Cal., and sail September 5th for Philippine service.
 COFFIN, HAROLD L., First Lieutenant, Medical Reserve Corps. Granted an extension of one month to his leave of absence.
 COLLINS, CHRISTOPHER C., Major, Medical Corps. Granted leave of absence for four months.
 CONNOR, CLARENCE H., Captain, Medical Corps. Granted leave of absence for four months, when relieved from duty in the Philippines Division; may return to the United States via Europe.
 MILLER, EDGAR W., Captain, Medical Corps. Granted leave of absence for seven days.
 NICHOLS, HENRY J., First Lieutenant, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion. On completion, and expiration of leave of absence, will proceed to New York City for duty as attending surgeon.
 PERSONS, ELBERT E., Major, Medical Corps. In addition to present duties, temporarily assigned as assistant to Chief Surgeon, Department of the East, and attending surgeon, Headquarters, Department of the East.
 PURVIANCE, WILLIAM E., Major, Medical Corps. Granted leave of absence for twenty-five days.
 WOOLLEY, HERBERT C., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Davis, Alaska; will proceed home and then stand relieved from active duty in the Medical Reserve Corps.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 7, 1909:

ALLEN, A. H., Assistant Surgeon. Detached from the Naval Recruiting Station, Oklahoma City, Oklahoma, and ordered home to await orders.
 CURTIS, L. W., Medical Inspector. Commissioned a medical inspector from July 1, 1909.
 DONELSON, M., Assistant Surgeon. Detached from temporary duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Recruiting Station, Oklahoma City, Oklahoma.
 EYTINGE, E. O. J., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 24, 1908.
 HARLAN, T., Assistant Surgeon. Detached from the Naval Recruiting Station, Pittsburgh, Pa., and ordered to the Naval Hospital, Mare Island, California; detached from the Naval Hospital, Mare Island, California, and ordered to the Asiatic Station via California.

McMULLIN, J. J. A., Acting Assistant Surgeon. Ordered to the Naval Hospital, Narragansett Bay, Rhode Island.
 MINTER, J. M., Assistant Surgeon. Ordered to the Naval Recruiting Station, Pittsburgh, Pa.
 MUNGER, C. B., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 7, 1908.
 MURPHY, J. F., Passed Assistant Surgeon. Ordered to the Naval Hospital, Las Animas, Colorado.
 RODMAN, S. S., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Indianapolis, Ind., and granted leave of absence until September 25th. Orders of July 27th detaching from the Naval Recruiting Station, Indianapolis, Ind., and ordering to the Naval Recruiting Station, Boston, Mass., revoked.
 SHAW, H., Passed Assistant Surgeon. Detached from the Naval Station, Culebra, W. I., and ordered to the Navy Yard, Washington, D. C.
 WILSON, H. D., Surgeon. Detached from the Kentucky and ordered to resume other duties.

Births, Marriages, and Deaths.

Born.

ZALESKY.—In New York, on Thursday, August 5th, to Passed Assistant Surgeon William J. Zalesky, United States Navy, and Mrs. Zalesky, a daughter.

Married.

ATHEY—WILMER.—In Baltimore, Maryland, on Monday, August 2nd, Dr. Caleb W. Athey and Miss Helen Skipworth Wilmer.

DATTLEBAUM—KLEIN.—In Brooklyn, New York, on Sunday, August 1st, Dr. Maurice J. Dattlebaum and Miss Belle May Klein.

Died.

COLLINS.—In Portland, Oregon, on Sunday, July 25th, Dr. E. A. Collins.

DOANE.—In Elmira, New York, on Monday, August 2nd, Dr. William C. Doane, aged eighty-three years.

DONNELLY.—In Minneapolis, Minnesota, on Saturday, July 31st, Dr. Ignatius Donnelly.

DOWKONT.—In Brooklyn, New York, on Saturday, July 31st, Dr. George D. Dowkontt, aged sixty-six years.

FITTS.—In Martin, Tennessee, on Wednesday, July 21st, Dr. M. H. Fitts, aged sixty-seven years.

FORBES.—In Chicopee, Massachusetts, on Friday, July 30th, Dr. H. G. Forbes, aged sixty-eight years.

FULLERTON.—In Portland, Oregon, on Saturday, July 31st, Dr. Erskine B. Fullerton, of Columbus, Ohio, aged sixty-seven years.

HAGEY.—In Mount Morris, New York, on Tuesday, August 3d, Dr. Jacob M. Hagey, aged seventy-seven years.

HEYWOOD.—In New York, on Friday, July 30th, Dr. George Heywood, aged fifty-four years.

HUNKING.—In Hampton Beach, Massachusetts, on Friday, July 23d, Dr. C. Dustin Hunking, of Haverhill, aged fifty-nine years.

HUNTER.—In Norfolk, Virginia, on Thursday, August 5th, Dr. Henry T. Hunter, aged sixty-nine years.

MARVIN.—In Chautauqua, New York, on Thursday, July 29th, Dr. A. H. Marvin, of Cleveland, Ohio, aged forty-two years.

MAYS.—In Philadelphia, on Sunday, August 1st, Dr. George Mays.

MENGER.—In Philadelphia, on Tuesday, August 3d, Dr. Edward F. Menger, aged fifty-one years.

MORTON.—In Long Beach, California, on Saturday, July 17th, Dr. Bowditch Morton.

PURDY.—In Ithaca, New York, on Sunday, July 25th, Dr. Mark S. Purdy, aged fifty years.

SCHLEIFENHEIMER.—In Reading, Pennsylvania, on Friday, August 6th, Dr. Carl Schleifenheimer, aged eighty years.

SOUTHALL.—In Jetersville, Virginia, on Monday, August 2nd, Dr. Joseph W. Southall, aged seventy-seven years.

STAFFORD.—In Perth Amboy, New Jersey, on Tuesday, August 3d, Dr. James Stafford, aged forty-eight years.

WARNER.—In Mankato, Minnesota, on Sunday, July 25th, Dr. C. F. Warner, aged seventy-seven years.

WILSON.—In Lincoln, Illinois, on Tuesday, July 20th, Dr. Robert M. Wilson, aged sixty-two years.

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LEPROSY.

*With Special Reference to the United States, Our Colonies, and Near Neighbors, the Bahama Islands.**

By C. A. PENROSE, M. D.,
Baltimore.

The very kind appreciation which my address before The Maryland Auxiliary Society to the leper missions in India received, both from the public and press, has induced me to offer this paper for publication where it would be read more by the general reader.

I believe, in a condensed form, this article has given a very complete presentation of a subject that the world at large is alarmingly ignorant of, and trust it will serve as a warning to a too apathetic public.

If we do not recognize the surprising increase of leprosy in recent years, especially in our country and her colonies, and take proper means to prevent this, we may, in the future, have to contend with a serious epidemic such as occurred in the middle ages.

Our government must cooperate with the other powers, in the proper segregation and isolation of lepers. They must, as in ancient times, but more humanely and considerably, prevent such a possible calamity.

In addition, this paper is a plea for the poor leper himself who has received, although afflicted with the greatest curse mankind is heir to, such severe and unjust treatment in the past that he must feel constrained to hide his malady as long as he is able and thus increase the danger of spreading the disease to those who know nothing of his terrible secret.

I have quoted largely from several sources in the first part of my paper and from an article written by me some years ago on Sanitary Conditions in the Bahama Islands, published by The Macmillan Company, New York, in a large work, *The Bahama Islands*, the achievement of the Bahama Expedition of 1903.

The question immediately asked one who has had any association with the dread disease leprosy is, Is it not contagious? Then, were you not afraid of catching it? The truthful answer to both questions would be, it is contagious and we are afraid

of catching it, and therefore, take proper precautions when thrown in contact with it, as it is right we should do.

The terrible disfigurement, the terrible brand put upon the poor unfortunate thus afflicted, makes it at once the most gruesome, I might say the most tragic, of all diseases. Its tardy development, its slow, cruel course,—slow yet relentless in its progress,—renders the unhappy object of its attack an invalid for years, and yet cut off by the terrible nature of his affliction from relations and friends, sympathy and charity, and a number of things, both great and small, which make the journey through life, even for a well person, less of a trial.

Before discussing my own personal experience with leprosy, I will just in a general way describe it from a historical standpoint; its geography, with special emphasis on leprosy in the United States and our colonies; then, what the world is doing to combat it; what leprosy is, the types of leprosy and its transmission, etc.

No less an authority than Professor Paul Haupt told me that the descriptions of leprosy in the original manuscripts of the older writings do not correspond with our modern conception of this disease; either many other skin diseases, such as psoriasis, leucoderma, and untreated parasitic diseases, etc., were grouped together as one disease or probably leprosy is less ancient than we may suppose.

The word "sāra'ath," translated leprosy, which occurs so frequently in *Leviticus*, XIII, probably includes several diseases,—especially where it refers to diseases cured in several days, which of course could not be leprosy. In leprosy people do not become snowy white, and descriptions like these refer to severe cases of psoriasis, or leucoderma, the common leopard boys of our circus sideshows.

The ancients, however, regarded Egypt as the country whence leprosy originally came, and the *Talmud* tells us that Pharaoh (Rameses IV), king of Egypt, was smitten with leprosy, and on this account, when he died, was buried in the field of kings and not in a tomb in the Pyramids for fear of defilement. Leprosy was probably endemic among the Hebrews when they migrated from Egypt; king Uzziah or Azariah, king of Judah, B. C., 810-758, also died of leprosy.

Herodotus spoke of leprosy in Persia, while Pliny implies that it was introduced into Greece and Italy by Pompey's army returning from Syria. The disease afterward appeared in the Roman colonies of Spain, Gaul, and Britain.

*Read before the Maryland Auxiliary Society to the Leper Missions in India, November 19, 1908, and the Johns Hopkins Hospital Medical Society, December 7, 1908.

In the seventh century the Lombard king Rothar made laws regulating the marriage of lepers. So did Pepin and Charlemagne. Leper houses exist-



FIG. 1. Tubercular leprosy in advanced stage.

ed in the seventh century at Verdun, Metz, and Maestricht, in the eighth century at St. Gall, and in the eleventh at Canterbury.

During the crusades (1096-1271) it grew into an epidemic in western Europe, and attacked even royalty and the better classes in great numbers. Religious leper houses dedicated to St. Lazarus (from whence the name lazaretto) and to St. George became necessary throughout Europe.

Mathew Paris said the total number of such places became as high as 10,000, and those in France alone 2,000. *This is almost beyond belief.*

Sir J. Y. Simpson estimated that *ninety-five* first class institutions were in England alone, and others also in Ireland and Scotland. The isolation of lepers was enforced by law and popular sentiment. They wore, in those times, long grey gowns with hood over the face, and carried a wooden clapper to give warning of their approach. They were forbidden to enter inns, churches, bake houses, or touch healthy persons, or walk on narrow foot paths.

In 1392 Robert Bruce, king of Scotland, died of leprosy.

Holbein, the great German artist, painted at Augsburg in 1516 St. Elizabeth giving bread to a prostrate group of lepers, which the great Virchow said were undoubted cases of leprosy, and probably studies from the leper house at this place.

In the fifteenth century the disease declined, although a leper house was founded at Edinburgh as late as 1591, and almost disappeared from Europe in the seventeenth century, the last known leper died in 1741 in Shetland, and since then occasional cases have appeared, brought from the outside.

Survivals of this great mediæval outbreak are found on the west coast of Norway, in the Baltic provinces of Russia, and on the coasts of Spain and Portugal, etc., so we see that leprosy is by no means a tropical disease or confined alone to warmer countries.

Dr. Clemow, in his book on the geography of diseases, gives an excellent map of the entire world, showing, marked in red, that leprosy occurs, *occasionally*, almost everywhere, and in a *surprising number of places is present all the time*. I will give an incomplete list of these latter places with the number of lepers present in some of them, either official (this is, reported cases) or suspected cases.

India has officially over 100,000 and probably 250,000; China about the same, one per cent. of the population in parts; Africa probably thousands. Egypt about 2,058; South America probably thousands, British Guiana above 1,000; Norway, 2,000; Russia 2,000; the Hawaiian, or Sandwich, Islands thousands (officially 1,000 confined in a single colony); Trinidad 860; the United States about 530, officially 278. Canada officially thirty-two in one colony. In addition, thousands of lepers are found along the Sicilian coasts and on the coasts of Spain and Portugal, along the Caspian Sea, the delta of the Volga, along the Black Sea, and in the islands of the Levant. It is also common all over the East



FIG. 2. Incipient tubercular leprosy. Early stage on cheek in a boy of seven years of age.

¹ *Transactions of the American Society for the Study of Leprosy, published in 1904, p. 10.*

from Syria to Japan and Kamschatka, Madagascar, Mauritius, Isle de Bourbon, St. Helena, the Madeira Islands, Canaries and Azores, the West In-

by the character of the pest houses and prisonlike leprosaria which exist here."

This is the keynote to the situation, had we proper places for these poor people, with proper treatment, perhaps the unfortunate trained nurse, who had leprosy and nursed in some of the best families in Baltimore, a few years ago, and, actually while the disease was present, might not have remained in hiding, like a poor wounded animal, but have received the assistance openly that her condition required, without risk to other people.

The leprosy commission obtained official information of 278 cases of leprosy in the United States, seventy-three per cent. of which were at large, and only seventy-two provided for by the States or cities in which they were located. One hundred and forty-five were born in the United States, 120 in foreign countries, and thirteen of unknown origin. They found positive evidence that many of these persons became infected while in the United States. Twenty-two of the cases came from Norway, eleven from Iceland, eight from Sweden, twelve from Germany, twelve from the Bahamas (note this point, a large percentage from such a small country), six from Cuba, four from other West Indian islands, three from Mexico, six from Ireland, three from England, three from France, three from Italy, and one from Spain.

Considered from the standpoint of the States in which they were found, Louisiana furnished 155; California twenty-four; Minnesota twenty; Florida twenty-four; North Dakota sixteen; New York seven; Illinois, Missouri, Mississippi, five each; and other States a less number or none at all.

The commission further recommended the estab-



FIG. 3.—The carpenter mentioned in the paper, of Hopetown, Abaco, in advanced stage of anæsthetic leprosy, showing facial paralysis and loss of fingers and toes.

dies, Central America, Mexico, Iceland, and many other places to an uncertain extent where it is impossible to give figures, from lack of sufficient information.

We see, then, from a study of its history and geography, that leprosy is present *everywhere*, as a *menace*, and can become, as it did in the Middle Ages, a very serious epidemic, unless carefully segregated and isolated. We read from time to time, indifferently, about this or that case occurring in our own locality, and scarcely credit the fact that thousands of miserable wretches are living and suffering from leprosy in sections of the world, as a result also of local indifference and apathy, and that statistics are showing an alarming increase in this disease in certain localities with a tendency to spread, wider and wider.

I will now consider the problem of leprosy in the United States, our colonies, and near neighbors, which will come possibly a little more home to us.

Congress appointed March 2, 1899, a commission, under the auspices of the Marine Hospital Service, to study leprosy in this country, whose report I was able to obtain, and from which I will have to quote largely, as we have no other reliable sources of information on this point.

This commission in its report says, "It is impossible to discover all the cases in the United States at any one time. Owing to the loathsome nature of the disease there is an inclination on the part of the patient to conceal the affliction, a desire, heightened



FIG. 4.—Woman at Hopetown, Abaco, in advanced stage of anæsthetic leprosy, showing loss of fingers.

lishment of two national leprosaria, under the supervision of the Federal government, and suggested proper sites for them.

Now *what* has been done in this country to prevent leprosy and better the condition of our lepers?

In 1897 The International Leprosy Conference was held in Berlin, at which were present all the experts on this disease. The result of this meeting was, in brief, that leprosy was a contagious disease; that it should be isolated and proper care and pre-

spot until 1805, when the building was torn down for fire wood by a band of itinerant Indians who camped on the ground." As eighty cases were admitted to the charity hospital at New Orleans during the year of 1878, the public became less apathetic, and the Board of Health, after two years of indecision and delay, consigned thirty-seven cases to a pest house in the suburbs. So many new cases, however, occurred in the *neighborhood* of this house and such mismanagement existed, the au-



FIG. 1. Group of lepers, with attendant physician, from the lazaretto at Nassau arranged to show the transitional, tubercular type, mixed type, and anæsthetic type.

cautions taken with those thus afflicted. They endorsed the system of obligatory notification as practised in Norway.

The first leper came to this country during the Spanish régime (after the French and Indian Wars) and settled in Louisiana. "In 1786 so many lepers were begging in the streets of New Orleans, the authorities rounded up about forty and placed them in an old building on a high strip of land called Metarie Ridge, just west of the city and surrounded by swamps,—leper land, as it was called. In fifteen years' time all the lepers had died off or escaped, and it remained a wild, desolate looking

thorities decided to move the lepers to their present location at Iberville (a creole parish named after that great adventurer). This leper colony is located 80 miles above New Orleans on the east bank of the Mississippi. The river boats pass it in the early morning and so few ever notice it. "The lazy plantation negro gets a gait on his mule when he passes it, filled with superstitious dread." It was a beautiful southern plantation before the war, but was deserted and unknown to all but the creoles of Iberville until 1894, when it was renovated and fixed up for the mournful little procession of lepers who marched from the old pest house. It is now a leper

colony of the first class and the *only one* of its kind in the United States, unfortunately.

The settlement consists of about fifteen acres enclosed in a high fence, on three sides a forest and one the large river, two long rows of cottages (originally slave quarters) are used for the inmates—the men in one row, the women in another—between the men's cottages a vegetable garden, in which the able bodied work, between those of the women a flower garden. The patients are attended by four sisters of charity and a Miss Dehan (not a sister), who, noble women, gave their lives voluntarily to do this work. The mother superior of the order would not order the sisters to this mission, although many said they would go if commanded, but could not volunteer for such fearful work. A priest is also assigned to serve there, but for short periods only, and as yet, none have contracted the disease. They live apart from the lepers and wear gloves when attending, or waiting on them. The identity of all confined in this place is kept a secret, according to one investigator, who was introduced to two very beautiful young and cultured ladies, both of whom wore gloves and were, of course, *hopeless lepers*. They talked cheerfully, without reference to their sad fate, and passed the time reading to, and helping, those less able to do for themselves.

The life in this institution is easy, the patients are well cared for, and everything is done to make them contented. They never complain, but await the inevitable end with un-falling sweetness and tenderness. They are all devoutly religious, and marriage is not permitted.

There are now thirty-two lepers in the colony and only seven negroes, although leprosy in Louisiana is more common among this race than the whites. It is estimated that about 200 are at large, contrary to the State law that *all lepers* must be confined. "Only one case ever ran away and he, a young lad, wrote an affectionate note to the sisters, thanking them for their kindness, and saying he was bound for the Sandwich Islands, where there was more scope for one afflicted as he was."

How sad that other States, like Minnesota and California, who let their lepers run at large and make no provision for them, do not follow such a good example. What a pity that Louisiana, with such an ideal home for lepers and such a *good law*, does not enforce it.

State rights may be all very well in some things, but are all wrong when leprosy is considered. The task of getting rid of this terrible disease becomes very difficult, if not impossible, with some States not isolating their lepers, others partially so, and some so cruel to the leper when discovered—owing to poor facilities, etc.—that he would rather, as long as possible, hide or conceal his malady. A leper, secretly, may now leave one State and go to another where laws are more in his favor, and thus increase the danger of spreading the disease. The Federal government should have absolute control of such conditions, and we hope congress will, eventually, pass the bill for a national leprosarium, which has been up two or three times in the last few years. This is especially important, as we have recently annexed so many lepers, first, in the Hawaiian Islands and now in the Philippines.

"The treatment of lepers who run at large in this country is often most distressing. Dr. A. W. Hitt, of Chicago, tells of a poor leper lassoed by a marshal in an Indiana town and tied down like a mad steer, and of two girls with leprosy in Ohio hauled fifty miles through the country to the cry of 'Unclean,' as in the time of Moses, and compelled to sleep on the floor of a dissecting room in a medical college." The cases of the three lepers in Bal-

timore and the recent one in Washington, John R. Early, of North Carolina, were most pathetic, and the sad fate of General Waddell's wife in the west, especially so, and quite fresh in our minds from recent articles in the newspapers.

And now, having shown the status of leprosy in the United States, I will speak briefly of some of our colonial possessions.

In *Key West* we have about twenty reported cases (how many not reported, it is hard to say) without any provision being made for them other than treatment like vermin and a general avoidance and aversion.

In the *Sandwich, or Hawaiian, Islands*, there are many cases, some say one leper to every thirty well persons. The disease was probably brought from China about 1848 and is called by the natives "mia-pake" or Chinese disease. It has increased *very rapidly* ever since its first appearance. The government is striving *now* to combat this. At present there is a receiving station at Kalihi, on the island of Oahu. Here all suspected cases are passed upon by six physicians, who constitute a leper board, in which board is Dr. L. F. Alvarez, of international reputation. When a positive diagnosis is made the case is sent to Kalawao, the first and smaller leper settlement, or to Kalaupapa, the larger and more recent settlement—both being on the north side of the island of Molokai, and separated from each other by the extinct crater of the volcano Kahukoo. There are about 300 or more lepers in the small settlement and over 600 in the large. At Kalawao, the large hospital and Baldwin Home for leprosy boys is situated, at Kalaupapa the Bishop Home for leprosy girls. These settlements, which in reality are one, being close together, are the most complete of the kind in the world, having hospitals, churches, stores, markets, jails, etc. The lepers have a liberal allowance, or ration, from the government, and cost about \$67,000 a year; other expenses, including the receiving station and transportation of lepers amount to about \$16,640 a year.

In Honolulu there is a home, the Kapiolanie Home, for nonleprosy children of lepers, and recently in Kalaupapa a home for helpless lepers (i. e., advanced cases)—Sea View House—has been erected.

At Kalawao is located a church in memory of Father Damien who came to this settlement in 1873, a Belgian of thirty-four, and of fine physique. In 1884 he began to have rheumatic pains in the left foot. Dr. Arning, an expert, studying leprosy in the colony, was consulted, who diagnosed the case as leprosy. Six months later a nodule appeared on the left ear, and later the infiltration of the forehead and cheeks, loss of eyebrows, etc. He died a leper.

Molokai can accommodate practically an *unlimited* number of lepers and is, therefore, an ideal place for a national institution.

In the *Philippines* there is much leprosy, but as yet there are no authentic statistics that I know of.

In *Canada*, which is interesting, being so close to us, there is a leper colony at Tracadie, New Brunswick, in which there are about thirty-two lepers. They receive good care and treatment.

And now for the study of leprosy as a disease.

Leprosy (*Lepro Arabum*, or *elephantiasis Græcorum*, a misnomer, being distinct from elephantiasis) is due to the action in the human tissues of the leper bacillus discovered by Hansen in 1873 and Neisser in 1879. It will not grow on artificial me-

Dr. Alvarez thinks the common house fly, mosquito, and bedbug transmit leprosy. He found leprosy bacilli in the bodies of mosquitoes who had bitten lepers.

Probably one of the most common sources of contagion was through improper vaccination and uncleanly shaving. Mr. William Tabb reported sixty children in India, out of a class of 150, infected with leprosy by vaccination from individual to individual and not by our modern method,—using cows' lymph.

In Hawaii Dr. Alvarez inoculated a condemned murderer, Kenan, with leper tissue, who died six years later of leprosy. Unfortunately, it was found that leprosy existed in Kenan's family and this rather spoiled the interesting experiment. Some people seem almost immune to leprosy, as, for instance, the extraordinary case of a washwoman at Molokai, who, without becoming infected, washed leper clothing for years and had two husbands who died of leprosy, and then a man in the same place had a leper wife and fourteen children by her, in none of whom leprosy developed. On the other hand, there was an instance of infection of a man, a carpenter, handling a hoe for a few minutes that a leper was using, and the sad case of Father Damian, already



FIG. 6.—View of the lazaretto, at Nassau, the only Government house for the poor lepers on the entire Bahama group, which will hardly accommodate eight patients.

dia, although recently Dr. Alvarez believes he has gotten slight growths on blood serum. It resembles in many ways the tubercle bacillus, is about the same size, looks like it, and takes up certain stains in much the same way. Although the bacillus of leprosy is generally accepted as the cause of leprosy the condition under which it develops and invades the human host are still unknown.

Experience and observation are against the theory of inheritance of leprosy, healthy children, generally, being born of leprosy parents, who later are attacked by the disease unless taken away from their homes. Some have believed a fish diet predisposed toward leprosy, but Dr. A. W. Hitt shows that in India the Kabirpauthis, a sect the members of which do not eat meat or fish, show the highest ratio of lepers, and the Jains, who never do either, the lowest, and he concludes that, therefore, nothing is gained by classifying lepers according to their religious beliefs or castes. In his own experience he finds a diet of milk and fish is not good for lepers and that leprosy increases with an increased rain fall; hence, the advantage of a dry climate for a leper colony.

Surgeon D. A. Carmichael, in his report on leprosy in the Hawaiian Islands, speaks of kissing, nose rubbing, cohabitation, and the reception of the secretions on abrasions of the surface of the skin, breathing, eating, and the transmission by insects of infection, as possible methods of communication.

quoted.

Dr. A. W. Hitt mentions the case of a Miss Mary Reed, an American missionary to India, who, while home on a vacation, with her parents in Ohio, was attacked with leprosy, and tells of a Mr. Thomas Jackson, a clerk in an Indian railway station, who had never been in contact with a leper and yet acquired the disease,—probably from handling contaminated money given in at the window of the depot by natives. So we might go on and multiply examples of the variable behavior of this odd disease.



FIG. 7.—View of typical home of colored people, where lepers are often found living with well persons.

There are two chief forms of leprosy, the tubercular (*lepra tuberosa* or *tuberculosa*), and the anæsthetic (or *maculoanæsthetic*).

The tubercular is the most virulent and disgusting of the two forms, and the average of life is between nine and ten years. In this form the infection probably takes place through the skin or mucous membranes. It may incubate for months or years and then start in with the appearance of reddish brown patches on the skin of face, back of hands and feet, with fever, general malaise, and rheumatic pain, etc. Later nodules are formed along the extensor surfaces of the arms and legs, on the face, lobes of ears, cheeks, nose, and forehead, the eyebrows are lost, and the countenance assumes a leonine appearance. The fingers and toes, hand and feet become thickened and swollen; later, the nodules may break down and ulcerate and are found to contain myriads of leprous bacilli.

In the anæsthetic variety the favorite points of attack are the facial nerve of the face and the ulnar nerve of the arm and perineal nerves of the legs, with resultant paralysis, and withering of the muscles supplied by these nerves and lack of sensation of the parts affected. (Hence, the name anæsthetic a leper often burning his hands or feet without knowing it, when thus affected.) In the severe cases the fingers and toes and even entire limb may be lost. The hands when affected contract and give rise to what is called the clawhand, from its resemblance to a bird's claw (*main en griffe* of the French). The average of life in this type is about from eighteen to nineteen years, depending, however, on the climate, etc.

Later, in both forms of leprosy, the internal organs are invaded, and unless some fortunate terminal disease ends his life more quickly the poor leper dies, a most revolting mass of humanity.

The two forms are often blended in the same patient and is then called a mixed type or mixed leprosy.

My own experience with leprosy began in 1903, when Mrs. Mary Sanzone was admitted to a ward in the Johns Hopkins Hospital, in which I was in charge. She was a typical tubercular leper of an advanced grade and came from Alleghany, Pa., with her husband, who deserted her when he knew she was a leper, and quietly disappeared, fearful of incarceration also. At the age of fifteen she had lived in Demerara, British Guiana, and here she probably became infected. She was a patient, good natured soul and took her hard fate with a great deal of philosophy. She gave me her photograph, before becoming leprous, and was evidently then a very nice looking girl. She could only speak in a hoarse whisper, the larynx being involved, in a way peculiar to this disease. A year or so later she died from leprous involvement of the kidneys, and was quite insane from this cause before her death.

My next and broader experience with this disease was in the Bahama Islands, while in charge of the medical work of the Bahama Expedition—the result of Baltimore enterprise. This expedition succeeded in publishing a conglomerate report, in the shape of a large volume, on these islands, which were, up to this time, absolutely uninvestigated from a scientific standpoint, although the nearest (Great

Bahama) is only some miles (fifty or more) off our southern coast (the coast of Florida). The Bahamas extend, however, for several hundred miles out into the great Atlantic. In view of our propinquity to these islands, and our commercial relations, getting sponges, rope, pineapples, etc., from them, this book received very favorable international recognition and comment and repaid the director, Dr. George B. Shattuck, through whose untiring labor the expedition was organized—or I might say floated—for all his trouble and personal sacrifice.

This expedition was unique from the fact that almost every branch of science was represented—bird and fish experts and soil survey men were loaned by the government, different departments of university work were represented, Dr. Fassig, our Weather Bureau man, also joined us, and Frank Gilmore, the former leading man of the Lyceum Stock Co., was our photographer and assistant in many ways. We had an artist to paint fishes, and in the tropics this requires many colors, a mosquito expert, and a medical corps of five men, in which we will now be especially concerned.

Our expedition was backed by the Geographical Society of Baltimore, the Johns Hopkins University, the Bahama government under Sir Gilbert Carter (a good friend to us), and by private subscription.

The Bahamas were selected because, as I mentioned before, they were unknown from a scientific standpoint and would offer very unusual advantages for an expedition like ours. Situated as the beautiful little coral islands are, extending well out into the Atlantic for almost 700 miles, often widely separated from each other by an expanse of ocean or even more isolated by their dangerous shoals, which the wary mariner tries to avoid, they represent little units in which most interesting problems can be separately studied.

As different islands are inhabited by descendants of different races, Spanish (formerly pirates), English, Americans, and negroes, one can study racial peculiarities under similar tropical conditions and varying conditions of civilization, as, for instance, the refinement and culture of Nassau, the capital of New Providence, and the almost barbarous Andros, the largest of this group of islands, inhabited by several thousand blacks and practically no whites. Five of us penetrated into the interior of this island and had some very interesting adventures.

In certain of the islands the whites have totally excluded the blacks and in others, the blacks the whites to a great extent, and between these two extremes we find islands with every mixture of white and black blood. This enables us to contrast the immunity of the whites, blacks, and mulattoes to about the same conditions.

In some of the white colonies, where black blood was entirely excluded, intermarriages and hard conditions of living have produced the greatest nerve degeneracy, as, for instance, at Spanish Wells, off the coast of Eleuthera (founded by Spanish pirates), and especially at Hope Town, off the coast of Abaco, founded by Tories of excellent stock who fled from South Carolina during the Revolution. This degeneracy is manifested by insanity, idiocy, congenital blindness, *tabes dorsalis*, physical deformities, etc.

I made, with the assistance of Mr. Gilmore, a family tree of Hope Town, which is most interesting.

There are a number of other conditions appealing to medical men in these islands, and one deserving of mention is the rare disease, filariasis, a disease due to a little worm found in the circulating blood, usually only at night. The filaria is the embryo of a larger worm living somewhere in the deeper structures of the body, which if injured by a blow or any mechanical cause, lays or rather aborts eggs, instead of the embryo filaria, and these eggs, being too large to pass through the small lymph vessels, obstruct them and produce the real elephantiasis, where the limbs of the patient become greatly enlarged and are likened to an elephant's. All this and more is why I was persuaded to interrupt the even tenor of a general practice and take a trip of several thousand miles, in a two masted schooner, of only 100 tons burden.

Last, but not least, we understood that leprosy was quite prevalent and we were most anxious to study this interesting but terrible disease again.

Owing to the rarity of a doctor's visit to many of these islands, often a most trifling condition would assume alarming proportions, as, for instance, a bad tooth, by neglect, giving rise to serious necrosis of the jaw bone, etc., or a neglected boil to some terrible infection.

The service our medical staff was able to render hundreds of these poor, helpless people through medicines, food supplies, and very necessary advice more than compensates for the hardships endured. Our research work was, however, much interrupted by having to attend to the needs of the suffering natives, who at such times would accord us the greatest ovations, following us in the streets, kissing our hands and calling from their houses, and swarming in boat loads about our vessel. When we returned home I could not help remarking to one of our men, as we walked up Baltimore Street: "How I miss the usual adoring crowd."

On a scientific expedition to a tropical country there is no department in which more care must be taken than in the medical. In addition to the work proper, we have the health of the party and the sanitation of the ship, etc., to consider, often under trying circumstances. We are justly proud of the fact that all of our men returned well, although working in the hot sun of a tropical summer and often exposed for days to wind and weather—not to mention diseased conditions.

Our medical equipment was unique in its completeness. Every necessary surgical appliance and instrument was taken, a very efficient dispensary of medicines and many preserved foods, etc., all the standard antitoxines, over 2,000 culture tubes for growing bacteria and living cultures of typhoid fever, Malta fever, the Shiga bacillus of Japan, Philippine dysentery, etc., for blood tests and contrast.

This mass of material was arranged to be represented in two chests, which were quite portable and made of tough wood fibre and called respectively the medical and surgical chests. The trays and drawers of these chests were numbered, so that when emptied they could be filled from stock boxes with a corresponding number and thus avoid confusion or delay.

To facilitate our work among the natives we adopted the following method. As soon as we anchored at a settlement the medical outfit was rowed on shore in the yawl, or towed in by the launch, and a temporary free dispensary quickly established in some convenient building, such as an unoccupied cottage, schoolhouse, or magistrate's office, if they boasted such, or oftentimes just on the open beach, sticking the medical flag, as a signal of the clinic, into the sand near the chest. While a portion of the staff made preparations for the clinic, others were sent through the village to spread the news that the doctor was in town and prepared to give free consultations and medicine. The people in some way generally heard of the expedition, even in remote islands, before we arrived.

At first there might be little response, but after a few, more courageous than the others, were treated and especially if with some apparent success, the more timid would follow and our clinic would grow too large often to really be handled with any degree of satisfaction.

At one place, where I restored a girl's hearing by removing impacted wax from her ears, it was considered almost a miracle. I shall never forget the young girl's face—a white girl at Spanish Wells—when she found that she could hear again. The crowd afterward became so large and so clamorous for treatment we had to stop the clinic and literally fight our way to our boats, even being followed out to sea and to the schooner deck by the pleading natives, some of whom were quite ugly because they had not been treated or received a present of a pill or so. Occasionally we would hold impromptu clinics on the schooner deck, but never if we suspected any leprosy to be present among the applicants for treatment.

In these clinics one assistant would select the cases, especially the serious ones, another examine the blood, another take the history and another write down my examination from dictation. In this way we saved time and could cover more cases in a short space.

I wish I had the time to discuss in detail many of our experiences and investigations of other diseases, but this paper is concerned with leprosy, which is far too exhaustive a subject in itself for one paper.

On the first of June, 1903, we sailed from the port of Baltimore in our little schooner, the *Van Name*, crowded with thirty-four men and every kind of scientific paraphernalia. After a very eventful cruise of eleven days (being caught in the bad weather which wrecked so many vessels in the Spring of 1903 and almost wrecked us) we reached beautiful Nassau harbor. Here we let our very, very seaisick ones recover, and then in a day or so the real work of the expedition began and here we had our first introduction to the Bahama leper.

At Nassau we found the only *lazaretto* in the Bahamas—a miserable little building which at best could accommodate hardly a dozen patients. Lepers came there of their own free will, the government having no laws regarding the isolation of lepers and no facilities if they had. I have brought this fact out prominently in my report in the Bahama book and hope it will have some effect on the home government in England.

Here we met Dr. L. D. Parsons, a fine, young

Scotchman, who is in charge alone, think of it, of the hospital, insane asylum, and leper house, with only one white nurse and a few negro attendants. The doctor permitted us to examine the cases of leprosy in the lazaretto, which we found were rather advanced types of both the tubercular, the anæsthetic, and mixed forms. We studied eight patients confined here—about all that could be accommodated—and were told several other cases reported at irregular intervals, when they needed any special treatment, etc. They are allowed to leave the hospital when they desire and mingle with the other natives quite freely, who seem, indeed, very little afraid of leprosy. As the water supply is derived entirely from shallow wells and cisterns, the opportunities for cleanliness are very limited.

In other islands, Eleuthera, Watlin's, and Abaco, etc., we found the greatest indifference displayed by the natives toward this disease, a leper often living in the same house, with apparently healthy individuals, without any precautions being taken by the other members of the household and even preparing their food and sitting at the same table.

One day, while cruising off the coast of one of these islands, admiring the beautiful colors shown by the waters in the harbor, which vary from every shade of ultramarine blue to green, gold, and yellow, a native boat approached and was thrown a line by one of the crew, anxious to get some fresh fruit for his dinner. I happened to glance at a native who was climbing up the side of the vessel and saw at once that he was a leper. As we never permitted them on board, he was promptly ordered back into his boat, much to his disgust, holding up in both hands samples of his wares with which to tempt us. Two or three other men, apparently not lepers, were with him, but *he* seemed to be evidently the boss of the party.

While at Rum Key a little boy was brought to me (about seven or eight years old) with a slight nodular patch on his cheek, which I diagnosed as leprosy, this was doubted by the magistrate and others on the island, who said leprosy was very rare in one so young. The boy had only recently been brought over from Watlin's Island, where his relatives lived. When we subsequently visited that Island we looked up his family and found leprosy in it, confirming the diagnosis.

At one of the settlements at Eleuthera we found a very pathetic case, one which I had heard of before leaving Baltimore, and in fact was asked to look up and determine if it *really* was leprosy. The patient was a young white boy (of fourteen or fifteen years), the son of excellent people, who had considerable means and influence in the colony. The boy's father came for us after we had finished holding a large clinic in the main village and escorted me with an assistant to his attractive home at some distance from the town. The boy lived in an outhouse, but was brought into the father's parlor for examination. I well remember the scene, the anxious parents (the mother had also entered the room) with drawn and whitened faces awaited our decision while we examined the boy. He was a typical tubercular leper of an advanced type. We examined him by lamp light, an unpleasant thing to do, owing to the mosquitoes which you can well im-

agine we brushed away, but it was now dark and we were anxious not to be mistaken. A glance, however, would have been sufficient, his parents must have known he was a leper, but, poor souls, he was their only child and they wanted a confirmation of even their fears or positive belief. *What could be more terrible for them—unfortunate people!*

At Hoptown, Abaco, I found another sad case: A young man, a carpenter by trade, afflicted with leprosy and living in a degenerate colony, which I have mentioned before, and waited upon by his aged mother. He was a *carpenter* yet had no fingers or toes and held his tools, as he showed us, between the two stumps, that served as hands. His poor old mother stood by, railing at a ship's doctor who had some years before our visit diagnosed her boy a leper. She told, in loud tones, the curious crowd standing around, that now they would see that her darling boy was *no leper*, that the governor had sent us to say it was not true. Poor old soul, she was unbalanced mentally on this subject, and who can wonder at it? He was a typical anæsthetic leper. We took his photograph and hurried away from the raving old mother. We could tell her the truth. What was the use? What could be done if we did?

At the same colony we found another anæsthetic leper—a rather sweet faced woman, who lived by herself (how, it is hard to imagine), but as everyone is more or less related in this colony they probably help each other while they can; in fact, Russell and Malone and Key are about the only names one hears in Hope Town.

Thus I could go on and multiply such sad experiences.

At almost every settlement we found a leper or two, and this was but a small percentage of the true number, as lepers are naturally very shy, and would seldom come in any number to our clinics, but would have to be sought out and visited at their homes. This desire to keep to themselves makes it easy to isolate them when they are sure of proper treatment by the authorities. Sooner or later they must become unable to help themselves.

In view of what has been stated, as the Bahamas are so suitable in many ways for the establishment of national or international leprosaria, owing to the climate, tropical beauty, and number of uninhabited islands, etc., we recommended the people of the Bahamas to arouse themselves and with the assistance of the mother country grapple with this important problem. First, seek out and isolate all lepers, but do it considerately; second, set aside two islands, one for the detention of suspected cases and the other for the permanent isolation of developed lepers; third, equip those islands with the most modern facilities for studying and coping with this disease; fourth, in the island set aside for the developed cases of leprosy, keep the different forms apart and treat and study them separately.

The Bahama Islands cannot afford to neglect the conditions existing there. They are very poor now and need money badly, and it would be a very serious matter if their commercial relations with the United States—their chief purchaser—were disturbed by their own indifference to this dreadful disease.

I will say nothing about the treatment of leprosy. So far, medicines, sera, x rays, etc., etc., while helping some, have not given positive results in a great number, and we must look upon the leper thus far as incurable. Some cases seem to heal spontaneously or remain latent, and there is much that we can do to relieve symptoms and make the leper's suffering decidedly less, but at present the *real cure* is prevention, and *this* saved the world in the Middle Ages from a serious leprosy epidemic, and may have to do it a second time—perhaps in our day.

When one first views these beautiful little coral islands on the horizon ("an archipelago of sunlit isles, set in a trackless waste of shining sea") and sees the stately palm trees waving in the balmy tropical breezes, and then, on nearer approach, their colored houses, their white limestone streets, and their lovely tropical flowers, the hanging orchids, the royal poinciana, and bougainvillea, with their crimson blossoms, one wonders how any disease could ever rear its head from out of such loveliness.

21 MOUNT ROYAL AVENUE, WEST.

EPIDEMIOLOGY OF LEPROSY.

BY A. S. ASHMEAD, M. D.
New York.

Professor Max Müller said that the Icelandic contains the key to many a riddle in the English language. This may be true. But the same will not apply to words of wisdom on matters of leprosy. Denmark has not yet found the key to the riddle of leprosy.

Dr. Edward Ehlers, the renowned leprologist of

tion to the Danish West Indies. It is paid for by Engineer Meyer Davidson. Our special duty was to examine the blood sucking insects of the Danish West Indies relative to leprosy. The results were only negative, but so far interesting as they prove that earlier conclusions that leprosy is introduced by bugs, lice, and all blood sucking insects to be false. It has been proved (*ex cathedra*) that contagion is transmitted only in exceptional cases in that way. We had bugs and lice suck the blood from lepers (they got five cents every time), then we killed the insects and removed the intestines. It was seen then that the insects had carefully omitted (*sic*) the virus, and had not absorbed any leper bacilli. On the other hand, it was seen that bugs, fleas, and other insects *by sucking* and giving them off, transmitted elephantiasis. Formerly it was believed that this awful disease only came from mosquito bites (*sic*). (I wonder what Patrick Manson would say to transfer of elephantiasis by the *Culex fatigans* transmitting filaria sanguinis hominis by its bite and not through the stomach and mesenteric gland, thus clogging the lymphatic ways, by its development of embryo, from the ova hatching out?)

There are, says Dr. Ehlers, 360 cases of elephantiasis in the Danish West Indies (we had better look out then for our *Culex fatigans*, over in Scandinavian Hoboken), and 123 cases of leprosy. The cost of the new leprosy hospital, whose corner stone he and Governor Limprecht's wife laid in the Danish island, will cost \$15,000, paid for by Danish Odd Fellows, who already have built a leper hospital in Iceland, an institution which since 1898, has reduced the number of lepers in Iceland from 103, by thirty-three-per cent. It was Dr. Ehlers's intention



FIG. 1.—Leprosy patients and two physicians at the lazaretto of Agua de Dios, Colombia, with the government commissioners on inspection.

Iceland (not forgetting the Balkans and Crete), in a recent interview in New York (to translate from the Danish newspaper of this city) said: "I myself am leader of this Danish-French Leprosy Expedi-

tion to go from New York to Colombia to find out the number of lepers there, said to be from 4,500 to 27,000, but owing to financial difficulties, "I had to give it up."

With all due respect to Dr. Ehlers's superior opinion I beg to differ with him on the question of transmission of leprosy by insects. For I have myself found the bacillus of Hansen in the *Culex sollicitans*

730. Among those who are comprehended as domestic or that had been servants, male and female, in "fields, hamlets, and towns," there were 602 patients. Next come day laborers, 304. And beggars,



FIG. 2.—Group of leper patients and Slesian Sisters of Charity of the hospital at the lazaretto of Agua de Dios, Colombia

of Louisiana, where the insect abounds in that State's epidemic or at least endemic regions. Dr. Juan de Dios Carrasquilla found the bacilli in *Pulex serraticeps* of Colombia, and Dr. Alvarez, of Honolulu, also has found them in the mosquitoes of leprosy-stricken Hawaii. Perhaps, if Dr. Ehlers would look for them in the fleas of Pharaoh's rat (*Herpestes ichneumon*), or of the striped hyena (*Hyæna striata*) of the Balkans, or of the common polecat (*Felis putorius*) of Iceland, he would find the bacillus of Hansen in them, as frequently as we would in fleas of our common hare (*Lepus timidus*) or of our raccoon (*Procyon lotor*), in Louisiana. All fleas of these animals sip human blood, and they do not care whether the man or woman sipped is a leper or an elephantiac. They certainly do not "omit" whatever bacilli may be in the juices sipped, any more than does the *Culex fatigans*, the propagator of elephantiasis, or any other mosquito, the *Sollicitans* of Louisiana, for instance.

Do insects after inhibiting lepra bacilli propagate leprosy? I have obtained from Dr. Pablo Garcia Medina the statistics regarding 4,296 leper cases of Colombia, 2,836 of whom have been placed in the asylums. The number of women attacked was 2,539 and men 1,937. As regards age, there were observed in Colombia only a few from three to nine years; but from ten to sixteen there are 432. There has not been a case proved of leprosy in children less than two years old. In men the age of its appearance was between thirty-two and thirty-eight, and in women between thirty-five and forty. As to the professions, agriculturists are attacked in greatest number, there being 921 lepers from the farming class. Those without known or regular profession were

or real paupers, of both sexes had relatively the least leprosy, there being not more than one hundred.

These statistics show that leprosy in Colombia is not a disease of misery, as some eminent leprologists have stated, Dr. Jules Goldschmidt being one. Other leprologists assert that factors in the occurrence of leprosy are poverty of class, being badly clothed, poorly fed, and without place of abode, or utter wretchedness. In Colombia the statistics deny these assertions. Agriculturists get 40 or 50 cents, gold, a day, their vestments are sufficient, especially in the hot climate; their alimentation is very good, and not scanty, and yet it is noted they have the most lepers. The day laborers live under analogous conditions as the agriculturists; and the servants are well lodged, having an alimentation very similar to that of their employers, and are not badly clothed. The landed proprietors and capitalists who live on their incomes, have 394 lepers. All this is in contrast with the beggars, who are not over one hundred. This would prove that working in the fields or on farms where insects abound most has something to do with infection.

The influence of climate appears also very marked. Populations most touched by leprosy are found where there is a mean annual temperature between 20° and 24° C., places in Colombia having a climate hot and humid. This climate gives a contingent of 1,542 lepers. They came from places of mean annual temperature between 25° and 28° and those of 14° to 18° C. The places of hot and dry climate, between 29° and 34° C. temperature, and those of cold climate, between 8° and 12° C. present fewest lepers.

The classification of forms of the disease is also

significant. The tubercular type appears mostly in temperate and *humid* climate, a mean temperature of 21° to 24° C., with ulcerations more or less early of the lepromata. And it is a fact admitted by the physicians of Colombia, resident in such

Lastly it may be noted what more the statistics of leprosy in Colombia prove. There are now in the Agua de Dios asylum 1,230 lepers, and during seventeen years, since 1891 to October, 1908, there have been born there only 204 children. While there



FIG. 2.—Procession of lepers on Good Friday in the lazaretto of Agua de Dios, Colombia, April 13, 1906.

places, that it is there where can be observed most clearly and most often contagion of leprosy. It is thought that the climatic conditions debilitate the system and thus facilitate infection, the form of disease so common there, they think proves this, as it is made more intense. The contrary applies to the hot and dry climates. In mean temperatures between

was a moving leper population of 3,700 patients confined there children born of lepers were not very numerous. Therefore this factor of special predisposition need not be taken into the account in the study of its spread or suppression.

Here we see, Dr. Ehlers, that the epidemiology of Colombia's leprosy favors the idea of its spread by



FIG. 3.—Distribution of presents and Christmas goods given by United Brotherhood.

29° and 34° C. Here the forms which predominate are the nervous and mixed—more favorable modifications than the grave form of the other climates, and with greater duration of the disease, indicating an attenuation of the infection, and consequently, less probability of transmission of the disease by contagion.

insects, in spite of your little assay of leprosy in the Danish West Indies.

Those persons in Colombia most exposed to insect life, the agriculturists and the "water beggars," day laborers, etc., but not the real beggars, the most wretched class, were most stricken by the contagion. Those climates most favorable to insect life, the

identical climate which keeps alive leprosy in all the West Indies, were those which have the most lepers. Even the prevailing forms of the disease in the different climates, the worst forms of tubercular being in the humid climates; and the milder forms, nervous and mixed, being in the dry climates, favors the idea that insects propagate leprosy. For moist climates breed insects in abundance, and insects would not so readily find the bacilli through the skin of anæsthetic lepers as through that of the tubercular. The germs of leprosy are too deeply buried in the course of the nerves in anæsthetic lepers to allow the insects to be carriers of their poison, while in the tubercular lepers just the reverse applies. Therefore there is less infection (fewer lepers) in those places where tubercular lepers do not live or people are not naturally so much exposed to insects.

These circumstances about the epidemiology of leprosy speak volumes against Dr. Ehlers's expressed authority, based on his little trip to the Danish West Indies.

Another thing of importance to us of the United States and Canada, as important as the possibility of importation of leper germs *naturally* from the West Indies, is the permitted emigration of Icelandic lepers. We have a number of these already in the States of North and South Dakota, twenty-seven in all. And recently a number of them who tried to get into Minnesota from Icelanders' Mecca, Manitoba, were chased back by the authorities. Dr. Smith, of Tracadie, before his death wrote me of a voyage of discovery he had been sent out on, not by Engineer Davidson, of Copenhagen, but by the health authorities of the Dominion of Canada, to find Icelandic lepers. He said he returned with four.

According to a letter dated May 18, 1909, from Dr. F. Montizambert, director general of Public Health, Ottawa, Canada, "there were three Icelandic lepers in the leper lazaretto of Tracadie, New Brunswick. One has since died; the other two are still here, in an advanced condition of the disease."

Icelandic immigration to Canada from July 1, 1903, to March 31, 1909, showing destination, was as follows:

	Maritime Provinces	Quebec.	Ontario.	Manitoba.	Saskatchewan	Alberta.	British Columbia.
1903-1904.....	1	372	11	12	..
1904-1905.....	..	2	2	408	1	..	..
1905-1906.....	..	4	3	157	..	3	1
1906-1907.....	..	2	..	42	..	2	..
1907-1908.....	..	12	3	70	..	3	..
1908-1909.....	..	3	..	28	1	3	..
Totals.....	23	9	1,086	13	23	1	..

As regards the United States, the commissioner general at Washington writes me: "Icelanders are not separately shown in the immigration statistics, but are listed with the Scandinavian race, therefore, it is impracticable to give you the information you desire. Immigration from Denmark, however, is separately recorded."

Is Iceland ridding herself of this pest by shipping

her contagion in families to America? It would seem so, by the returns of Icelandic immigrants already in Manitoba.

Our State of North Dakota has eleven Icelandic lepers, eight tubercular (worst form for diffusion of germs) and two anæsthetic. How many Icelandic leper families has North Dakota with multitudinous latent germs?

The United States Marine Hospital's report, 1902, shows thirteen Icelandic lepers *unofficially* recorded. "None of these is known to be leprosy in the communities where they live." *They are spreading their germs.*

In the special class reports of Dr. White two lepers were mentioned, "of whom nothing is known further than that they came from Canada, and were about to settle in Northern Minnesota, when they learned that they were to be examined as to their being lepers. Thereupon they returned to Canada." "It is quite possible," the report says, "that these were Icelanders, for there are many such in Manitoba, and leprosy is not an uncommon disease there." Here we see that wholesale emigration of Iceland's lepers is a fact, and that even from Canada we are in danger of the infliction of Iceland's curse upon us at Denmark's will and pleasure by insects and by contagion in the families.

50 WEST ONE HUNDRED AND SIXTH STREET.

THE PHARYNGOSCOPE: A NEW METHOD OF EXAMINATION OF THE NASOPHARYNX AND LARYNX.*

BY HAROLD HAYS, A. M., M. D.,
New York.

For the past sixty years the examination of the posterior nares, pharyngeal vault, Eustachian tubes, and larynx has been made by means of the rhinoscopic and laryngoscopic mirrors. After one has become expert in the examination of patients in this way, little difficulty is encountered in the diagnosis of various pathological conditions. However, the ability to differentiate these diseased conditions depends greatly on the amount of experience one has had, and the picture presented is so small that only a small part of what one wishes to see is contained within the mirror at one time. Among other disadvantages of the mirrors may be mentioned that the patient seldom remains still long enough for a thorough examination to be made, unless the mirror is replaced several times, and the film which collects over the surface of the mirror dims the image unless the mirror is withdrawn, heated, and replaced again. In the majority of instances it is necessary for the mirrors to touch a certain portion of the mucous membrane of the oropharynx, so that in numerous instances gagging occurs.

It is not my intention to depreciate the value of the mirrors nor to suggest that the expert rhinologist or laryngologist has not been able to make correct diagnoses by these means. However, it is certainly justifiable to introduce an instrument which will not only be an aid to the expert in difficult cases

*Presented at a meeting of the Canadian Society of the New York Throat, Nose, and Lung Hospital, May 5, 1909.

where either the patient's oropharynx is sensitive or narrow, or where it is impossible to see clearly the various parts that one wishes to examine. Aside from this consideration it is more than probable that

children, are not difficult, but postnasal examinations, examinations of the pharyngeal vault and of the Eustachian orifices are usually unsatisfactory, and in the majority of instances this latter examination is given up after one or two futile attempts have been made. Even when adenoids and hypertrophied ends of the turbinates are seen, pathological differentiations of tubal conditions cannot be closely studied, the best evidence of which is that differential diagnoses of Eustachian tube conditions have not been made. Moreover, with the mirrors now used, one must place the patient in the upright position and instruction must be given as to how to use the throat during an examination. Examinations of unconscious patients or patients in the recumbent position have never been successfully performed.

Having encountered many of these difficulties myself, it occurred to me that it might be possible to construct an instrument which would make the examination of the nasopharynx and larynx easier, both for the patient and for the examiner. At first I was particularly interested in getting a good view of the Eustachian tubes, for, if one were able to examine these carefully, examinations of other parts would be a simple matter. As the back of the throat is essentially a hollow cavity, I concluded that this space could be compared to other hollow viscera, and as so excellent a view of the bladder and the ureteral orifices had been obtained by means of the cystoscope, there was every reason to suppose that if the telescopic portion of the cystoscope could be arranged properly we should be able to get as good a view of the nasopharynx and surrounding parts, as the genitourinary surgeon gets of the bladder. The results of these theories and conclusions are incorporated practically in the instrument which I present here, called the pharyngoscope. I am glad to

FIG. 1.—The Hays pharyngoscope.

the general practitioner or the younger specialist would be able to feel more assured in nasopharyngeal and laryngeal examinations if an instrument was devised which would eliminate many of the technical difficulties in these throat examinations, and at the same time assure one that he has seen all that is necessary.

Laryngoscopic examinations as a rule, except in

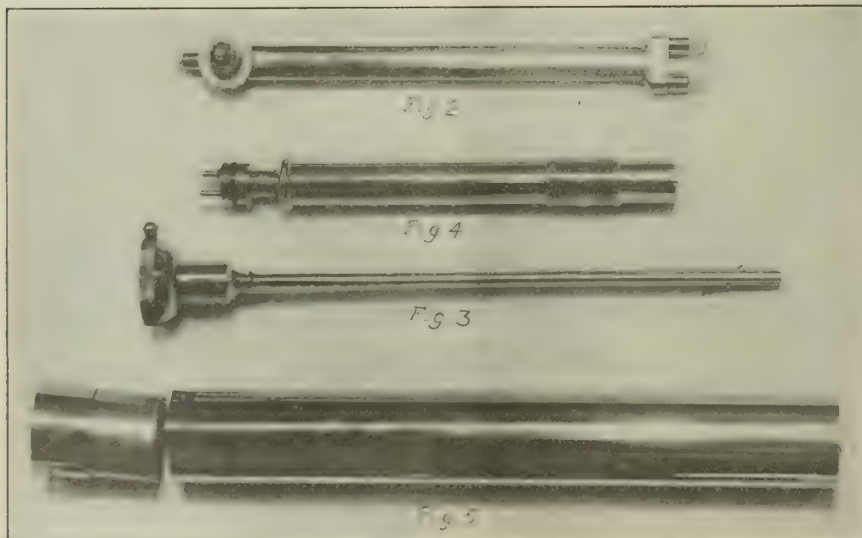


FIG. 2.—The mirror and the reflector lamp at the end of the telescope. FIG. 3.—The telescope. FIG. 4.—The handle. FIG. 5.—The casing for carrying the pharyngoscope with a telescopic (smaller part) for formalin tablets.

say that not only were my theories verified in fact, but that I have been able to see far more with this instrument than I first anticipated.

"Many attempts have already been made, particularly since the advent of electricity in the field of surgical diagnosis, to get a better view of the pharyngeal vault and adjacent parts, and now that the laryngoscopes of Killian and Chevalier Jackson are

posed of a horizontal and a vertical shaft which join each other at right angles, at the outer third, so that the instrument may be used as a tongue depressor (Fig. 1). The inner portion of the horizontal shaft consists of a central circular tube with an electric light carrier on either side, the three components being incorporated in a flat piece of metal (Fig. 2). From the inner end project the two electric lights



FIG. 6.—Method of introducing the pharyngoscope.

FIG. 7.—The pharyngoscope in place. The examination is made with the mouth closed.

so universally used, a direct view of the larynx is comparatively easy. The glass electric tongue depressor inserted behind the uvula, used in connection with the rhinoscopic mirror, gives a fair view of a small part of the postnasal space. The salpingoscope used through the nose has limited advantages. Theoretically a close study of the Eustachian tube may be made with this instrument, but in the majority of cases the lens becomes covered with mucus, and therefore the view is obscured. Attempts have been made to examine the postnasal space with the cystoscope, but the lamps were not properly placed and the circular form of the instrument made it difficult to hold it firmly on the tongue."¹

The autoscope devised by Kirstein, of Berlin, has been used for the supplementary examination of the larynx. "It consists of three parts—the spatula, the sliding hood, and the handle. The spatula is a sliding, concave metal plate which in the main is straight, but is slightly curved downward toward its rectangular end where it has a thickened lip and rounded edges to prevent injury to the parts with which it comes in contact. The handle is the electroscope of Casper which by means of the small electric light illuminates the entire length of the spatula and the parts beyond."² With this instrument one gets a direct view of the larynx, particularly the posterior wall, the interarytenoid space, and at times the trachea and the beginning of the bronchi. The one objection to this instrument is that the patient is held in a constrained position and the examiner is able to see only in the direct line of the instrument itself.

The latest model of the pharyngoscope is com-

posed of water tight, give an intense illumination and become only warm enough to keep vapor off the lens. In the central tube is inserted the telescope (Fig. 3), which is made on the principle of the Otis cystoscope. To the eyepiece is attached a little metal ball which indicates the position of the lens. This horizontal shaft including the telescope, is about eight inches long. The widest portion of the instrument, which is at the extreme inner end, is less than five eighths of an inch, and the flat metal shaft itself measures less than one half an inch in diameter. The vertical portion is about six inches long and half an inch wide (Fig. 4). It is attached to the horizontal portion by a screw joint, and contains the wires for connection with the rheostat or dry cells. Near its upper portion is an arrangement for cutting off the electric current so that the lamps need not be turned on until the instrument is in the mouth.

On account of the cement which holds the lens in place, the instrument cannot be boiled but like the cystoscope it is best disinfected by formalin. For that purpose a metal box is supplied with the instrument which is large enough to contain the horizontal shaft (except the eye piece), which has a receptacle at one end for formalin tablets and cotton. (Fig. 5). For ordinary purposes the instrument is cleaned with lysol, 5 per cent. carbolic acid, and alcohol.³

The instrument is inserted into the mouth like a tongue depressor until the inner end of the telescope is about one sixteenth of an inch from the pharyngeal wall (Fig. 6). When once in place it is held firmly by the examiner, the patient is told to close his mouth and to breathe quietly through

¹See *Laryngoscope*, July, 1909.

²Kyle. *Diseases of the Nose and Throat*, 1908.

³*New York Medical Journal*, April 27, 1909.

the nose (Fig. 7). As soon as the mouth is closed, it is observed that the muscles are relaxed and that the nasopharyngeal space is much enlarged. An excellent view of the parts to be seen can be obtained by gazing through the eye piece of the instrument.⁴ In order to keep the patient from breathing in the examiner's face a small mica plate is supplied which is placed between the telescope and the horizontal shaft.

When the lens points upward, as is indicated by the ball on the eye piece, one is able to obtain a distinct view of the pharyngeal vault. There is no difficulty in seeing adenoid tissue, in being able to study it minutely, and in being able to judge of its exact size. In one instance where an adenoid was not discovered by examination with the ordinary methods in a patient who had a chronic suppuration of the middle ear, a large adenoid growth was plainly visible with the pharyngoscope, and a drawing of the growth in situ was made at the time (Fig. 8). It was thus possible not only to state positively that the growth overhung both Eustachian prominences, but it was also possible to judge the size of the curette to be used for the removal. Two days later the growth was removed in one piece, and as will

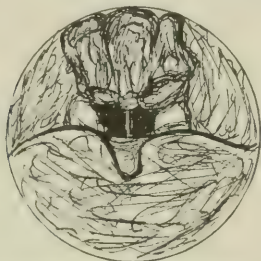


FIG. 8.—Adenoid seen with the pharyngoscope. Drawn in situ.

be seen by referring to Fig. 9, its exact proportions and constituent parts had been truly made out.

When one turns the lens about thirty degrees, the Eustachian tubes come into view. Out of forty-eight cases examined, the Eustachian tubes were seen forty-five times. In patients with a small nasopharynx it is possible to obtain a symmetrical picture, and both tubes come into view at one time so that a comparison may be made. I have thus far been able to differentiate various pathological conditions of the tubes such as congestion, lymphoid hypertrophy at the mouth of the tube, adenoid tissue obstruction, stricture, hypertrophy of the tissue of the Eustachian eminence, etc. I have made the interesting observation that in many instances a small spiculum of bone projects in the fossa of Rosenmüller, covered with mucous membrane, and that when one traverses this ridge he thinks that he is in the Eustachian tube. That this is not so is plainly evident when the vibrations which one usually hears by massaging the tympanic membrane cannot be heard. When the pharyngoscope is used while the Eustachian catheter is passed through the nose, one is able to distinctly see the catheter go

into the Eustachian orifice and therefore no mistake can be made.

For the examination of the larynx the instrument is not moved, but the lens is merely turned down. In this way one obtains a very beautiful picture of



FIG. 9.—Exact reproduction of the adenoid after removal.

the laryngeal structures, distinction of colors is easily made, and the entire larynx with the surrounding parts, such as the pyriform sinus and fossa innominata, comes into view. I have thus far examined about 200 cases, and in the fifty cases which I have tabulated, I was able in every instance to see the entire larynx, particularly when the patient was told to inspire deeply and thus raise his epiglottis. In order to give you an idea of the picture seen, I shall refer you to Fig. 10, a case of tumor of the vocal cord and Fig. 11, a case of papilloma of the larynx.

The pictures presented are somewhat different from those seen ordinarily. On examination of the nasopharynx, the pharyngeal vault, and Eustachian eminences stand out prominently, while the posterior nares are seen in perspective. Therefore the latter seem smaller in proportion (Fig. 12). On the contrary, on examining the larynx, one looks down directly on the cords and therefore obtains a closer, a clearer, and a better view of the parts to be seen



FIG. 10.—Tumor of the left vocal cord near the anterior commissure. (Drawn by Dr. Percy H. Fridenberg.)

(Fig. 13). At first it is difficult for one to orient himself, but with a little practice one is able to distinguish the various parts readily.

Thus far the instrument is useful mainly for diagnostic purposes. Applications may be made to the nasopharynx through the nose and directed by means of the eye, when the pharyngoscope is inserted into the mouth. Moreover, it is possible in

snaring off the posterior ends of the turbinates to distinctly see whether the wire is in place. However, its usefulness aside from that mentioned before, can only be discovered in the course of time



FIG. 11.—Papillomata of the larynx. (Drawn by Dr. Percy H. Fridenberg.)

by other observers. An attachment is now being devised which will allow of direct catheterization of the Eustachian tubes through the mouth by means of silk woven catheters somewhat like those used in



FIG. 12.—Schematic view of the nasopharynx as seen with the pharyngoscope. 1, Adenoids; 2, uvula; 3, middle turbinate; 4, inferior turbinate; 5, septum; 6, Eustachian tube.

the ureters. Although I have not examined many children, I have no doubt that it will be possible with this instrument to examine them readily.

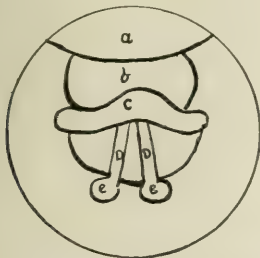


FIG. 13.—Schematic view of the larynx and surrounding parts as seen through the pharyngoscope. a, Base of tongue; b, lingual tonsil; c, epiglottis; d, vocal cords; e, arytenoid cartilages.

The advantages of the pharyngoscope may be summarized as follows:

1. The instrument can be used without any of the usual difficulties encountered by the patient and the examiner.

2. A much more distinct and larger view of the parts is obtained.

3. One is able to see and to study adenoids and tubal conditions.

4. In the examination of the larynx it is unnecessary for the patient to protrude his tongue and keep the parts tense, but on the contrary the larynx is examined with the mouth closed.

5. Applications to the nasopharynx can be made under direct vision.

6. Eustachian catheterization can be accomplished more readily as one is able to see the catheter go directly into the tube.

7. The posterior pillars of the fauces, the base of the tongue, the lingual tonsil, and the epiglottis also are distinctly seen.

It is my hope that within a short time various expert observers will use the pharyngoscope. Only by this means will the advantages be appreciated. I have no doubt that as time goes on, some objections will be found to the instrument. From the numerous comments that have already been passed it would seem that this new method of examination of the nasopharynx and larynx would greatly facilitate not only the diagnosis of various obscure conditions, but also the treatment of the middle ear, the pharyngeal vault, and the larynx.

11 WEST NINETY-FIRST STREET.

THE ROENTGEN RAYS IN THE DIAGNOSIS OF CARCINOMA OF THE STOMACH.*

By GEORGE E. PFAHLER, M. D.,
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In a previous paper read before the American Röntgen Ray Society in December, 1908, and before the College of Physicians in January, 1909, I referred to the statement of Virchow concerning the frequency of carcinoma of the stomach. His estimate is that thirty-five per cent. of all carcinomata occur in the stomach. (Quoted by Rodman; *Surgery, Gynecology, and Obstetrics*, May, 1908.) Through an error this was stated as "thirty-five per cent. of all visceral carcinomata" (*Journal of the American Medical Association*, March 13, 1909), which in itself would be appalling, but where the actual estimate from so great an authority is considered, it compels us to bend every effort toward the prevention and relief of this malady.

Relief depends upon an early diagnosis. Otherwise the surgeon can hope only to prolong life and relieve suffering. Every aid, therefore, in making a diagnosis must be welcomed. Much has already been accomplished in this field through Rieder's¹ masterful work in placing gastric Röntgenology upon a firm foundation, and by Holzknecht.²

RELATION TO OTHER EXAMINATIONS.

I shall take for granted that you are all familiar with the other methods of diagnosis and I omit them for the sake of brevity and not because I undervalue

*Read in a "symposium" on carcinoma before the Philadelphia County Medical Society, April 28, 1909.

¹Fortschritte auf dem Gebiete der Röntgenstrahlen, February 24, 1907.

²Die radiologische Diagnostik der intra- und extrahepatischen Tumoren, Meitzel, Berlin, Vienna, 1908.

their importance. In fact, a careful physical and clinical examination should always precede the Röntgen ray examination. This does not mean that months should be consumed in these preliminary investigations, but days or weeks should be sufficient to find the evidence, if present, which should arouse our suspicion. Neither does it mean that the clinician should wait until he has made a diagnosis and then simply ask for a picture of it.

In my opinion the Röntgen ray examination stands next in importance to the exploratory incision, and is, I believe, practically without danger.

OBJECTIONS TO ITS USE.

The dangers that are present apply to the operator who is of necessity exposed to the rays at times, and unless well protected, will be much exposed. The sufferings of the martyrs who have gone before should be sufficient to render us cautious, and yet it makes one shudder when he sees the recklessness with which some men work. This remark applies particularly to those who place small, cheap outfits in their offices to do a little work. The confidence that a man may feel because he makes only an occasional stomach examination does not deserve consideration, because such a man is not competent to give an opinion in a case of suspected gastric carcinoma. The methods of protection have been described in a previous paper (*Proceedings of the Section in Medicine of the American Medical Association*, June, 1907) and will not be repeated here.

As in most laboratory examinations, much time, and in this instance, considerable expense, is involved. This work differs from most laboratory examinations since we must deal with the patient himself and therefore much will depend upon the tact and presence of mind of the Röntgenologist.

In over three hundred and fifty gastrointestinal examinations I have never seen any evidence of bismuth poisoning. This may be due in part to the fact that for over two years I have used the bismuth *subcarbonate* instead of the *subnitrate*. The only unpleasant effect that occasionally occurs is a little gastrointestinal disturbance which may be part of the disease itself, or may be due to the attending excitement of a new procedure, or may be due to the bismuth kefir mixture which is used; since kefir is unpalatable to some people.

PREPARATION OF THE PATIENT.

If there are no objections, the patient should come to the laboratory with the stomach and bowels empty. I usually prefer that the patient is given a purgative the night before and come to the laboratory without breakfast. I realize that in advanced cases the stomach may still contain food from the previous day, for I have found evidence of retention over several days, but the early cases are the important ones, and here we can assume that the stomach is empty. The retention of solid food may be the source of error. As little clothing should be worn as possible. A kimono, therefore, is convenient apparel for a woman.

MATERIAL FORMING THE BASIS OF THIS PAPER.

I am indebted to Dr. Anders, Dr. Daland, Dr. Rodman, Dr. Laplace, Dr. Deaver, Dr. Gilbride, Dr. Babcock, Dr. Bernheim, Dr. Kern, and Dr. Menger

for the privilege of examining thirty-two cases in which evidence of carcinoma was found, and in most of which opportunity was afforded by operation or autopsy to confirm the Röntgenological findings, besides a number of cases in which tumors were found to involve associated organs.

In nearly all cases the disease was well advanced. In all the rays served to localize more definitely and to outline more clearly the extent of the disease. In the majority of cases no palpable tumor was present, and in a number of cases this examination furnished the only positive evidence of carcinoma. In a few instances it served to eliminate carcinoma, and at least in one case it served to show that a palpable tumor was attached to the stomach, but not actually involving the gastrointestinal tract, and was found at operation by Dr. Rodman to be a retroperitoneal sarcoma.

EVIDENCE OF CARCINOMA.

A gastric carcinoma can be recognized by the Röntgen rays when it will change the course of the food, or obstruct its passage, or when it will modify the stomach outline, its position, its peristaltic movements, or when it will limit the normal mobility of the stomach.

ABNORMAL COURSE OF THE FOOD.

The first swallow of bismuth mixture should be carefully watched. As it enters a normal stomach, slightly to the left of the median line and just below the diaphragm, it curves obliquely to the left to a point about two inches below the diaphragm and two inches to the left of the median line. Here it takes the shape of a funnel with the point downward, and above the base of the funnel a quantity of gas is formed under the dome of the diaphragm. It then passes slowly downward, almost in a straight line or slightly curved to the left, to the lower pole, which is about an inch above the umbilicus. In the average stomach this lower pole will be on a level with or below the umbilicus, and in gastropnoia considerably lower. Even a small carcinoma between the upper and lower pole should modify this course. The food is likely to pass irregularly as if curving around an obstruction, just as a rivulet curves around a rock. This is best seen when the walls are in contact. When the walls are relaxed or widely separated as in some advanced cases of gastrectasis or gastropnoia, the food drops suddenly from the upper to the lower pole as in a sock. The peristaltic waves will carry the food from the lower pole to the pylorus, or else it must be forced into the pyloric end by massage or by abdominal contractions which raise the lower pole so that the food can flow easily into the pyloric end. Usually more of the bismuth mixture must now be given, though this must be in small additional quantities, for if the carcinoma is small and occupies the anterior or the posterior wall, a large bulk of bismuth would overlie the tumor and obliterate any irregularity due to its pressure.

At any stage of the examination, if evidence of carcinoma is found, a plate should be made for more detailed and confirmatory evidence.

Sources of error. The field of errors will likely be increased as our experience grows, so that it is

important to keep them always clearly before our minds.

At times the passage of the liquid bismuth mixture is very slow, and in a hasty examination or when the plates alone are depended upon, one might easily interpret it as an hourglass contraction. This delay may be due to increased abdominal distention or to a tonic contraction of the stomach. In one case a spasmodic condition gave a typical hourglass contraction at about the middle of the stomach with other smaller contractions along the greater curvature which could be easily interpreted as small indentations of the growth. This contraction remained for at least an hour while the stomach was filled and the patient was examined in several positions. No peristaltic waves passed. The patient complained of pain during this time. He was too weak to have the examination repeated. When Dr. Laplace operated upon him only a small old ulcer was found which probably was the cause of this spasmodic contraction and may explain his pains which were only present when food was in the stomach. Had the patient not been so weak from previous voluntary starvation, massage, etc., a repetition of the examination might have cleared the case. Such a spasmodic contraction is surely very rare, and when present probably indicates an exploratory operation anyway, as the results show in this case. There is normally an indentation in the greater curvature at the lower level of the spleen, which may be due to the colon, and this is at times very deep and will at times make the food curve strongly to the left at the lower pole. This indentation, however, is smooth, and will usually be modified or obliterated by massage, abdominal contraction, or a repetition of the examination.

In very thin subjects, too much pressure against the screen or plate may force the spinal column against the anterior abdominal wall, giving an irregular or obliterated pyloric antrum. This error is, of course, easily corrected or avoided by a fluoroscopic examination, during which the pressure can be removed, or the food forced into the antrum by massage.

2. GROSS OBSTRUCTIONS TO THE PASSAGE OF FOOD.

This is best illustrated in an hourglass contraction of the stomach, and is usually evidence of advanced disease, though it may, at times, be found before palpable signs are present, and even before the symptoms are definite. Gross obstructions anywhere will give most important evidence. The obstruction can be observed upon the screen, and the degree of obstruction can be estimated by finding the smallest portion of food that cannot pass. For this purpose I use pills or capsules of bismuth of various sizes, but these pills should be used only after one has observed the degree of delay to the passage of a liquid bismuth mixture.

One must be cautious in diagnosing hourglass contraction. There is normally a delay of several minutes at the juncture of the upper and middle third of the stomach. Gross obstruction cannot be diagnosed, therefore, until the stomach has been fully distended and until an attempt has been made to crowd food by massage and abdominal contraction from one segment into the other.

The sources of error mentioned under the previous heading must be included here. A tumor lying outside of the stomach may give obstruction, but when the stomach is pushed away from the tumor the evidence disappears.

3. LOCALIZED OR GENERAL DIMINUTION IN THE STOMACH SHADOW.

This diminution of the stomach shadow is usually localized and will most often be found at the pyloric end. There is, in addition, usually some irregularity in shape. Such diminutions may, at times, be seen only when the stomach is partially filled or again, when nearly empty. This can be understood when one considers that if the tumor occupies either the anterior or the posterior wall without affecting the lesser or the greater curvature, the evidence of obstruction or diminution of shadow would be seen only at a certain stage, during which the opposite wall is in contact with the tumor.

After the stomach is fully distended a sufficient layer of bismuth will overlie the tumor and obliterate the differentiation. When such evidence is first observed, while the stomach is partially filled, an attempt should be made to carry food into the affected area by massage. If this is impossible the evidence becomes stronger. Associated with obstruction at the pylorus we will, of course, usually have a marked gastrectasis.

4. ABNORMAL CONTOUR.

Anywhere along the greater or the lesser curvature there may be a tumor. This would ordinarily cause an indentation in the shadow cast by the bismuth contents of the stomach. Such indentation should first be observed on the screen. It should be constant and not obliterated by massage or peristaltic action or respiratory movements. It should then be recorded on the plate, where finer detail and, at times, the indentations of the growth itself may be observed. In order to make such a fine detailed record the exposure must be made in a few seconds, usually under five, so as to eliminate the effect of respiratory and peristaltic movement. Such short exposures require powerful currents, and powerful currents burn up tubes very rapidly, thus decidedly increasing the expense.

We must avoid the error of interpreting an indentation into the gastric shadow as carcinoma when produced only by a distended knuckle of intestine. Such indentation is smooth and is usually found on the greater curvature at about its middle or upper portion.

So, too, a strong and slowly moving peristaltic wave, if not observed on the screen and seen only in one plate, may lead to an error. When in doubt, the examination should be repeated.

5. INTERFERENCE WITH THE PERISTALTIC WAVE.

Peristaltic waves in general are plainly observed only in the lower third of the stomach, and best when the stomach is only partially filled, or, again, when nearly empty. Their depth and frequency vary considerably in different individuals. They serve as evidence of a carcinoma when they are plainly visible and are seen to stop at a certain point either on the greater or lesser curvature. The evi-

dence becomes stronger if they can be seen to begin again further along on the border of the stomach.

6. ABNORMAL POSITION OR IMMOBILITY OF THE STOMACH.

The stomach may be drawn by adhesions or crowded out of its normal position by the tumor mass. Adhesions may even twist the stomach so as to divide it into two distinct portions and give the effect of an hourglass contraction. Such effect was observed in a case of Dr. Rodman's, in which it took the bismuth kefir mixture nearly half an hour to pass from the upper to the lower segment of the stomach. The stomach itself was a very large one, so that the lower pole extended nearly to the pubes. The carcinoma was found on the lesser curvature, near the pylorus, with adhesions to the liver higher up, which twisted the stomach and divided it near its middle.

Adhesions below or anteriorly will render the stomach less mobile, but one must bear in mind that with large stomachs and relaxed abdominal walls, the mobility is not great. I usually depend on abdominal contractions to move the stomach, though pressure with the hand may be used. Such evidence is best obtained on the screen, but some evidence may be obtained by plates, if one takes a posteroanterior view with the patient in the erect posture and an anteroposterior view with the patient in the supine posture (lying on the back).

7. ABNORMAL EVACUATION.

In two cases I have observed the stomach contents passing directly into the duodenum almost as fast as they entered at the cardia. This I interpreted as being due to a patulous pylorus. I believed that induration of the walls of the stomach prevented the pylorus from contracting and closing the orifice. One patient (Dr. Daland's) died in a few months with all the characteristic symptoms of gastric carcinoma, but there was neither an exploratory operation nor an autopsy. The other patient (Dr. Anders's) was operated upon by Dr. Rodman, confirming in every particular the Röntgenological findings.

There may also be great delay in the evacuation of the stomach due to pyloric stenosis. Here again we must be cautious, for I have observed in cases of marked gastroptosis in which there was no pyloric stenosis, retention of food as long as eleven hours. In gastric carcinoma I have observed retention as long as four days. Retention of food can be interpreted as due to carcinoma only when it is combined with other evidence, both clinical and Röntgenological. Generally the food should be followed through the bowel to detect other possible involvement, due either to malignant disease or adhesions.

THE RELATION OF THE TENDER POINT TO THE TUMOR.

You will observe in a number of the lantern slides which I show you that I have three lead marks placed upon the patient which have been photographed upon the plate. One is placed upon the ensiform cartilage, one upon the umbilicus, and the third upon the most tender point of the abdomen, or upon the most prominent part of the tumor, if a tumor is present. By this means we are enabled to

study the relation of the bismuth mixture in the stomach to the tumor or to the tender point.

GENERAL TECHNIQUE.

The technique can be given only in a general way, for in the study of a case one step leads to another and good results will often depend on the ingenuity of the operator. I believe no case is thoroughly studied for carcinoma unless both the screen and plate are used. The time required for fluoroscopic examination and the number of plates will depend upon the individual patient.

1. *Position of the patient.*—This will, of course, vary much with the individual patient, and several positions are often necessary to confirm or to demonstrate more clearly. Generally the standing posture, with the abdomen against the plate or screen, will give the most evidence, probably because in this position the stomach is more stretched out, and because we can best watch the passage of the food, which is conveyed downward both by gravity and peristaltic action.

A position with the patient lying on the abdomen for posteroanterior view will probably be the next most valuable. Then one can easily, with the patient either in the erect or recumbent posture, change to the oblique or posterior views.

2. *The bismuth mixture.*—At the very beginning of the examination it is usually best to use a tablespoonful of a mixture of bismuth and water. This will give the greatest density with the greatest fluidity, and it can, therefore, be best followed in a tortuous course, and into the crevices; but one must not use too much of this mixture for fear of the water becoming absorbed and leaving the bismuth in hard masses.

For general use and for further distention of the stomach I have found a mixture of bismuth and kefir (or *volak*), previously described, to be most serviceable, since it keeps the bismuth in almost perfect suspension and is easily digested.

The remainder of the technique, with regard to the management of the tube, the apparatus, the dress of the patient, the patient, and the plates, will be similar to that used in other abdominal examinations.

CONCLUSIONS.

1. Gastric carcinoma is demonstrable when it changes the course of the food through the stomach, when it decreases the volume, interferes with peristaltic action, fixes or displaces the stomach, causes an indentation in the stomach wall, or modifies the rate of evacuation of the gastric contents.

2. I believe that with this aid a diagnosis can be made earlier than has heretofore been possible.

3. As a rule it is a tedious and expensive study, and therefore each case should be studied well first clinically.

4. At present, I believe it is impossible to differentiate a stenosis of the pylorus due to old ulcer and that to carcinoma, but this is not important since the line of treatment is the same.

5. Great caution and thoroughness will have to be observed, or errors will be made, and this valuable method of investigation will fall into discredit.

REPORT OF A CASE OF HYSTERIA IN AN ADULT MALE.

BY ROBERT EMMET COUGHLIN, M. D.,
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Kirchhoff says in his *Handbook of Insanity*: Hysteria in the male is so rare that we will refer only to the affection in the female sex. He then, like all other authors, goes on and refers to the female sex exclusively in a consideration of the subject.

Hirt says that Charcot and his pupils have shown convincingly that it does occur in men and boys, and that too more frequently than might have been supposed. From Charcot we have learned that it occurs frequently among the French soldiers. Further investigation may prove that this would hold good not only for the French, but also for other armies. He also says that for its development a certain predisposition on the part of the patient is absolutely necessary. "A certain proneness to eccentricities" may be noticed.

Hirt also says that hysteria may set in suddenly without previous disease of any kind. In many cases "attacks" never occur. The patients, indeed, may without any provocation have fits of crying, laughing, and screaming, but no convulsions. An anesthesia extending over the whole body and taking in all the mucous membranes is almost always hysterical in nature. In reality it is in the majority of cases a disturbance of the psychical equilibrium which produces the disease.

As to race, the Slavonic (Poles, Russians), the Latin races (Frenchmen, Italian), and, above all, the Semitic, are more liable to hysteria than the Teutonic.

Traumatism not only of the body but of the mind (psychic traumatism) should be mentioned as a cause of hysteria. Among the latter we have fright, emotions of anger, rarely of joy; to the latter belong grief, anxiety, wounded self respect or vanity. We may have also mental shock along with bodily injury.

"Mutismus hystericus" may be of variable duration, sometimes these patients remain completely mute for months when some unexpected shock will cause them to use their voice again.

Among the sensory disorders the diminution or complete loss of sensibility is the most important; this may be so extensive that the patients can feel nothing on the part or any part of the surface of the body, not excluding the mucous membranes.

Pashayan describes three stigmata that obtain only in hysteria and distinguish it from other neuroses. First, suggestibility, using this term in a special sense it means that when a definite idea is imparted to an hysterical person in words or otherwise, that idea is seized upon involuntarily by the patient and carried into effect. Second, exaggerated absent mindedness and abstraction. Hysterics can see and do one thing at a time and are quite unable to carry on two simple acts, such as rotating the hand while opening and closing the mouth, simultaneously. Third, mutation of symptoms.

What is paralysis to-day may change into another manifestation such as amaurosis or convulsion at another time.

To understand hysteria properly it must be remembered that its genesis is invariably due to some psychic trauma, a moral shock. A blow to one's affectivity. This shock may range from terror to simple fright. It may be a mere chagrin, jealousy, or a trifling rebuke. Shocks received in sexual life, Breuer and Freud affirm, are the greatest etiological factor in the production of hysteria.

Should it for any reason fail to find expression but be pent up and suppressed, it produces a sort of dissociation in the personality of the individual, the idea referring to the incident does not form a link in the chain of thoughts traversing the consciousness but sinks into the realms of the subconscious so that the shock and idea referring to it are lost sight of.

The patient in the following case was admitted on May 28, 1908, to the Norwegian Hospital, medical division, service of Dr. Edward E. Cornwall:

Mr. F. B., age twenty-four; occupation, fireman on board a fruit steamer; birthplace, Germany. Family history, negative. Past history, present trouble dated back a few weeks ago, when patient told his captain that when the boat reached New York he wished to be paid off and let go. As the captain considered E. B. a very good man he told him frankly that he would not release him. In reply he told his superior officer that when they reached the port things would be so fixed that he would have to release him. Patient's habits were very good and there was no reason to believe him an alcoholic. He never acted in any manner that would suggest that he was not in his right mind. After making the assertion referred to nothing occurred until the boat reached the dock, when E. B. went to his bunk and lay down. Shortly after one of the crew reported that E. B. was singing at the top of his voice. It seemed impossible to quiet him, so the captain allowed him to continue. In a short time he appeared unconscious. It then seemed necessary to call an ambulance. When the ambulance surgeon arrived he found the patient in an apparent unconscious condition. He resisted all attempts to move him. Shortly after his admission to the hospital the singing at the top of his voice was resumed. Foreign hymns along with "Dixie" were the character of the songs.

Examination: A well nourished and fairly muscular young man, who to all outward signs was unconscious. Supine position in bed. Breathing perfectly normal; abdomen markedly retracted; muscles of body were in a markedly spastic condition. Patient resisted any endeavor to examine him. Eyelids closed, any attempt to examine them caused him to hold them forcibly. When opened with force he rolled eyeballs upward. The left pupil seemed to be smaller and reacted more sluggishly than normal or the right eye. Any attempt to open mouth was met with resistance. At times when somebody entered his room he would turn his head toward the wall and would resist all attempts to move or turn head in the opposite direction. All attempts to move his extremities were met with the same resistance. Singing at the top of his voice continued and nothing appeared to stop him.

No abnormal condition of lungs found. Heart sounds were feeble, no murmurs or accentuations. Abdomen was held in a marked scaphoid condition. On abdominal wall were a few spots, which were very suggestive of rose spots. Otherwise nothing abnormal could be discerned. Extremities were held so rigid that no reflexes could be made out. Temperature by rectum was 102° F., pulse 120, respirations 25.

Treatment: Hospital typhoid diet. Sponge bath every four hours. Four hour temperature chart. For the first twenty-four hours no nourishment was taken. Patient was delirious all afternoon and night, and refused to talk. Dashing cold water in his face only started him singing, and repetition of this caused him to stop just long enough to clear his throat, when he would start again. Morphine,

one eighth grain, and strychnine sulphate, one sixtieth grain, were administered hypodermically.

May 28th: Temperature, pulse, and respirations all normal today. The diagnosis of hysteria was made. When a strong electric current was applied to scrotum patient was not in the least bothered by it. He refused to take anything by mouth, so all food was administered either per rectum or by stomach tube through nose. Patient was very quiet, however, all day.

From May 30th up to June 6th there was little change in his condition. For the most part he seemed to be in a condition of coma. He refused to answer all questions or take food by mouth. He grew very lean and in spite of stimulation became weaker each day. He appeared at times to recognize friends. An instance in point was when his captain called to see him he deliberately turned his back and firmly closed his eyes. All attempts to turn him over were resisted. At times he would expectorate clear of the bed after the stomach tube was removed. At other times when several would be standing around the bed talking over the case he would appear to be in the act of smiling.

June 7th—Patient asked for a glass of milk. Nothing else could be obtained from him. This was the first time he spoke in ten days.

June 8th—Patient appeared like a man coming out of a trance. He answered a few questions and said he felt pretty good.

June 9th to 12th—Patient began to feed up very well, but said he felt very weak, especially his legs. He was allowed to get out of bed, but did not seem to care to sit up very long.

June 15th—All the signs and symptoms of a dry pleurisy.

June 16th—A small abscess situated in muscular tissue in back was opened and cleaned out with hydrogen peroxide.

June 16th to 29th—All the signs and symptoms of acute bronchitis present. An examination of sputum was negative.

Gradual and steady improvement up to July 29th, when he was discharged as recovered.

The highest temperature was 102° F. on admission. The lowest was 97° F., three days after admission. The average temperature was about normal. The highest pulse rate was 120 on admission. The lowest was 50, which occurred on the ninth day after admission. The respiration varied from 18 up to 44, when he was seized with the attack of dry pleurisy.

To recapitulate: Here was a strong, well developed young man of Teutonic birth with no predisposition or "proneness to eccentricities" receiving a rebuke or mental shock suddenly seized with an attack of screaming and singing without convulsions. This attack occurring just at a time when it seemed necessary for something to happen so that he would not be compelled to continue his work under the same conditions as before. This condition being preceded by suggestion and subconsciousness and precipitated by great excitement and exhilaration of spirits followed by "mutismus hystericus," unconsciousness or mutation of symptoms, anæsthesia, and sensory disorders. The interesting point in the case would appear to be that because of a rebuke or mental shock the patient suggested to himself that matters would be so fixed when the boat reached New York that his captain would be compelled to let him go. It is evident that the subconscious state of his mind must have had a great deal to do with the precipitation of this attack or fit of hysteria.

On admission the diagnosis was rather difficult for the reason that the weather was extremely warm and there was a chance that he might have been overcome by the intense heat on board the boat; but after carefully observing the patient's condition subsequently only one diagnosis could be reached,

namely, hysteria in an adult male with psychical traumatism as the ætiological factor.

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428 FORTY-SEVENTH STREET.

GERIATRICS.

By I. L. NASCHER, M. D.,
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Geriatrics, from *geras*, old age, and *iatrikos*, relating to the physician, is a term I would suggest as an addition to our vocabulary, to cover the same field in old age that is covered by the term *pædiatrics* in childhood. Senility is a distinct period of life having general features normal to it and abnormal at other periods of life. It is a physiological entity as much so as the period of childhood. When any of its manifestations appear during childhood or maturity they are indicative of disease, and medical skill is often able to remove them. Occurring during the period of life when degeneration and decay are natural and inevitable medical skill may possibly retard, but death alone can stop the processes of decay. Physicians have come to look upon the features of senility, the atheromata, degenerations, ossifications, and calcifications, etc., as pathological features of maturity instead of considering them normal features of senility, and they are treated as diseases. Any condition, feature, function, or circumstance which prevails generally during one period of life must be considered normal to it though it be a disadvantage to the individual. The weakness of the infant and its liability to exanthemata are normal to that period of life. The pains of labor are normal in the mature woman. For the same reason we must consider the degenerated organs and altered functions of senility normal and physiological. Childhood has received special attention by physicians and a special branch of medicine has been assigned to it. Senility has received the attention of but a few investigators; aside from these it receives no special consideration, its manifestations are considered pathological conditions of maturity, and its diseases are treated as though they were diseases of maturity occurring in individuals who have a weak constitution. Having an individuality of its own as clearly defined as childhood, with anatomical features, physiological functions, diseases, and their treatment differing from maturity it should be considered apart and distinct from maturity, and as a special branch of medicine. To such specialty I would apply the term *geriatrics*.

A single illustration will suffice to show the marked differences between the conditions existing in senility and in maturity. In the normal senile chest the sternum is ankylosed, the ribs become harder and lose their resilience, the costal cartilages and the cartilages of the larynx and trachea become ossified, all through the deposit of lime salts. Waste proceeding faster than repair, the chest muscles atrophy, and this with the bone and cartilage changes decreases the mobility and elasticity of the

chest walls, interfering with the expansion of the lungs. The lung tissue atrophies, and the alveolar septa waste and finally are obliterated, the vesicles coalesce, and we have an emphysematous condition in an atrophied lung. Owing to this condition of the lung and the weak circulation of senility we have an incomplete aeration of blood and an impeded pulmonary circulation, with a tendency to hypostatic congestion and susceptibility to adynamic inflammation. This adynamic inflammation which is the principal cause of death in old age, differs in many essentials from the pneumonia of maturity. The sthenic type is infrequent and in only about fifty per cent. of these are there the classical initial symptoms, chill and pain. There are many latent cases presenting no marked symptoms, cases where the emphysematous symptoms mask the symptoms of the pneumonia, and cases where the symptoms present do not point to lung involvement. In many cases there is little or no cough, pain, dyspnea, or expectoration. The physical signs of senile pneumonia differ from the signs in pneumonia of maturity, and there is a difference in the progress of the disease. Few cases reach the stage of resolution, and in these areas of engorgement remain as foci for future inflammations. Death is generally due to exhaustion or paralysis of the heart or lungs. An important feature in all diseases in senility is the presence of symptoms referable to the senile conditions, and masking the symptoms of the disease.

The difference in treatment is as marked as the difference in symptoms. Two factors frequently overlooked when prescribing for the aged are the changed assimilative powers and the secondary effects of the drugs upon degenerated organs. All the synthetic antipyretics are cardiac depressants, acting very rapidly. The senile heart is always weak, and such drugs if used at all must be combined with rapidly acting cardiac stimulants. This is a very important point. Digitalis is a slow acting drug and it should never be used in combination with such rapidly acting depressants as acetanilide and phenacetin to counteract the depression; they will paralyze the heart before the digitalis has a chance to act. Chloral is dangerous in arteriosclerosis and in fatty heart. Narcotics produce cerebral hyperæmia, cause cardiac depression, and favor pulmonary congestion. Iodides favor atrophic changes. The nitrites and nitroglycerin have a paralyzing effect upon the cerebral vessels and excite the heart.

Thus we see that many drugs used in pneumonia in maturity are inapplicable in senility. I have referred here only to the drug treatment. The same pathological processes as in maturity acting upon the senile organism produce different effects and require different treatment. The bowels must be kept open but the salines which are useful in maturity are contraindicated in senility; peristaltic excitants are required. Expectorants may be necessary, yet such valuable agents as tartar emetic and apomorphine cannot be given. In senility salts and alkaloids in solution and alcohol are readily absorbed. Vegetable drugs in an alcoholic menstruum are readily absorbed unless they contain gummy matter. Watery solutions of vegetable drugs are frequently inert. These facts are or should be known to every

physician, yet they are often overlooked when treating senile cases. They are presented only to emphasize the necessity of considering senility and its diseases apart from maturity and assign to it a separate place in medicine.

73 EAST EIGHTY-SECOND STREET.

THE ACTION OF GLANDULAR EXTRACTS UPON TETANY AFTER PARATHYROIDECTOMY.

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The parathyroids were first discovered by Sandstroem, a Swedish anatomist, Vassale, Moussu, and Gley first established the fact that the removal of the parathyroids was followed by tetany. This has been confirmed by Pfeiffer, Mayer, Hagenbach, and Glaserfeld abroad, and by MacCallum and Beebe in this country. In man, the internal or superior parathyroids are located on the posterior surface of the thyroid glands at the juncture of the upper and middle third of the gland. The external or inferior are seated near the lower margin of the thyroid on its posterior surface. There are four parathyroids in man, two on each side of the median line. In the lower animals, accessory parathyroids exist, some of which are located, according to Peppère, on the posterior surface of the thymus in the capsule or in its superficial interlobular grooves. In the thymus these bodies are often the seat of epithelial, tubular, or cystic formations. The structure of the parathyroids differs embryologically, histologically, and chemically from the thyroids. They secrete a colloid substance which does not contain, like the thyroid, iodine. When all the parathyroids are removed there is partial paralysis, especially of the extensors; trembling in all the muscles, followed by a series of convulsive attacks, with loss of appetite; there is often vomiting and dyspnea, which is replaced by polypnea during the convulsive attack. The temperature rises during the convulsions, which fact we have often observed. This tetany begins in twenty-four to forty-eight hours after the operation in the dog and cat. The dog generally dies from the second to the fifth day in convulsions. Robert Quest, in 1905, analyzed the brains of three infants dead by tetany and found the amount of calcium to be small. There was also a change in the proportion between the amount of sodium to that of calcium.

Oddo and Sarles found the urine in the tetany of infants to have an exaggerated amount of calcium phosphates. They explained the cause of tetany to be due to loss of calcium salts. Silvestri (1906) held that tetany and eclampsia could be explained by a diminution of the calcium in the organism.

Netter cured three cases of tetany in infants with calcium chloride by the mouth. MacCallum and Voegtlin confirmed the results of Quest as to the lessened amount of the calcium in the brain. They

also confirmed the results of Oddo and Sarles that there was an increased excretion of calcium in the urine. MacCallum and Voegtlin also found the calcium content in the muscles and blood to be one half the usual amount. Halstead has cured tetany in man due to the removal of the parathyroids in operations on the thyroid by calcium.

MacCallum and Voegtlin arrested tetany for twenty-four hours in dogs when seven grains of calcium lactate were given by the vein. Beebe has shown that injection of parathyroid extract causes the symptoms of tetany to vanish for a time, but death finally ensued, just as it did in animals after the use of calcium lactate. MacCallum and Voegtlin have discovered in parathyroidectomized animals 1, a marked reduction in the calcium content of the tissues, especially of the blood and brain; 2, an increased output of calcium in the urine and feces on the development of tetany; 3, an increased output of nitrogen in the urine; 4, an increased output of ammonia in the urine, with an increased ammonia ratio in the urine; and 5 an increased amount of ammonia in the blood.

Pfeiffer and Mayer found in the sera of six out of seventeen dogs which had tetany after removal of the parathyroids, a toxic principle. This was shown by experiments upon mice.

Berkeley and Beebe regard tetany to be due to a metabolic poison: 1, The symptoms have a central origin; 2, the symptoms are shown best in young animals and are more severe if the animal is kept on a meat diet; 3, the symptoms have a close relation to certain chemical conditions which are accompanied by severe nutritional disturbances; 4, gastric tetany is accompanied by severe metabolic disturbances, it has similar symptoms and is promptly relieved by intravenous injection of calcium and by parathyroid nucleoprotein; 5, bleeding followed by intravenous infusion relieves the animal, a procedure well suited to free the body from a circulating poison; 6, symptoms are promptly relieved by the injection of fresh parathyroid nucleoprotein; 7, injections of known simple poisons, such as ammonia and xanthin, produce symptoms which can be promptly relieved by injections of calcium or strontium salts similar to the relief obtained by the same means in tetany; 8, parathyroid tetany has a deranged metabolism accompanied by a large increase in the excretion of ammonia.

Beebe found that strontium acted equally as well as calcium in relieving tetany. Barium also relieves tetany. These facts indicate that calcium loss is only a part of the factors in the course of tetany.

Magnesium also relieves tetany, according to MacCallum and Beebe. Neither barium nor magnesium should be used, as they are toxic to the heart. Beebe found parathyroid nucleoprotein to relieve tetany. The globulin in parathyroids has no effect on tetany. The nucleoprotein will relieve tetany if given by the mouth, but is much more quickly and certainly effective when given subcutaneously or intraperitoneally.

Berkeley and Beebe are inclined to believe that the parathyroids are chiefly concerned in furnishing enzymes, which are of prime importance in the intermediary metabolism of nitrogen. They do not

believe that the abnormal excretion of calcium is the cause of tetany, but a deranged metabolism giving rise to an active poison.

Our experiments were made upon sixty cats and two dogs. One hundred and thirty-three observations were made on these sixty-two animals. The cats were first etherized; then the parathyroids removed under antiseptic precautions. The thymus was always examined for parathyroids. The cat has usually four parathyroids, but more may exist. In young cats, the parathyroids have a looser anatomical relation to the thyroid than later in life. In the cats the parathyroids are about the size of a date seed and have the color of a miliary tubercle. In many cases some of the thyroid was removed in the desire to obtain all the parathyroids, but enough thyroid was left to maintain its functions. When removal in part of the parathyroids was ineffectual to produce a tetany, then the thyroid was also removed and we always found it contained a parathyroid larger than the normal. In cats when all the parathyroids were removed symptoms of tetany came on in about forty-eight hours as a rule. The first symptoms were a slowness in movement and a state of apathy. The animals were disposed to remain in one place. First, as a rule, there developed a lifting of the posterior extremities and sometimes of the anterior, as though the animal had been stepping in water. The posterior extremities were stifflike in movement and spread apart in their gait. Then trembling ensued in the extremities, followed by convulsions of the whole body. In the convulsive state the animal usually made loud cries before and after the convulsion. Conjunctivitis was frequently noted in the tetania parathyreopriva. The sense of hearing, sight, smell, and taste remained. They did not respond to petting. They also had the projecting abdomen noted by Hagenbach.

In some old cats some time after removal of parathyroids and thyroids and careful examination of the thymus, no tetany ensued for two weeks. Now, Bell and Hick have shown that pituitary increases the calcium content of the blood. Hence, it is probable that the well developed pituitary of old animals was sufficient to delay the appearance of tetany, although the animals were kept on a meat diet, which favors tetany. We injected subcutaneously in animals with tetany about ten to twenty grains of pituitary extract, rubbed up with distilled water. Then in about three hours the vacillating, spastic gait disappeared, the tremor was replaced by steadiness, and the lifting of the feet as though wet with water disappeared. The head, which usually hung down, was elevated, and the whole bearing of the animal was changed. This continued for about twenty-four hours, when tetany reappeared. In no case were we able to prevent death by repeated injections of the pituitary. We also injected pituitary by the vein, but the best results were obtained by subcutaneous injections. That neither calcium nor its combination with other salts was concerned in the action of the pituitary was proved by the fact that incineration of the pituitary extract and the injection of the ash was not followed by any curative effect. The extract was subjected to intense heat in a capsule for a couple of hours, then the remain-

ing salts were dissolved in distilled water and injected subcutaneously and by the vein. All our observations show that it is an organic body in the pituitary which abates the tetany. We also tried pituitrin, an acidulated extract of the infundibular part of the pituitary. It was used subcutaneously in doses of 4 c.c. up to 28 c.c. It acts rapidly in the relief of tetany, but the action is much more fugitive than the pituitary extract. Pituitary extract by the jugular is not as effective as subcutaneously.

Adrenalin was given by the jugular, in the cat, and some improvement was noted.

Iodothyrene was also given by the jugular, and it had a quieting action upon the tremor.

Mammary gland, thymus, testicle, prostate, spleen, spinal cord (all rubbed up with distilled water), and Poehl's spermin had no effect upon the tetany; they were all given subcutaneously. Pancreas had a quieting effect in seven cases out of ten.

As to the comparative value of pituitary extract and calcium lactate, our experiments did not show any particular difference. The intravenous injection of calcium lactate passed off quickly, whilst the subcutaneous effect of pituitary came on slower and continued longer.

Pituitrin did not have the permanent effect that the gland substance did. Evidently in tetany the gland itself should be used, as there is something wanting in the pituitrin. It is inferrable that the infundibular lobe is the active part of the gland in antagonizing the tetany after the removal of the parathyroids.

As to the cause of tetany, we have two theories: One of defective calcification, held by Silvestri, Netter, Quest, and MacCallum; the other, that the removal of the parathyroids leaves a poison in the blood. (Pfeiffer and Mayer) or, according to Berkeley and Beebe, it is a poison generated in proteid metabolism.

Beebe's experiments showing that strontium will relieve tetany quite as well as calcium, indicate that defective calcification is not the whole cause of tetany, but only an epiphenomenon.

Our experiments show that:

- (1) Removal of the parathyroids alone causes tetany.
- (2) Pituitary extract will temporarily cure tetany.
- (3) Between the parathyroids and the pituitary there is a cooperative action.
- (4) The infundibular lobe contains the active principle.
- (5) Tetany is not due to a want of calcium but to a poison in the blood.
- (6) The removal of parathyroids in the cat produces paræsthesia, probably by an action on the centre of touch, shown by the lifting of the feet as though they were wet with water.

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ACUTE URÆMIA RESULTING FROM TURPENTINE.

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If we were as eager to exploit our mistakes in the treatment and diagnosis of our cases as we are to make known our cures, our consciences and the communities would be better off.

Not very long ago I was summoned to a suburb of this city, and not being apprised of the fact that it was an emergency case, I did not take medicine or instruments along. I found a colored girl about eighteen years old, lying upon the floor apparently unconscious, muscles rigid, with bounding pulse, pupils contracted, thumbs flexed upon the palms. History as given by the lady of the house was that the colored girl's previous health had been good, but that she had complained of headache and feeling bad the day before, for which she was given a dose of calomel, followed by Epsom salts, but to no advantage. Without premonition, as it was expressed, "she fell out" about 3 p. m. The only things that I had to work with were a fountain syringe, glycerin, and warm water. An enema was given without result. Repeated efforts to arouse the patient were unavailing. From the facts that the patient seemed so robust and the history was from an authentic source, I did not think that I had anything unusual to deal with, perhaps an hysterical fit or feigning. I saw her again at 8 p. m., when I saw no change.

I gave inhalation of chloroform, but only to find that after its effect had worn off she soon returned to her former condition. I gave two drops of croton oil on the tongue. It being rather late and some distance from the city, it was not an easy matter to get her to the hospital that night, but she was sent there on the next morning. While her urine was being examined, I asked a surgeon to examine the patient, wishing to give her the benefit of the doubt. He said he did not regard it as a surgical case. The report showed albumin in no small amount; by this time she had a temperature of 103° F., was profoundly comatose, with twitches of the muscles and Cheyne-Stokes breathing. There was no trouble then to make a diagnosis.

Her diet was restricted to liquids and a plenty of water given. Bowels were kept soluble by the free use of enemas and saturated solution of Epsom salts. For the high arterial tension nitroglycerin was employed with benefit; pilocarpine hydrochloride, grain one eighth, to produce diaphoresis; strychnine was given for the heart and respiration. Hypodermoclysis was employed as the indications required.

For the first three days there was every evidence of improvement and it was thought by all who watched the patient that she would recover. The temperature declined two degrees. The skin was performing its action well, as well as the kidneys and bowel, and at times patient regained consciousness, recognizing several persons.

Unfortunately, despite the fact that everything was done, she constantly grew worse and died on the seventh day.

Not very long after she died I was told by a colored woman who was her friend that the patient had admitted that her menstruation had stopped, and fearing that she was pregnant, took large quantities of oil of turpentine, which told the tale.

The care of this most distressing symptom of renal disease is frequently futile, but should be re-

sorted to with the fact in mind that splendid results sometimes occur when the case is properly managed. Regardless of what the onset may be, our efforts should be directed to the thorough elimination of toxic material which endangers life. This may be done by the bowels, skin, and kidneys. It is of great importance to support vitality until the emunctories have had time to act. The third indication is to prevent convulsions.

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Correspondence.

LETTER FROM HALIFAX.

The New Brunswick Medical Association—The Maritime Medical Association—The Medical Society of Nova Scotia—The Nova Scotia Sanatorium for Tuberculosis.

HALIFAX, August 10, 1909.

The annual meeting of the New Brunswick Medical Association was held in St. John, N. B., on the 20th and 21st of July, under the presidency of Dr. J. R. McIntosh, of St. John. The chief part of the president's address was devoted to sanitary matters, and referred in particular to the founding during the last year of the New Brunswick Antituberculosis Society and to the many public meetings held in St. John and other prominent places in the province to interest the public in fighting tuberculosis. The number of names on the medical register of New Brunswick is 276, nine having been added at this meeting. It was decided to hold the next annual meeting in St. John, as the Maritime Medical Association has decided to meet there in 1910; and the Canadian Medical Association, which has not met in St. John since 1894, will also be invited to meet there that year. The following officers were elected for the ensuing year: President, Dr. H. A. Murray, of Fredericton Junction; vice-presidents, Dr. C. T. Purdy, of Moncton, and Dr. G. G. Melvin, of St. John; treasurer, Dr. D. E. Berryman, of St. John; corresponding secretary, Dr. J. S. Bentley, of St. John; recording secretary, Dr. G. G. Corbet, of St. John. Steps were taken at this meeting to establish the five year course for New Brunswick. Reference was also made to the bill before the legislature last year for a new medical act, which, owing to heavy pressure from the opposition, had to be withdrawn.

The annual meeting of the Maritime Medical Association was held in Charlottetown, P. E. I., on the 14th and 15th of July. A communication was read from the secretary of the Canadian Medical Association, asking for affiliation of the three maritime medical associations with the national medical body, which communication was referred to a committee of three to report at the next annual meeting. Another communication was presented from the General Medical Council of Great Britain, stating that the five year course must be adopted before reciprocal registration could be secured with the British body. Still another communication was heard from Dr. T. G. Roddick, of Montreal, advocating reciprocity among the three maritime provinces as a step toward Dominion registration at large. Dr. F. Montizambert, director general of public health for Canada, was present and delivered an address on the subject of tuberculosis. He believed that greater good was derived from house

visitation by dispensary nurses than from sanatoria. Dr. J. B. Black, M. P., of Windsor, N. S., advocated the establishment of a central bureau of health for Canada. Lieutenant Colonel Carleton Jones, M. D., director general, Army Medical Service for Canada, was also present from Ottawa, and spoke of the proposed laboratory the Federal government was to establish in connection with the Canadian Army Medical Service. The following officers were elected: President, Dr. W. A. Ferguson, of Moncton, N. B.; vice-presidents, Dr. J. G. Macdonald, of Amherst, Dr. A. G. Ferguson, of Dalhousie, and Dr. A. A. MacLellan, of Summerside, P. E. I.; treasurer, Dr. D. D. Corbet, of St. John; secretary, Dr. G. G. Melvin, of St. John.

The fifty-sixth annual meeting of the Medical Society of Nova Scotia was held in Sydney, C. B., on the 7th and 8th of July, under the presidency of Dr. A. S. Kendall, M. L. A., Dr. J. R. Corston, of Halifax, acting as secretary. A recommendation of importance was that the Board of Health of Nova Scotia adopt the *Maritime Medical News* as its official organ, and furnish each registered physician with a copy free of charge. A communication was read from Dr. Arthur Macdonald, Washington, D. C., relative to the establishment of a laboratory under the Canadian government for the scientific and sociological study of the criminal, etc., asking that the society pass a resolution favoring the same. While the society was favorable to such a scheme, it was not considered a feasible plan, owing to the jurisdictions of the Federal and provincial authorities in these matters. The following resolution was, however, unanimously passed: *Resolved* that the society urge upon the Dominion government the great desirability of immediately establishing a Bureau of Health for Canada, which should be fully manned, generously equipped, and allowed the widest possible latitude in the study and control of conditions which favor the incidence and spread of disease, degeneracy, and crime. A special committee of three was appointed to consider and report upon the subject of affiliation with the Canadian Medical Association.

The Nova Scotia Sanatorium for Tuberculosis, situated at Kentville, N. S., was established by the provincial government of Nova Scotia in 1904, at a cost of \$20,000. It has always been presided over by a matron superintendent, but the medical profession, while recognizing the ability of the lady in charge, has been recently advocating that a permanent medical superintendent be placed in charge. There is a visiting physician located at Kentville, while all admissions are on the examination of either of two medical men located at Halifax. The maintenance rate is \$5 a week. From the 1st of June, 1904, to the 1st of June, 1909, there have been 298 patients admitted to the institution. Of this number, 245 are available for classification. This classification on admissions was as follows: Incipient cases, 73; advanced with favorable symptoms, 93; far advanced, 79. The conditions on discharge were as follows: Apparently cured, 52; improved, 123; not improved, 70. That the Kentville sanatorium is capable of doing good work is seen in the sixty per cent. of apparent cures in incipient cases. These compare favorably with the results secured in other similar sanatoria.

Therapeutical Notes.

The Preparation of Chromic Catgut.—The method followed by Christal (*The Lancet*, July 10, 1909) is as follows: Ordinary glass tubing two-fifths of an inch in diameter and of good thickness is cut into three inch lengths with a file and the edges rounded off in the flame of a Bunsen burner. A piece of tubing this size easily holds a thread of catgut ten feet long as commonly sold. The gut is wound in a single layer on the tubes, not too tightly, taking care not to twist or unravel it, and secured at both ends by the "first stage" of a "surgeon's knot." A piece of fine silk or cotton thread is then run through the tube and knotted outside. This facilitates the subsequent handling of the catgut in transferring it from one solution to another. It is then placed in a 1 in 1000 solution of chromic acid for forty-eight hours, when it becomes a rich brown color. It is then transferred without washing to a jar containing ordinary sulphurous acid. The catgut lies in this for a further period of twenty-four hours, when it assumes a greenish hue. From the acid the gut is finally placed in methylated spirit made up to 1 per cent. with thymol (approximately $4\frac{1}{2}$ grains of thymol to the ounce of spirit). For the whole process he uses three twelve ounce bottles, such as are commonly used for the dispensing of tablets in bulk. The mouths are wide and stoppered with cork. The threads, each fastened to a tube of catgut, are left hanging out of the mouth of the bottle, which is then stoppered with its cork. Extensive bacteriological examination of catgut prepared in this way shows it to be free from organisms. The catgut so prepared is sterile, antiseptic, very strong, and pliable, and its tensile strength may be relied upon for at least three weeks. Another point in its favor is the cheapness and ease of preparation.

The Treatment of Gout.—According to Luff (*The Practitioner*, July, 1909), gout is probably produced originally by an altered gastrointestinal secretion, which in its turn leads to an alteration of the toxins produced by one of the intestinal bacilli. Adequate removal of the intestinal contents at the commencement of a gouty attack always effects rapid diminution of the symptoms, and this is taken by the author as proof of the bacterial origin of the disease. Support is lent to this view by a knowledge of the fact that the classic remedies for gout check intestinal putrefaction, diminish the absorption of its products, or promote their elimination from the system. Colchicum, for instance, causes an immediate alteration in the amount and character of the intestinal secretion, while lead has the opposite effect, causing a diminution and alteration of the intestinal secretion when taken in small and long continued doses. In accordance with this understanding Luff recommends a free opening of the bowels as the initial treatment. After the administration of four grains of calomel, or of blue mass, followed by a saline aperient, water should be drunk freely, and no food should be taken for twenty-four hours.

For relieving the local pain felt in the affected

joint during a gouty paroxysm the author has found the following lotion most useful:

B	Sodium carbonate,	5m.
	Liniment of belladonna [B. P.].....	5m.
	Tincture of opium,	5m.
	Water,	q. s. ad. 5viii.

M.

A small portion of the lotion should be mixed with an equal quantity of hot water, and then poured on absorbent cotton previously arranged round the joint. The pack should be changed every four hours. In connection with the acute paroxysm no attempt at local depletion—such as the application of leeches to the inflamed joint, blistering, or incisions—should on any account be made, owing to the great liability of thereby extending the inflammatory condition, and so producing subsequent ankylosis or deformity.

Luff considers colchicum the most valuable drug for internal treatment. At the commencement a large dose of from thirty to forty minims of the wine of colchicum should be given, followed by a mixture containing in each dose from ten to twenty minims of the wine with from forty to sixty grains of potassium citrate, which should be administered three times a day. Potassium citrate, which is given for its combined properties of acting as a diuretic and of diminishing the acidity of the urine, may, if desired, be given as an effervescent mixture, using thirty grains of potassium bicarbonate to twenty grains of citric acid. Colchicum reduces the gouty inflammation, relieves the pain, and shortens the attack. It should only be taken under medical advice, and should never be given in such doses as to produce extreme depression; after the inflammation of an acute attack has subsided the doses of colchicum should be gradually diminished until it is left off.

A very useful method of administering colchicum, according to the writer, is in the form of its active principle, colchicine, which may be given in doses of from one-fiftieth to one-eightieth of a grain three or four times a day immediately after food. Only a few patients will tolerate doses of one-fiftieth of a grain, the contraindication of such a dose being the production of diarrhoea and intestinal griping. Dr. Luff considers the following a very useful pill:

B	Colchicine,	gr. 1/60;
	Extract of nux vomica,	gr. ¼;
	Extract of hyoscyamus,	gr. 1/2;
	Extract of gentian,	gr. i.

M. ft. pil. No. 1.

After the initial free purgation, as previously mentioned, it is not desirable to produce too free an action of the bowels. All that is necessary is to have a sufficient action to relieve portal congestion and intestinal catarrh. The following pill effects this purpose, in most cases, very well, Dr. Luff says. It is administered at night, and is followed up, when necessary, by a saline aperient in the morning:

B	Leptandrin,	gr. i;
	Iridin,	gr. i;
	Extract of hyoscyamus,	gr. 1/2;
	Compound extract of colocynth,	gr. ii.

M. ft. pil. No. 1.

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NEW YORK, SATURDAY, AUGUST 21, 1909.

THE PREVENTION OF VENEREAL INFEC-
TION.

In the August number of the *Military Surgeon* there is published a brief report, by Assistant Surgeon E. O. J. Eytinge, of the navy, of the results of measures to prevent venereal disease among the sailors of the *Ranger* on her recent return trip from the East to the United States. Out of 949 men allowed shore liberty at various ports, 256 reported that they had been exposed to the risk of venereal infection. Immediately on their return to the ship they subjected themselves to the prophylactic procedures ordered, and not one of them contracted gonorrhea or syphilis. Dr. Eytinge remarks that these favorable results are but confirmatory of those observed on the *Concord*, and he records his belief that, were the system rigidly carried out, venereal disease would be practically stamped out of the navy.

The ports at which the 256 men were exposed were Singapore (thirty men), Colombo, Ceylon (eight), Cairo (ten), Port Said (forty-four), Naples (forty-six), Villefranche (one hundred and nine), Gibraltar (five), and Hamilton, Bermuda (four). It may safely be assumed, we suppose, that gonorrhea and syphilis are generally as rife among the prostitutes of those ports as among women of the same class elsewhere, and the test will therefore be seen to have been severe. What length of time, on the average, elapsed between exposure and the appli-

cation of the prophylactic measures does not appear, but presumably it was not more than a few hours, for all men returning from liberty had been ordered to report at the sick bay immediately, and, if they had been exposed to venereal infection, to take treatment at once. A false report regarding exposure would, should the man subsequently show venereal disease, lead to his being reported as having disobeyed orders.

The instructions posted in the sick bay were substantially as follows: 1. Before coming to the sick bay, wash well with water and urinate. 2. In the sick bay wash well with the solution (a one to 2,000 solution of mercury bichloride). 3. Use the injection and hold it in the canal for three minutes (an injection containing three per cent. of protargol and fifteen per cent. of glycerin, only about a quarter of a fluid drachm being injected, so as to reach not more than the first inch of the urethra). 4. Rub the ointment (containing thirty per cent. of calomel) well into the whole penis and leave it on for two hours. Certainly these requirements cannot be called onerous; they are simple enough, and the success achieved with them on the *Concord* and the *Ranger* seems amply to warrant recourse to them on all the other vessels of the navy. It is futile to attempt to restrain the men from dangerous intercourse, and it is therefore desirable to try to protect them against the consequences that may happen but for medical intervention.

THE DOCTRINE OF CRITICAL DAYS.

Few indeed must be the physicians who nowadays pay any heed to the somewhat varying teachings of Hippocrates and Galen as to the proneness of the crisis of a disease to fall on some definite day, such as the seventh or the fourteenth, or at the close of a period amounting to a multiple or the half of seven or fourteen days. But the doctrine still lingers in the popular mind, and we meet with occasional indications of its survival, more or less modified, with members of the medical profession. Two years ago, for example, Dr. E. Pailhas, of Albi, contributed to the *Journal de neurologie* an article on psychic periodicity and alternations, having ten years previously brought out a book on periodicity in man in health and in disease; and we find in the *Progrès médical* for July 31st a rather commendatory analysis, by the same author, of a recent work by Dr. Hermann Swoboda entitled *Die kritischen Tage des Menschen*.

Swoboda's chief critical days are the twenty-third and the twenty-eighth or some multiple of one of those days. He does not limit their sway to the turns in the progress of disease, but looks on them

as accounting for the interval of calm which may separate certain systemic commotions from the disturbances which were their real cause. "For example," he says, "it will be noticed that a person facing the sudden death of a beloved parent shows himself perfectly calm at first, but after twenty-eight or twenty-three days his grief suddenly bursts forth with violence, lasts for twenty-three or twenty-eight days, and then subsides; or, what is still more frequent, some time subsequently an amelioration is produced, and this lasts till fifty-six or forty-six days later, when the paroxysm of suffering is renewed. And things may go on in this way for years. The longer the interval between cause and effect the more one loses sight of their relation to each other, until finally one knows not what to attribute the disturbances observed, and refers them to recent occurrences."

Furthermore, according to Swoboda, on these critical days one's faculties are apt to be notably impaired; lapses of precise diction and of memory occur, the orator is lacking in prompt repartee, the singer's voice fails, the marksman's aim proves false, and the billiard player's skill has deserted him. All this, it seems to us, is only a more formally elaborated equivalent of the unlucky gamester's remark "it's not my night"; only the element of rhythmical recurrence, if it really exists, is superadded. If such facts as Swoboda and Pailhas appear to believe in are actually common enough to serve as a legitimate foundation for a revised doctrine of critical days in the affairs of human life, they can hardly have escaped ordinary observation or failed to impress their significance upon the popular mind. It is reasonably sure that they have not been generally recognized as of frequent occurrence, and we are therefore skeptical as to their existence. Moreover, the multiples and fractions that figure in the doctrine seem to us to exemplify its weakness.

HÆMORRHAGIC NECROSIS OF THE PANCREAS.

Of recent years the diseases of the pancreas have engaged the attention of many investigators, and the term pancreatitis has come into general use. A study of three cases of pancreatic disease by Opie and Meakins (*Journal of Experimental Medicine*, July) has led these authors to the conclusion that the disease termed acute hæmorrhagic pancreatitis is not primarily an inflammatory process, but a necrosis of the parenchymatous tissue of the organ. They propose the term hæmorrhagic necrosis of the pancreas for the disease in place of the older term. They point out that the necrosis of the pancreatic cells may be caused by numerous chemical and mechanical factors, the most frequent of which is the

penetration of irritant material, such as bile and the contents of the duodenum, into the ducts of the gland. The inflammatory changes found in the pancreas in such cases are due to a secondary bacterial infection following on the necrosis and the hæmorrhage, if there is any effusion of blood into the pancreatic tissue. Gangrenous pancreatitis, Opie and Meakins point out, is a late stage of hæmorrhagic necrosis.

ACUTE SYPHILITIC MENINGITIS.

The predilection of syphilis for the central nervous system is well known, but usually the lesions have a chronic evolution, such as those found in general paralysis, locomotor ataxia, and chronic meningitis. It is an error to believe that the influence of syphilis is limited to these effects, because it may give rise to acute processes, and acute meningitis, which of recent years has been carefully investigated in France, is one of its most important acute manifestations. In an excellent thesis upheld in Paris in 1908, Raoul de Coudré describes two clinical types of acute syphilitic meningitis, namely, the acute secondary and the acute tertiary meningitis. The first mentioned type is characterized by its early appearance and its usual coexistence with cutaneous eruptions of a distinctly secondary nature. It is the clinical manifestation of meningeal reaction, which is only made evident at this period by a lymphocytosis of the cerebrospinal fluid.

The coexistence of the clinical and histological meningeal reaction with cutaneous eruptions might lead one to suppose that they corresponded to a true meningeal enanthema. Clinically, one is dealing with a diffuse meningitis without any phenomenon of localization and quite similar to the ordinary form of tuberculous meningitis, and it is from the latter affection that the diagnosis must be made. A cure can usually be wrought with mercurial treatment, and no pathological sequel occurs. Lymphocytosis of the cerebrospinal fluid is always present and is usually very marked. A recent autopsy made by Sézary showed that the lesions were disseminated and consisted in an infiltration of lymphocytes with circumvascular congestion.

Acute tertiary meningitis is quite different and undergoes its evolution in a rather latent way. It is characterized by very marked symptoms, such as acute delirium and convulsions, and by symptoms of a diffuse meningeal reaction and signs of localization, such as partial epileptoid attacks and paralysis of the limbs, face, or eyes. These phenomena may result in death, but they usually undergo regression, leaving behind various sequels and symptoms of chronic meningitis. The diagnosis between tertiary syphilitic meningitis and an attack of meningitis during general paralysis is often very difficult, and

so is that of tuberculous meningitis. A conclusion, however, may be reached if the patient's history is carefully gone into. The acute accidents during syphilitic meningitis are due to congestive outbreaks arising around the sclerogummatous lesions. Both these types of acute syphilitic meningitis have, consequently, quite a different prognosis. The secondary form can almost always be cured without leaving sequelæ, while the prognosis of acute tertiary meningitis must be more reserved, because it often leaves behind permanent lesions of the nervous system. In both, an intense mercurial treatment should be carried out.

ERRORS IN DIETETICS.

To the casual observer it seems that man has been living and eating quite to his satisfaction, and continuing to live until it was time to die, for centuries before the discovery of the law of the conservation of energy, and that he was quite well off in his blissful ignorance of the existence of such a law. Such a conception is still prevalent among those to whom the public look for advice concerning diet, and, unfortunately, this applies not only to the hosts of diet cranks and quacks who are so numerous these days, but to many who ought to know better, but to whom the mystic word "calory" brings no more practical idea than a misty recollection of laboratory technicalities. So far as the average healthy man is concerned, there is little danger of his restricting his diet to a point below the minimum daily requirement so long as he can get more, though doubtless many individuals—and in particular those girls who "can't eat any breakfast"—do suffer from undernutrition; but the physician who undertakes to prescribe various restricted diets, such as are thought necessary in the treatment of diabetes, obesity, etc., is treading on perilous ground and should make himself familiar with the actual fuel value of the food on which his patient is endeavoring to sustain himself.

In a paper read before the Section in Pharmacology and Therapeutics of the American Medical Association at the recent meeting in Atlantic City (see the *New York Medical Journal* for June 12th) Dr. David L. Edsall pointed out the danger of such indiscriminate restrictions in diet. Instances are not rare in which disastrous results have followed the administration of a diet which might have been recognized as insufficient to sustain life if it had been studied with reference to its energy yielding capacity. The obstacles to a practical application of our knowledge of food values may seem great at first glance, but reliable tables of the caloric value of food stuffs may be obtained from various sources, and if

one has the courage to attack the question, it is found to be far less complex than it appears, certainly a much simpler matter than the physiological action of drugs, with which every physician should be familiar. A knowledge of the minimum food requirement is just as important as a knowledge of the maximum doses of drugs, and he who fails to realize this fact is in constant danger of misdirecting those who apply to him for guidance.

TREPONEMA PALLIDUM IN THE URINE.

Barth and Michaux (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, July 22d) report a case of acute nephritis, occurring in the course of secondary syphilis, in which *Treponema pallidum* was found in the urine collected in the ordinary way. The patient was a woman, aged twenty-eight years, who also had mucous patches in the vagina.

In the discussion M. Queyrat called attention to the fact that these treponemata might have entered the urine from the mucous patches in the vagina, and remarked that the authors were not justified in their contention that they came from the kidney, in the absence of careful collection of the specimen of urine by sterile catheterism. Furthermore, we should like to add that the report does not show satisfactorily that *Spirochata refringens* was definitely excluded. This organism is frequently found both in the mouth and in the genital tract. The authors refer to reports of the finding of *Treponema pallidum* in the urine by Dreyer and Toepel, by L. K. Hirschberg, and by MacLennan, but no references are given to the publication in which the reports appeared, a circumstance which is to be regretted.

REPORTING CASES.

Instead of the single case paper, which, while interesting if it concerns a very rare ailment, may carry little which leads to a conclusion, why not organize correspondence circles, physicians in several vicinities uniting to write reports of cases of some particular disease? There are chess games by postal, and many other interesting uses of the postal system might be called to mind. It might be very profitable if physicians would arrange in some way to record cases and collate them. A moderate number of physicians might decide to record, for example, cases of pneumonia or of malarial disease or of scarlet fever. Each would keep careful notes and send them at a given time to a central committee or a secretary, who would arrange them. This would become a valuable clinical account and good material for publication.

Obituary.

JOSEPH ALISON SCOTT, M. D.,
of Philadelphia.

Dr. Scott died at Northeast Harbor, Maine, on Friday, August 13th, aged forty-four years. He was born in Philadelphia, and received his degree of doctor of medicine from the Medical Department of the University of Pennsylvania. After he was graduated he served as resident physician in the Pennsylvania Hospital and subsequently was physician to the out patient department and visiting physician to that hospital. Dr. Scott was a fellow of the College of Physicians of Philadelphia and a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, the American Medical Association, and the Pathological Society of Philadelphia.

He was a man of modest demeanor and of most kindly disposition. Those who worked with him, and who knew him best, will feel his loss keenly. He was a careful diagnostician, a skilful therapist, and a sympathetic physician. He had been ailing for several months, but few members of the profession in Philadelphia realized that his illness was serious. His early death comes as a shock to a large circle of friends.

HEINRICH MAX RUNGE, M. D.,
of Göttingen.

Professor Heinrich Max Runge, professor of obstetrics and gynecology in the University of Göttingen, died suddenly on July 27th, at the age of sixty years. Born in Stettin, he studied medicine in the universities of Jena, Bonn, Leipsic, Strassburg, and Vienna, and was graduated in 1875. In 1879 he became Privatdozent at the University at Berlin, and in 1883 was called to Dorpat as professor of gynecology and obstetrics. In 1888 he was appointed to the same chair in Göttingen, which he held until his death. Runge's textbooks on gynecology and obstetrics are well known; he was also the editor of the Prussian official textbook for midwives.

News Items.

Change of Address.—Dr. E. Gheury, to 89 Boulevard du Hainaut, Brussels, Belgium.

The New York Postgraduate Hospital has purchased the three three story and basement brick buildings at 302, 304, and 306 East Twenty-first Street, thus acquiring a site for an addition to the hospital.

The Massachusetts Board of Registration in Medicine announces that eighty new physicians, seven of whom are women, have successfully passed the examination which permits them to practise medicine in the State.

The Berkshire District, Mass., Medical Society will hold its summer meeting on the afternoon of Thursday, August 26th, at Lake Pontonosc. Dr. L. Bolton Bangs, of New York, is expected to be the guest of honor.

The Superintendency of the Army Nurse Corps.—Miss Jane A. Delano, of New York, has been appointed superintendent of the Army Nurse Corps, to take the place of Miss D. H. Kinney, who resigned several weeks ago. Miss Delano was formerly superintendent of nurses at Bellevue and Allied Hospitals, and is now president of the National Association of Nurses.

An Emergency Hospital at Lake Geneva, Wis.—The colony of well to do men who own summer homes at Lake Geneva, Wis., have taken steps to establish a thoroughly equipped emergency hospital there. Almost \$100,000 has already been subscribed.

Outdoor Schools for Tuberculous Children are in operation in some of the larger cities of the United States, and have proved very satisfactory. The establishment of such a school in Detroit is being considered by the Society for the Prevention of Tuberculosis, which intends to lay the matter before the board of education.

The Pennsylvania State Board of Examiners for the Registration of Nurses held a meeting on August 12th, and granted certificates to fifty young women. The members of the board include Dr. William S. Higbee, Dr. Albert E. Blackburn, Miss Roberta M. West, Dr. Alice M. Seabrook, and Miss Ida F. Giles.

Contagious Diseases in Chicago.—During the week ending August 7, 1909, 381 cases of contagious diseases were reported to the Department of Health, as follows: Diphtheria, 51; scarlet fever, 42; measles, 67; whooping cough, 90; tuberculosis, 85; pneumonia, 15; typhoid fever, 27; chickenpox, 10; mumps, 4; erysipelas, 1.

The Italian Medical Society, of New York, which was incorporated on July 2d, has elected the following officers: Dr. A. Stella, president of the committee; Dr. F. Samarelli, Dr. G. Grana, Dr. L. Criscuoli, and Dr. G. Di Santi, members of the committee; Dr. A. Vernaglia, treasurer; Dr. R. Bellantoni, secretary; Dr. R. Muoio, Dr. N. Morano, members of the committee on audit.

The Reporting of Cases of Transmissible Diseases.—The health authorities of Philadelphia are entering a protest against the dilatory habits of physicians in reporting transmissible diseases. In one day there were sixteen cases of typhoid fever reported that were from one week to two months old. The acting chief of the Bureau of Health says that the dilatory physicians are liable to fine for failure to report the cases when they occurred.

Improvements at New York State Institutions.—Plans are being prepared by State Architect Ware for additional buildings and improvements at State institutions, appropriations for which were made by the last Legislature. Among these plans are improvements to the Central Islip Hospital, Long Island, and to the Kings Park Hospital, to cost \$300,000 each, and additions to the Manhattan State Hospital for the Insane, Ward's Island, to cost \$150,000.

New York Department of Charities Makes Requisition for a Larger Appropriation.—The opening of new hospitals is the reason given by Commissioner Hebbard for asking for an increase of \$1,241,243 over the 1909 budget allowance, putting the needs of the department for the coming year at \$3,758,599. The sum allowed for the current year was \$2,517,356, which was afterwards supplemented by an allowance of \$380,000 to meet the cost of opening the Coney Island Hospital.

An Automobile Race for Charity.—Arrangements are being made by the Quaker City Automobile Club for a three hundred mile race to be given in Fairmount Park, on October 9th, in the interest of charity. It has been estimated by the committee that at least \$25,000 will be realized, which will be equally distributed among the following institutions: Rush Hospital, the Pennsylvania Society for the Prevention of Tuberculosis, the White Haven Sanatorium, and the Children's Aid Society of Philadelphia.

The Narcossee, Fla., Sunshine Home and Sanatorium for Consumptives, established by Dr. John E. Ennis several years ago, has been presented to the State by Dr. Ennis, to be used as a hospital for consumptives of limited or no means. A meeting of the State Board of Health has been called, at which time contracts will be made for many improvement and additions to the home. Within six months it is expected that the sanatorium will be in full operation, with a complete staff of physicians and trained nurses to carry on the work.

Personal.—Dr. J. L. Borsch, Jr., of Philadelphia, has received a decoration from the Italian Government for professional services rendered to the King of Italy.

Dr. Herbert D. Pease, director of the New York State Hygienic Laboratory, has resigned his office, to take an important position in a commercial bacteriological laboratory in New York. Dr. Pease has been in the service of the State Department of Health since 1901, and has always been a leader in educational work along public health lines, and has been closely associated with the work of committees for the prevention of tuberculosis.

The Nassau Hospital, at Mineola, Long Island, has just been presented with a forty horse power automobile ambulance, the gift of Mr. Roswell Eldredge. A bacteriologist has also been provided for the hospital, whose services will be free to physicians, and two wards of the hospital have been thrown open to physicians of the county who were formerly compelled to take their patients into private rooms, which were often more expensive than the patient could afford.

The Philadelphia Clinic for the Free Treatment of Diseases of the Throat and Chest is now established in its new home at 2174 Lombard Street. The principal object of this clinic is to aid in the work of curing tuberculosis among the poor of the city, though the prevention of the disease is also included in its plans. On Mondays, Wednesdays, and Fridays, after 3:00 p. m., these clinics are open for patients, while on the other days of the week visits are paid to those who are unable to visit the rooms of the association.

The New Leper Hospital on Penikese Island.—Work on this new hospital is now under way. Plans have been accepted by the Massachusetts State Department of Charities and work on the foundation has been started. When completed the new building will have accommodations for about forty-five patients, but at present only the first floor will be completed, the second floor being added when more room is needed. Whether the work on the building is to be done by day labor, under the supervision of Dr. Parker, superintendent of the hospital, or is to be given to a contractor, has not been determined.

New Municipal Hospital for Contagious Disease Needed in Buffalo.—A committee consisting of members of the Buffalo Academy of Medicine and the Medical Society of the County of Erie made a thorough investigation of the present hospital building, and pronounced it utterly unfit for the purpose for which it was used. The physicians who made the investigation were unanimous in their opinion that the city should no longer delay in making an appropriation to be used either in building an entirely new hospital or in completely renovating the old one. It is believed that fully \$200,000 will be needed to do the work.

An Extensive Red Cross Organization Planned in England.—Proposals have been issued by the War Office for a great voluntary Red Cross organization in connection with the territorial army plan. It will be worked in connection with the existing Red Cross Society and St. John's Ambulance Society, and in the event of an invasion would cover the entire country with a network of Red Cross associations. Men and women of all classes are invited to become volunteers to be trained in detachments in every territorial area as nurses and stretcher bearers, and in every branch of the Red Cross service, utilizing country and local resources for hospitals, &c.

A Separate Building for the New York Department of Health.—Dr. Walter H. Bensel, sanitary superintendent of the New York Department of Health, has submitted a plan to the department for the separate housing of the various offices and laboratories of the Department of Health, at an initial expense of approximately \$300,000. Dr. Bensel's recommendations, which have been adopted by the department, involve the purchase of the twelve story office building now in course of construction at the southwest corner of Irving Place and Sixteenth Street. The plan, however, is considered rather an expensive one, in view of the fact that the city is now building a \$7,000,000 municipal building with a view to accommodating all its administrative departments under one roof, and no definite action has been taken in the matter.

The Oliver Wendell Holmes Celebration.—The centenary celebration in honor of Dr. Oliver Wendell Holmes as an author will be held in New York on August 29th, and his fame as a physician will be celebrated on October 9th by the Medical Society of the County of New York at the New York Academy of Medicine. Dr. Irving Wilson Voorhes is chairman of a committee appointed by the society to plan the celebration, and the programme which has been arranged includes the following addresses: Personal Reminiscences of Dr. Oliver Wendell Holmes, by Dr. M. H. Richardson, of the Harvard Medical School; Dr. Holmes's Achievement as a Physician, by Dr. Edward O. Otis, of Boston; and The Many Sided Holmes, by Dr. William H. Thomson, of New York. Dr. Oliver Wendell Holmes was for thirty-five years professor of anatomy in the Harvard Medical School. He studied medicine abroad, and was in active practice for a number of years.

A Campaign Against Tuberculosis in Kentucky.—Plans are being made for a convention to be held early this fall, which will last two days, and at which every county in the State will be represented, for the purpose of organizing a State association for the prevention of tuberculosis. The Committee on Arrangements have the plans well under way, and announcement will soon be made as to the time and place of meeting. The programme will include a series of lectures and addresses by specialists and experienced workers. It is said that there is great need for such an association in Kentucky, as the facilities for the care and treatment of tuberculosis patients are wholly inadequate.

Prize Offered for a Design for a Christmas Stamp.—A prize of \$100 has been offered by the Wisconsin Antituberculosis Association for the best design for a Christmas stamp, which will be sold during the holiday season to replenish the funds of the association. Last year the association used the Red Cross Christmas Stamp adopted by the National Red Cross Society, but this year the work will be carried on with the Wisconsin Christmas Stamp. The competition closes on September 1st, and all communications should be sent to the headquarters of the Christmas Stamp Committee of the association, 121 Wisconsin Street, Milwaukee. Mr. Louis Gimbell is chairman of the committee. solicitation will be held in Millersburg.

Medical Care of Visitors at the Hudson-Fulton Celebration.—Fifteen hundred nurses have already offered their services to aid the executive committee of the Hudson-Fulton Commission in looking after the health of the visitors who are expected to attend the celebration in New York next month. The plans of the committee include the establishment of emergency hospitals all over the city, with nurses, orderlies, and physicians on duty all hours of the day and night, and the erection of six army tents. Each hospital and tent will contain twelve cots. Ambulances will be stationed all over the city, and special arrangements will be made with both public and private hospitals. Rest stations, many of them in churches, will be established all over the city, with nurses in attendance. Particular attention will be paid to caring for the crowds during the days of the land and naval parades.

Mosquito Extermination in New Jersey.—Professor John B. Smith, head of the New Jersey State Entomological Experiment Station, has just finished a tour of inspection of five counties where the lowlands, salt marshes, and meadows have been drained to rid them of mosquitoes, and the unanimous testimony of the residents interviewed was that the salt water mosquito had been practically eliminated. The counties which have been rid of the pest are Essex, Union, Middlesex, Monmouth, and Ocean, the most populous counties in the State. Altogether in the six years since the campaign of mosquito extermination began ten thousand acres of land have been drained, at an expense of \$5 an acre, and not only have the mosquitoes been exterminated, but the land has been rendered valuable for agricultural purposes. In carrying on the work, Professor Smith has also acquired much fresh knowledge regarding the life history of the salt water mosquito. So successful has been the campaign, that Professor Smith now has the enthusiastic support of local associations of taxpayers in carrying on the work, though in the beginning he worked practically alone.

Gifts and Bequests to Charity.—By the will of Gustave Bernatz, the German Hospital, of Philadelphia, will receive \$500.

By the will of Colonel Thomas Emmet Addis, who died in New Haven, Conn., on Monday, August 9th, the entire estate of about \$350,000 has been left to charitable institutions in New Haven. Nearly every institution in the city is remembered in the will, but the principal bequests are \$100,000 each to Grace and the New Haven Hospitals.

The will of John Edward Brown includes the following bequests: Perkins Institution for the Blind, Boston, \$100,000; Gwynne Temporary Home for Children, Boston, \$20,000; Industrial School for Crippled and Deformed Children, Boston, \$20,000; Home for Incurables, Chicago, \$50,000; Home for Aged Men and Women, Providence, \$25,000; Home for Aged Women, Providence, \$25,000.

By the will of La Mott Thompson, of Utica, N. Y., Mrs. A. T. Bailey, a sister of the testator, will receive the interest on \$20,000, and at her death the fund will go to the Homeopathic Hospital.

By the will of John L. Evans, the Buffalo Children's Hospital will receive \$1,000 to endow a free bed.

The Health of Pittsburgh.—During the week ending August 7, 1909, the following deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Typhoid fever, 17 cases, 0 deaths; scarlet fever, 6 cases, 0 deaths; diphtheria, 3 cases, 0 deaths; measles, 1 case, 3 deaths; whooping cough, 12 cases, 0 deaths; pulmonary tuberculosis, 34 cases, 3 deaths. The total deaths for the week numbered 127 in an estimated population of 572,000, corresponding to an annual death rate of 11.54 in a thousand of population.

Infectious Diseases in New York:

It is indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 14, 1909:

	—August 7—		—August 14—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	532	135	431	158
Diphtheria	307	15	173	20
Measles	259	19	217	19
Scarlet fever	70	4	8	0
Smallpox	..	..	..	..
Varicella	14	..	17	..
Typhoid fever	72	14	71	9
Whooping cough	45	0	44	13
Cerebrospinal meningitis	5	0	4	5
Total	1,007	197	1,042	227

The Mortality of Chicago.—According to the weekly bulletin of the Chicago School of Sanitary Instruction, during the week ending August 7, 1909, there were reported to the Department of Health 526 deaths from all causes, corresponding to an annual death rate of 12.33 in a thousand population. The annual death rate for the preceding week was 13.36 in a thousand population, and for the corresponding period in 1908 it was 15.81. The total infant mortality for the week was 204; 142 under one year of age, and 62 between one and five years of age. The deaths from important causes were as follows: Diphtheria, 9; scarlet fever, 3; measles, 4; whooping cough, 6; typhoid fever, 1; diarrheal diseases, under two years of age, 128, over two years of age, 12; pneumonia, 34; tuberculosis, pulmonary, 58; other forms of tuberculosis, 9; cancer, 28; nervous diseases, 16; heart diseases, 46; apoplexy, 10; Bright's disease, 33. There were four deaths from sunstroke, and six suicides.

Vital Statistics of New York.—During the week ending August 7th, there were reported to the Department of Health of the City of New York 1,439 deaths from all causes, corresponding to an annual death rate of 16.45 in a thousand population, as compared with a death rate of 16.74 for the corresponding week in 1908. The death rate in each of the five boroughs for the week was as follows: Manhattan, 16.02; the Bronx, 18.74; Brooklyn, 16.20; Queens, 16.19; Richmond, 24.76. The total infant mortality was 664; 501 under one year of age, 100 between one and two years of age; and 63 between two and five years of age. The deaths from important causes were as follows: Contagious diseases, 50; malarial diseases, 1; whooping cough, 16; pulmonary tuberculosis, 135; cerebrospinal meningitis, 6; bronchitis, 12; diarrheal diseases, 359; diarrheal diseases, under five years of age, 353; pneumonia, 26; bronchopneumonia, 62; cancer, 58; organic heart diseases, 93; Bright's disease, 80. There were four deaths from sunstroke and ten suicides. There were 113 stillbirths.

The Health of Philadelphia.—During the week ending August 7, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 49 cases, 0 deaths; scarlet fever, 17 cases, 0 deaths; chickenpox, 6 cases, 0 deaths; diphtheria, 43 cases, 9 deaths; measles, 17 cases, 1 death; whooping cough, 10 cases, 1 death; tuberculosis of the lungs, 109 cases, 42 deaths; pneumonia, 13 cases, 8 deaths; erysipelas, 3 cases, 2 deaths; septichæmia, 2 cases, 0 deaths; anthrax, 1 case, 0 deaths; mumps, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 8 deaths; diarrhoea and enteritis, under two years of age, 91 deaths; cholera morbus, 1 death; dysentery, 1 death. The total deaths numbered 450 in an estimated population of 1,565,569, corresponding to an annual death rate of 14.94 in a thousand of population. The total infant mortality was 172; 144 under one year of age, and 28 between one and two years of age. There were 25 stillbirths; 14 males and 11 females. There was no precipitation. There were 5 deaths from heat and sunstroke.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 5, 1909.

1. The *Ætiology of Tumors Considered from the Standpoints of Congenital Tumors and Tumors Following Repeated Injuries*, By S. B. WOLBACH.
2. On the Surgical Significance of Pus, Blood, and Bacteria in the Urine, By E. A. CODMAN.
3. Superficial Dermatitis of the External Auditory Canal, By CLARENCE JOHN BLAKE.
4. Psychasthenia, By A. H. RING.

1. The *Ætiology of Tumors*.—Wolbach presents data which support the belief that the congenital tumors and tumors of infancy and early childhood most commonly take origin from isolated or misplaced cells. At least we have very positive evidence that certain tumors, such as the teratomata, hypernephromata, mixed tumors of the kidney and parotis, and the retinal tumors, arise from such errors of development. He then shows that in the cases of x ray carcinoma and a few other instances, such as Bilharzia disease and Kangri carcinoma, there is a proved causal relationship between malignant tumors and antecedent pathological processes. The more peculiar the source of the injury, the greater is the value of the evidence when the association is marked by a strikingly large number of cases. The similarity in the evolution of the skin carcinoma in widely different kinds of exposures points to a common underlying process whatever the nature of the injurious agent. In the cases of x ray carcinoma and Bilharzia carcinoma, there is a proved similar antecedent pathological process. X ray carcinoma is to be regarded as the first instance of an experimentally produced malignant tumor. Its occurrence following definite lesions of the skin of a continuous and progressive character, places the whole subject of carcinomata following repeated injuries upon a firm basis. It designates this field of investigation as the most promising one for research into the origin of carcinoma, because we have at least one and perhaps several examples of proved causal relationship. The facts presented do not speak for belief in simple trauma as a cause for tumor production. They do indicate that long continued progressive lesions of connective tissue supporting epithelium are responsible for the acquisition of malignant properties by the epithelium. This belief is not so far removed as it would at first appear from the hypothesis of von Hansemann, who believes that the malignant property of epithelium is a primary disease. There is no incompatibility in a theory which holds to the idea that similar properties may be acquired by years of changed environment and nutrition. Finally, our author says, it may be said that no series of experiments upon animals, in the attempt to produce tumors, has ever been carried out which in any way approached duplication of those conditions we find in man associated with the production of cancer. The element of time is perhaps the most important factor. Many years always elapse between the onset of the antecedent pathological process and the occurrence of cancer. In the case of the x rays ten years is perhaps the shortest period. But the magnitude of the problem and the value of the results should justify

the expenditure of time and money necessary to more adequately investigate this field of the cancer problem.

4. **Psychasthenia.**—Ring says that Janet, who coined the word "psychasthenia," intended to include under the term obsessions, manias of doubt, tics, agitations, phobias and the deliria of contact, states of anxiousness, neurasthenias and bizarre sensations of strangeness and depersonalization. These he would group together into a grand psychosis similar to hysteria and epilepsy. Psychasthenia is at base a disturbance of the feelings, the will, and perception, and may range from mere eccentricities in the superficially normal through mild depression to melancholia and dementia. There are two types, (1) those in which the disturbance shows itself principally in motor fatigue, and (2) those in which the principal affection is in the sensory motor and emotional sphere, the latter offering the less favorable prognosis. Phobias result from an unhealthy, prolonged feeling tone of depressing ideas, and may be conscious or subconscious. Doubts and indecisions are evidence of fatigue of the higher centres which preside over formative and newly synthesized associations. The final judgment is thus rendered difficult or impossible, and the victim finds himself in a state of vacillation and with a tendency to revert to the lower and simpler associations long formed. Weakened cerebral inhibition also plays its part. Obsessions and impulsions are the emotional result of these factors, and show themselves principally as a failure to inhibit the feeling tone of ideas automatically repeated, yet the all prevailing asthenia checks the impulses short of accomplishment. Psychasthenia should be distinguished from hysteria, epilepsy, dementia præcox, manic depressive insanity, and paresis. The treatment is largely prophylactic and educational.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
August 14, 1909.

1. What the Individual Physician Can Do to Improve the Materia Medica, By REID HUNT.
2. Certain Ideals of Medical Education, By CHARLES S. MINOT.
3. The Science of Clinical Medicine: What It Ought to Be and the Men to Uphold It, By S. J. MELTZER.
4. Need, Methods, and Value of Medical College Inspection, By N. P. COLWELL.
5. Methods and Objects of State Examinations, By W. T. COUNCILMAN.
6. The Moving Picture Show a New Factor in Health Conditions, By HOWARD D. KING.
7. Help the Mother Nurse the Child. A Plea to Physicians not to Begin Artificial Feeding without First Trying to Help the Mother Maintain Her Milk Supply, By MAURICE OSTHEIMER.
8. Middle Milk Mixtures, By ALFRED F. HESS.
9. Etiology and Treatment of Summer Diarrhoea of Infants, By C. G. GRULLEE.

6. **The Moving Picture Show a New Factor in Health Conditions.**—The moving picture show has taken the place of smaller theatres and of so called variety performances to such an extent that its competition is severely felt by the theatrical profession. King has made an examination of such moving picture shows, and remarks that a great deal of eye trouble is due to moving picture shows. The singers, musicians, and film operators of these reports fall an easy prey to tuberculosis through excessive vocal efforts, constant confinement, irregular

habits, and long hours. As a disseminator of tuberculosis the moving picture theatre ranks high, and it will become necessary to enact special health laws to remedy the evil.

7. **Help the Mother Nurse the Child.**—Ostheimer reiterates the immense importance of breast feeding and reports his results, achieved by persuasion, advice, encouragement, and perseverance in the overcoming of difficulties, few of which are found on investigation to be as real as young mothers think them. That this experience may help others to obtain like results is his hope, so that every woman may try, for a time at least, to nurse her offspring, an act which is sure to be followed by a generation of stronger individuals and by a great decrease in infant mortality.

8. **Middle Milk Mixtures.**—Hess reminds us that when milk is allowed to stand the bacteria are carried upward with the fat globules so that the cream layer contains a far greater number of microorganisms than the underlying skim milk. This teaching has been corroborated many times, although it has been frequently forgotten in practice and in experiment. He has used the middle milk mixtures mainly in the dispensary, prescribing them to women who are certainly not endowed with more than average intelligence. These mothers were given the following directions: Remove the upper two ounces of cream and keep it for table use. Then dip off the next eight ounces of milk. (This furnishes them with a standard ten per cent. cream.) They are then directed to dilute a certain number of ounces of this cream with water or barley water according to the age or condition of the infant. If a twelve per cent. cream is preferred as a basis, 7 instead of 8 ounces of middle milk, is ordered removed; if a seven per cent. cream is desired, 12 ounces are removed. It is certainly a very simple matter to carry out these directions. The only possible disadvantage is that there are fewer ounces of cream as a basis than in top milk mixtures; for example, whereas we are able to obtain 16 ounces of seven per cent. top milk from the bottle, we can have only 12 ounces of middle milk. We can not hope to obtain clean middle milk from dirty whole milk, but it is certainly true that the more contaminated the milk the more is to be gained by removing the upper two ounces. And, on the contrary, the better the milk, that is to say the more nearly it approaches the standard of certified milk, the less is to be accomplished by this process. At present there can be no question but that comparatively little of the milk fed to the infants of the large cities approaches this latter standard. If the milk is contaminated by pathogenic bacteria, for instance, by tubercle or typhoid bacilli, the dose of these bacteria fed in the middle milk will be much less than that in the top milk.

MEDICAL RECORD

August 14, 1909

1. The Military Obligations of the Medical Profession, By JEFFERSON R. KEAN.
2. Some Features of the Medical Department of the Navy in Peace and in War, By CHARLES F. STOKES.
3. The National Guard Surgeon, By WILLIAM G. LE BOUTILLIER.
4. The Hygiene of the Regiment, By HARLOW BROOKS.
5. Instruction of the Hospital Corps, By EDMUND PRINCE FOWLER.

6. Medical Education in France and Germany.
By EUGENE ST. JACQUES.
7. Traumatic Hysteria in Its Relation to Surgery.
By BRADFORD C. LOVELAND.
8. The Hygiene of the Air Passages.
By ADONIRAM B. JUDSON.
9. Skin Disinfection with Iodine in Abdominal and Other Operations.
By CHARLES JEWETT.

6. Medical Education in France and Germany.

—St. Jacques thus tabulates his final remarks, comparing German and French medical education: Laboratories are more numerous and more completely equipped in Germany—the government being more lavish. Then again research work is extensively carried on at every German university. Germany seems to be the land of investigation in the scientific field. Not that other countries are inactive in this direction, but they do not carry it on on such an extensive scale. Nevertheless there are two other points where Paris surely stands equal to any other rival, not to say more—these are dissection and bacteriology. As for clinical facilities they are superior in France—for the teaching is of a higher grade, and then the daily access to the wards and patients gives it a most practical character and allows of more personal work. As regards postgraduate work, it is more practically organized in Germany—but from a certain point of view—he alludes to the vacation courses. Should a physician from the country or from a foreign land have only a few weeks to spare, he can run to Berlin in October or April, sure of finding during four weeks or so courses in clinical lectures covering every branch of medicine. This method of postgraduate work—for men in a hurry—is not yet so perfectly, so completely organized in France as in Germany—though immense strides have been made in that direction of late years. But what already exists in that line is more practical than in Germany, because it rests on ward work, on personal contact with the patient, and not purely on simple amphitheatre demonstration. As to the future specialists who must give many months, many years to preparatory work. Paris offers unsurpassed advantages and unrivalled facilities, particularly in skin, genitourinary, and nervous diseases, and in surgery.

8. *Hygiene of the Air Passages.*—Judson remarks that the mechanics of clearing the air passages have not received much attention. He believes that a brief review of the facts will show that it is desirable to omit so far as is practicable customary efforts to obtain relief. The muscles brought into action are among the strongest in the body. They are the great expulsive groups of the chest and abdomen, capable of acting with extreme violence. In clearing the throat, the glottis is contracted and the rush of air displaces mucus that may have burdened the vocal cords. This action may be necessary after prolonged vocalization, but it easily becomes an obnoxious habit. In blowing the nose, a column of air is applied under pressure for the removal of mucus from the nasal passages. This also is necessary at times, but it is an action to be avoided if possible. It may be objected that failure to act leaves the face unclean. The removal of what appears on the surface calls for attention in any case, and occasionally, as in acute catarrh and hay fever, the annoyance may be extreme. The best must then be done in a bad situation, in which it

should be recalled that the less the air ducts are disturbed the less will be the discomfort and the shorter the road to recovery. In coughing, the power of the expulsive muscles is displayed in severe compression alternating with sudden release and agitation of the whole respiratory apparatus, while the compressed air is driven through the tubes with violence which reminds one of the action of a steam pencil, wanting only the mordant agent to become an excoriating sand blast. The custom of resorting to this form of violent exercise can surely be modified by intelligent effort. It is not easy to ignore laryngeal irritation and temptations to cough when the habit is fixed. Expectoration, when unavoidable, may be facilitated by assuming for a moment an attitude in which the direction of the air passage is changed from the vertical to a downward inclination, when gravitation and a slight effort provide a harmless exit. It is generally known that sneezing may be prevented by pressing with the finger in the median line at the junction of the nose and upper lip. This stops the desire to sneeze by interfering with the nervous excitement which precipitates the spasm. Another way, novel perhaps, is to empty the lungs by a forcible expiration just before the muscular spasm is expected. The sneeze then takes place with the usual sensation, but there is very little noise and no column of air is sent through the passages as in the ordinary convulsion.

BRITISH MEDICAL JOURNAL.

July 31, 1909.

1. President's Address, By SIR WILLIAM WHITLA.
2. Address in Medicine, By R. W. PHILIP.
3. Address in Surgery, By ARTHUR E. BARKER.

This issue of the *British Medical Journal* contains the report of the seventy-seventh annual meeting of the British Medical Society, held at Belfast, July 23rd to 27th. In the presidential address Sir William Whitla gave a survey of the state of medical education, mentioning necessary reforms; and reviewed a history of the Belfast Medical School, Queen's University. The address in medicine was delivered by R. W. Philip, who spoke on progressive medicine and the outlook on tuberculosis; while in his address in surgery Arthur E. Barker took as subject the progress in intestinal surgery.

THE LANCET.

July 31, 1909.

1. Presidential Address, By SIR WILLIAM WHITLA.
2. Address in Medicine, By R. W. PHILIP.
3. Address in Surgery, By ARTHUR E. BARKER.
4. Chronic "Rheumatic" Myositis (*Muskelschwüelen*), with Cases showing some Common Errors in Diagnosis, By N. S. YAWGER.
5. Case of Missed Labor Treated by Abdominal Section, By C. E. PURSLOW.
6. A Case of Incarceration of the Vermiform Appendix containing a Foreign Body (Pin) in the Sac of an Inguinal Hernia in a Child, By THOMAS H. KELLOCK.
7. A Case of Angioneurotic Œdema Associated with Cirrhosis of the Liver, By S. G. CORNER.
8. The Place of the Poor Law Medical Officer in a Unified County Medical Service, By MRS. SIDNEY WEBB.

4. Chronic "Rheumatic" Myositis (*Muskelschwüelen*).—Yawger refers to a paper read by him at the January meeting of the Philadelphia Neurological Society on Indurative Headache. He says that among the causes affecting chronic rheumatic myositis is heredity, there being a distinct family

tendency to these diseased muscles. The effects of climate and weather are most marked. Chilly and rainy weather often causes the indurations to become painful; it is sufficient to be within the outer limits of storm conditions and not necessarily within the area of rainfall. They may appear at almost any time of life. While probably no voluntary muscle enjoys an immunity there are sites of predilection, the most common of which are in the muscles of the head and neck. This is due to the exposure through lack of covering, to which this part of the body is necessarily subjected. The gluteal, lumbar, and deltoid regions, and calf muscles are often involved. The muscles may be invaded at their points of insertion, as in those attached to the superior curved line of the occipital bone and those inserting into the processes of the upper cervical vertebrae, or the infiltrations may appear within the bodies of the muscles as is frequently seen in the abdominal walls, and in the sternomastoid muscles near the level of the thyroid cartilage. At times the infiltration extends to the periosteum to which the muscles are attached and also to the fascia. The pathology of these diseased muscles is largely hypothetical for the reason that people do not die from this condition. By some it has been thought to be of nervous origin, but Vogel in sections from rheumatic muscle found thickening and adhesion of the neurolemma to the nerve branches supplying the muscles, a finding which does not strengthen the neurogenous hypothesis of this condition. Oppolzer, from his studies, believes the lesions are not inflammatory in character, a view which does not coincide with that of Helleday. The muscle infiltration may be due to the deposition of an excess of the salts of uric acid or an allied substance, with the later formation of connective tissue. It seems probable that this formation of indurations is a manifestation of a metabolic disturbance autotoxic in character. At all events it appears that as soon as good circulation is established relief is at once experienced. Whatever this muscle poison is, many of its subjects have had bilious attacks in childhood, and in advanced life they often suffer from arteriosclerosis. These infiltrations or myositides may "make up" over night; they are frequently absorbed but tend to recur. After appearing again and again at the same point they finally become chronic, and then vigorous treatment is necessary for their removal. The enlargements present a different feeling upon palpation, depending largely upon their duration; the longer they exist the firmer they become and the more resistant they are to treatment. Those of recent development are known as swellings and feel doughy to the touch; others because of their firmer consistency are spoken of as offering resistance; and finally those of long standing show cartilagelike thickenings and are known as indurations. They also vary in size and in the intensity of the pain which they occasion. There may be a diffuse and extensive infiltration which causes but little inconvenience and which may not manifest itself except during action of the involved muscle, as is seen in the milder cases of lumbago. Again, small patches may give rise to frequent and excruciating pain and this is not unusual in the abdominal muscles, where shotlike enlargements are often found. As treatment the author advises local

treatment in the form of manual massage and rapid vibration, delivered by an electric motor.

5. Case of Missed Labor Treated by Abdominal Section.—Purslow reports such a case in a woman, thirty-three years of age, married twelve years, who had had four children and the year previously a missed abortion. She was admitted to the hospital in September, 1907. In February she had felt fetal movements; these continued up to June and then entirely ceased; since that time she had suffered from a rather severe constant pain in the abdomen from which she was very anxious to be relieved. On examination she was found to present the signs of full term gestation, but there was very little liquor amnii, and the uterus was hard and felt as though it were in a continual state of tetanic contraction; it was tender on palpation. The cervix was not typically softened and the os was closed. Two days after admission she was placed in the lithotomy position under anaesthesia with the intention of dilating and evacuating the uterus; it was found impossible to pass a Hegar's dilator into the uterus and the same was the case with the uterine sound. As Purslow was at a loss to explain this he suspected a fibroid in the lower segment. He therefore opened the abdomen and removed the uterus by panhysterectomy. The wound healed by first intention and the patient made a good recovery. The uterus was closely moulded to the foetus; there was barely an ounce of somewhat turbid liquor amnii. The foetus was the size of a full term child and, judging by the general appearance, the length of the nails, and the amount of hair, it appeared to be fully developed. The skin was of a dirty brown color; the cuticle, wrinkled and easily detached, was covered in parts with a cheesy substance which was deep yellow as if stained with bile. The bones of the skull were loose and moved easily as one pressed on the scalp. The wall of the uterus was about half an inch in thickness; the muscle was pale and easily split into layers. The placenta was situated almost centrally over the internal os and lined the lower two thirds of the uterus; it was of very firm consistence. A thin gray membrane separated the uterus from the placenta and remained attached to the former when the latter was removed. The specimen was quite odorless. Microscopically, the placenta showed a finely scattered calcareous deposit, the villi had undergone hyaline degeneration, and there was old thrombosis of the intervillous sinuses. There was a considerable amount of fibrous tissue scattered among the muscle fibres of the uterus, but the muscle itself did not show any marked change. The walls of the arteries were thicker than usual, many of the large blood spaces were filled with old thrombi, and, in some, organization of the thrombus was well marked.

MEDIZINISCHE KLINIK

June 27, 1909.

1. The Right of the Child to Life. By K. A. HERZFEID.
2. Contributions to the X Ray Diagnosis of Diseases of the Digestive Tract. By SIEFERMANN.
3. Serious Infantile Anemia from Primary Lack of Iron. By STÖLTZNER.
4. Influence of Pregnancy upon Tuberculosis of the Larynx. By EMIL GLAS and EMIL KRAUS.
5. Fatal Oil of Turpentine Poisoning. By GERHARD JOACHIM.

6. Treatment of Asthma, By M. SANGER.
7. A Contribution to the Motility of the Stomach, By SCHULE.
8. Bacteriological Investigations of Catgut, By WITHE-GROSS.
9. Preparations of Arsenic, By F. BLUMENTHAL.

2. **X Ray Diagnosis of Diseases of the Digestive Tract.**—Schürmayer illustrates his article with fifteen reproductions of x ray pictures that portray various conditions of the stomach and intestine.

3. **Infantile Anæmia from Primary Lack of Iron.**—Stöltzner reports the case of an infant that was brought to him suffering from a serious degree of anæmia. Examination of the blood revealed a marked reduction in the number of the red blood corpuscles below normal and a corresponding reduction of the amount of hæmoglobin in the blood. The amount of hæmoglobin in the individual red blood corpuscles was normal.

4. **Pregnancy and Tuberculosis of the Larynx.**—Glas and Kraus report a number of cases which seem to indicate that not rarely relatively benign forms of laryngeal tuberculosis take on a malignant, progressive form under the influence of pregnancy.

5. **Oil of Turpentine Poisoning.**—Joachim reports a case in which a three year old child drank a quantity of oil of turpentine and died an hour and three quarters later. Autopsy was performed three days later. Macroscopically no lesions could be seen at that time. Microscopically the kidneys alone showed changes which were not of purely cadaveric nature. These showed a slight granular destruction of some epithelia of the healthy renal canaliculi, and streaks and spots of hyperæmia in the medullary portion of the kidney, in the neighborhood of which the vessels were distended with blood so that the canaliculi lying between them were compressed. Almost immediately after drinking the oil of turpentine the child lost consciousness, passed quickly into a deep coma, and died from paralysis of respiration. This case confirms perfectly the experiments made on animals by Nothnagel and Rossbach and the other clinical observations of oil of turpentine poisoning. The condition of the kidneys showed that if the child had lived it would have suffered from the nephritis of oil of turpentine poisoning.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 29, 1909.

1. The Practical Value of the Complement Joining Reaction, By LUDKE.
2. The Germ Contents of Normal Organs, By CONRADI.
3. Injuries from the Electric Current, By OBERST.
4. The Signification of the Intraperitoneal Hæmorrhage in Penetrating Wounds of the Intestine, By GUTZEIT.
5. Moro's Salve Reaction, By BULLINGER.
6. The Effect of an Intracutaneous Injection of Diphtheria Toxine upon the Skin and the Antitoxin Contents of Human Serum, By BINGEL.
7. Dilatation or Tumor of the Heart? By SCHOTT.
8. A New Pressure Bandage for Ulcer of the Leg, By LISCHKE.
9. Some Useful Adhesive Plaster Dressings, By LEHMANN.
10. A Simple Machine for Rolling Plaster of Paris Bandages, By BRÜNING.
11. A Modification of Esbach's Test for Albumin, By KNEIP.

12. The Making Use of the Natural Powers of Protection of the Peritonæum in the Treatment of Appendicitis and of Diffuse Peritonitis from Perforation (Concluded), By JANSSEN.
13. Leopold Auenbrugger, the Discoverer of Percussion, By PICK.

1. **Practical Value of the Complement Reaction.**—Lüdke's rather long paper says in effect that Wassermann's test is a very efficient aid in making the diagnosis of syphilis although not absolutely reliable because in very rare cases the test may be positive when the disease can be perfectly excluded.

2. **Germ Contents of Normal Organs.**—Conradi examined 162 pieces of normal organs taken from 150 different animals and was able to find germs present in seventy-two. They were most frequently present in the liver. Bacteria were found in forty-two out of sixty-three pieces of liver examined, in eighteen out of fifty-nine pieces of muscle, in six out of nineteen kidneys, in four out of five lungs, in one out of four lymphatic glands, and in one out of eleven spleens. The number of germs vegetating in normal organs he says must be extremely small.

4. **Signification of the Intraperitoneal Hæmorrhage in Penetrating Wounds of the Intestine.**—Gutzeit says that according to his observation when the intestinal injury and the intraperitoneal hæmorrhage take place together so that the blood is extravasated more quickly than the intestinal contents the hæmorrhage acts mechanically, and perhaps also by its protective power, to encapsulate the peritonitis. The hæmorrhage will be brought to a standstill more quickly by the tension of the abdominal walls, the flatulence, and paralysis of the intestine when a mesenteric vessel at its juncture with the intestine is injured. An intraperitoneal hæmorrhage may thus act to reduce the threatening danger of an injury to the intestine under favorable conditions.

5. **Moro's Salve Reaction.**—Bullinger finds the inunction of five c. c. old tuberculin in five grammes lanolin, as suggested by Moro, a valuable aid in the clinical diagnosis of early tuberculosis. He says that the application is very easy, the course of the reaction harmless and usually not burdensome to the patient.

6. **Effect of an Intracutaneous Injection of Diphtheria Toxine.**—Bingel reports a case in which the intracutaneous, not subcutaneous, injection of 0.2 c. c. of sterile diphtheria toxine of very high value induced a fever in ten hours, which reached its maximum after twenty-four hours and then diminished until the condition was normal at the end of five days. It was evidently a true toxic fever. The local changes were first a large bulla filled with serum and then an extraordinary degree of oedema of almost the entire arm. After the bulla was dry healing began in the centre and extended centrifugally. A peculiarity was that the severest effect was produced not in the place of the injection or in its immediate neighborhood, but in places situated some distance away. On the twenty-first day after the injection pains set in which resembled those of diphtheritic polyneuritis.

9. **Useful Adhesive Plaster Dressings.**—Lehmann pictures the application of strips of adhesive

plaster for the correction of flat foot, hammer toes, and subluxation downwards of the head of a metatarsal bone.

12. Natural Powers of Protection of the Peritonæum.—Janssen concludes with the statement that by an accurate cooperation of many factors, particularly the addition of warmth, the raising of the cardiac activity, the proper regulation of the activity of the bowel, and autoirrigation of the peritoneal cavity, the surgeon is placed in the best position to utilize for healing the natural protective powers of the peritonæum.

AMERICAN JOURNAL OF OBSTETRICS.

July, 1909.

1. Goitre in the Mother and its Manifestations in the Offspring, By G. SCHMAUCH.
2. The Involuntary Muscle Fibres of the Pelvic Floor, By W. E. STUEDEHORN.
3. Dry Heat as a Therapeutic Factor in Gynecology, By G. GELLHORN.
4. Large Polycystic Kidney, By J. W. BOVEE.
5. Aetiology and Pathology of Bilateral Polycystic Degeneration of the Kidneys, By J. S. NEATE.
6. Sudden Death Following Spinal Anæsthesia, By C. B. REYNOLDS.
7. Adhesion of the Placenta, By W. R. WILSON.
8. The Uterine Tampon in Post Partum Hemorrhage, By T. J. CROWE.
9. How Far is the So Called Conservative Pelvic Surgery Conservative? By J. T. KELLY, JR.
10. Pubiectomy, By C. B. REED.
11. Some Facts Regarding Brooklyn's Summer Infant Mortality, By L. C. AGER.
12. Predisposing Causes and Prevention of Summer Diarrhea, By J. W. PARRISH.
13. The Hygienic and Dietetic Treatment of "Summer Diarrhea," By L. KERR.
14. Medicinal and Mechanical Treatment of "Summer Diarrhea," By A. D. SMITH.

4. Large Polycystic Kidney.—Bovee thinks the treatment of this condition should be nonsurgical except in two conditions: 1. When the disease is unilateral or is reasonably supposed to be so; 2. when the cysts are so large as to be burdensome in any way. In the former instance incision or nephrectomy is advisable. If the ureter or other portion of the waste bearing part of the corresponding half of the urinary tract is hopelessly obstructed beyond a period of six weeks the function of its kidney will be permanently suspended, and nephrectomy will be preferable to incision or multiple incisions. But if urine proceeds from both ureters nephrectomy should not be done except in the case of unilateral polycystic kidney. If it is apparent that disease in one kidney stimulated its development in the other a positive opinion must be withheld. In the second condition puncture or incision is applicable whether the disease is unilateral or bilateral. If cystoscopy shows that both ureters are functioning nephrectomy should not be performed though but one kidney is involved, except under the rarest conditions, such as hemorrhage on the diseased side.

5. The Aetiology and Pathology of Bilateral Polycystic Degeneration of the Kidneys.—Neate thinks that the renal malformation theory as a primary aetiological factor in congenital cystic disease of the kidney implies that many secondary cysts are formed in the medulla from the collecting tubules. But if primary cysts develop from inclusion of portions of the Wolffian body the destruction of the renal medulla may be due to the development of a greater number of secondary cysts. Congenital cystic dis-

ease of the kidney may be accompanied by cyst formation in the liver and other organs, as the effect of pressure and obstruction. The difference in the microscopical pathology in the cysts of any of these organs is insufficient to decide which are derived from fetal vestiges and which from normal tubules. Primary cysts from fetal vesicles or inclusions may be contributory to destruction of the kidney. One may inherit a tendency to cyst formation, possibly from excess or deficiency of nerve mechanism governing the growth of kidney cells, or the presence or absence of special secretion. While the condition may be congenital it may also be of postnatal development. The condition is probably a disease, from the beginning, and not a malformation. Removal is rarely justifiable as the condition is usually bilateral.

10. Pubiectomy.—Reed thinks this operation justifiable for the following reasons: 1. It gives the best results for mother and child in seventy-five per cent. of contracted pelves. 2. It reduces difficult cases of forceps and version to a minimum and places them under the most favorable conditions. 3. Its technique is simple and easily acquired. 4. Its dangers are few and usually avoidable by those who have moderate surgical training and conscience. 5. It can be done in a very few minutes. 6. The labor is made easier and the chances for a living child greatly improved. 7. It can be done at the patient's home. 8. Only a small armamentarium is required. 9. In many cases the pelvis is permanently enlarged so that a subsequent labor may be normal. The author thinks the operation has a great future, especially for the general practitioner, notwithstanding any objections that may be raised against it.

THE PRACTITIONER.

July, 1909.

Special Gout Number.

1. Notes Respecting the Dietary for Goutily Disposed Persons, By SIR DYCE DUCKWORTH.
2. Treatment of Uric Acid, By JAMES F. GOODHART.
3. The Treatment of Gout in its Various Forms, By ARTHUR P. LUFF.
4. On the Relation of Gout to Granular Kidney and to Lead Poisoning, By SAMUEL WEST.
5. The Cardiovascular Manifestations of Gout, By PERCY KIDD.
6. Gout in Relation to Disease of the Nervous System, By JAMES TAYLOR.
7. The Cutaneous Manifestations of Gout and their Treatment, By JAMES GALLOWAY.
8. Balneological Treatment of Gout, with Special Reference to Bath, By GILBERT A. BANNATYNE.
9. The Balneological Treatment of Gout, By W. RINGROSE GORE.
10. The Balneological Treatment of Gout at the Continental Spas, By STANLEY RENDALL.
11. Changes in the Joints in Gout, By C. GORDON WATSON.
12. The Metabolism of Nucleins in Gout, By I. WALKER HALL.
13. Clinical Notes on Gouty Throat, By J. EDWARDS McCURRIEN.

1. Dietary for Goutily Disposed Persons.—Sir Dyce Duckworth sums up the question of appropriate diet for the gouty patient as follows: The patient before all, his family history, his upbringing, his habit of body, his environment, his daily habits, his age, his textural qualities and condition

—all these points, personal and individual, have to be regarded and pondered in laying down rules (which in the first instance must always be experimental) for diet. So when we are told that this or that is good or bad for gout, we know that our informer is ignorant of the very alphabet of the matter. We have, in truth, many articles to select from, but the keynote of our prescription should be strict moderation in all or any one of them.

2. The Treatment of Uric Acid.—Goodhart remarks that all the uric acid solvents, so much vaunted, appear to be equally useless for that special purpose; but he believes that salines have their value, if given with discrimination, for facilitating the excreting power of the several abdominal glands. And in this way water is probably one of the best remedies, but even water drinking, if excessive, is not to be indulged in with impunity. In his opinion, the late Sir William Roberts's simple prescription of half a drachm of potassium bicarbonate in a tumbler of water at bedtime, to stem the nightly acid tide, is, on the whole, one of the most useful recommendations, apart from tonics, cures at watering places, and change of scene and air.

3. The Treatment of Gout in Its Various Forms.—Luff remarks of the climatic treatment that a fairly bracing air with a low relative humidity is the most suitable for the gouty. High mountain situations, and valleys where there is an excessive relative humidity of the air, are alike unsuited to such patients. Especially desirable is it to avoid exposure to the cold east and northeast winds which prevail in the United Kingdom in the early months of spring, and which are apt to be provocative of what has been called a "chill on the liver," a condition which no doubt is brought about by the chilling effects of these winds on the skin, and a consequent reflex affection of the metabolism of the liver cells. As a winter resort for the gouty he advocates Egypt, where, at Heluan, thermal, sulphurous, and saline waters exist, and excellent baths are obtainable. The air of Heluan is that of the desert; the average winter temperature is 60° F.; the relative humidity from November to April is only 30 to 60 per cent.; while the average rainfall for four consecutive winters was only three quarters of an inch. For the spring, summer, and autumn months there are a large number of health resorts in Europe, the climates of which are well suited to the gouty. Residence by the sea is not suited to most cases of gout, and this especially applies to cases of gouty eczema.

5. Cardiovascular Manifestations of Gout.—Kidd states that the cardiac symptoms of most frequent occurrence in gout are irregular action of the heart, palpitation, tachycardia, bradycardia, syncope, angina pectoris, or anginoid attacks. According to Mitchell Bruce, who gives the fullest account of this subject, these symptoms may alternate with frank gouty paroxysms, or may succeed to digestive disturbances traceable to some indiscretion in diet. At other times cardiac manifestations may precede all other indications of gout, and may give a clue to other symptoms that have previously proved baffling to diagnosis, such as diarrhoea, flatulence, giddiness, insomnia, wandering pains or heat in the

joints, and mental anxiety. People who suffer from symptoms of gouty heart are usually at or about the age of forty, inclined to stoutness, or beginning to get stout. Such persons commonly take little exercise, live freely, and are often capable of a large amount of hard mental work. There may be a history of previous articular gout, or merely of a family tendency to the disease. In these patients the pulse is generally of moderate or low tension, the arteries are not as a rule thickened, and the physical examination of the heart gives the impression of the organ being somewhat large and flabby, without any evidence of valvular disease. The pronounced cardioarterial lesions of granular kidney, which represent a late stage in the complaint, seldom develop in such patients.

8. Balneological Treatment of Gout.—Bannatyne gives a list of spas which he recommends in gout, not associated with marked portal venosity, or the full habit, Bath, Buxton, Strathpeffer, Contrexéville, Vittel, Aix-les-Bains, Barège, Wildbad, Gastein, and Pfeffers. Should there be much abdominal congestion, with a sluggish liver, it may be considered preferable to send the patient to Carlsbad, Marienbad, Tarasp, Elster, Brides-les-Bains, or Franzensbad, or to the slightly less powerful waters of Uriage, Bagnères de Luchon, La Bourboule, Royat, Kissingen, Wiesbaden, or Baden Baden. In delicate cases Ragatz, Teplitz, and Schlangenbad are of use. In America, the most suitable waters are the waters of Saratoga, St. Clair Spring in Michigan, and Caledonian Spring in Canada. These last are alkaline saline waters. Special complications may require special treatment. Thus gravel and stone receive special benefit at Contrexéville or Vittel, or if associated with portal venosity, at Carlsbad. Gouty glycosuria is supposed to derive special benefit at Vichy and Neuenahr, but, from his experience, most mineral waters, generally suitable for the gouty, act as well if associated with proper dietetic supervision. Nervous complications are undoubtedly most benefited at the milder spas, especially the simple thermal ones. If associated with eruptions of the skin the simple thermal or alkaline waters are of much use, as are the sulphur springs of Harrogate, Strathpeffer, and Aix-la-Chapelle. Some of the mud baths have also great apparent influence.

THE GLASGOW MEDICAL JOURNAL

July, 1909.

1. Shakspeare's Doctors, By WILLIAM FINDLAY.
2. The Pathology and Treatment of Atrophic Rhinitis, By JAMES ADAM.
3. Extrinsic and Intrinsic Conditions Affecting School Children: A Study of Some Schools and Schools' Children in Glasgow, By DAVID McKAIL.

2. Atrophic Rhinitis.—Adam remarks that there are two chief types of atrophic rhinitis: 1, A common form with sinusitis; and, 2, a less common form without sinusitis. In this latter there is a subgroup, not often met with, in which the atrophy seems primary, and in which there is structural weakness of the tissues rapidly succumbing to microbic invasion. The ultimate result may be similar histologically, but clinically, and for purposes of treatment, the conditions are different. Atro-

phic rhinitis is in most cases the end stage of a hyperplastic purulent rhinitis, involving first the membrane, then, in more than half the cases, the sinuses; these by a vicious circle react on the membrane. In treatment, until the rhinologist has found sinusitis, he ought to be always ready to revise his diagnosis. This purulent rhinitis occurs from microbic action, and is most apt to occur in persons who are more than usually liable to mucous inflammations, or who have structural peculiarities of their sinuses. Crusting and fetor are favored by width of nostril and by the presence of Abel's bacillus, whose toxins may also accelerate atrophy; but fetor is not a necessary accompaniment, and therefore ozæna, the name of the symptom, ought to be abandoned as the name of the disease, and Gottstein's definition shortened to rhinitis atrophicans. The disease does not necessarily begin in childhood. The treatment is treatment in the hyperplastic stage. This is a matter in which the general practitioner can do much. All purulent rhinitis in children, especially as sequelæ of eruptive fevers, ought to be persistently dealt with. Every case of purulent rhinitis, whether atrophic or not, ought to be regarded as one of sinusitis till the contrary is proved. If sinusitis is treated before atrophy is advanced, the results are often excellent. The folly of paraffin injection before diseased sinuses have been treated is obvious, but cleansing with iodine and iodide packing should be carried out. Paraffin injection gives good results when there is no sinusitis when the membrane is not too thin to hold the paraffin. It should be preceded by massage to stimulate and strengthen the membrane, should be done with solid rather than liquid paraffin. By slowing evaporation and preventing crusting, it sometimes gets rid of the need of douching; by helping to obliterate the glands it aids Nature's mode of cure. The author describes his mode of treatment by ionization. The recesses of the nasal fossæ are packed with strips of gauze or cotton soaked in 10 per cent. argyrol or 1 or 2 per cent. zinc sulphanilate. One or two zinc rods similarly covered are placed amid the packing and connected to a positive pole, the negative being on the neck; the vestibule is insulated with guttapercha tissue; 10 to 20 milliampères are used for ten to twenty minutes; to be repeated once in five or seven days. This after two or three months gave good results in three not very advanced cases; whether the results will continue and be worth the trouble remains to be seen. One patient has relapsed after a severe cold. Another has also returned for treatment quite recently. After the best results by any method such membranes remain very vulnerable, and readily take on purulent inflammation on slight provocation.

EDINBURGH MEDICAL JOURNAL

(July, 1905.)

1. Post Mortem Findings in a Case of Pseudohypertrophic Paralysis; Artefact of Spinal Cords.
By BYRAM BURNWELL.
2. Notes on the Diagnosis and Treatment of Pseudomonoccal and Diphthericallary Hypopyon Keratitis.
By ANGUS MACGILLIVRAY.
3. Cancer of the Penis and Its Extirpation.
By ALEXANDER DON.

4. A Pharmacological Estimate of the Value of Commercial Samples of the Liquid Extract of Ergot, with Notes on Ergot Standardization.
By ALEXANDER GOODALL.
 5. A Year's Work with the X Rays in Diagnosis in the Dundee Royal Infirmary.
By GEORGE FIRIE.
 6. A Note on the Use of the Roth Inhaler for Open Ether.
By J. STUART ROSS.
3. Cancer of the Penis.—Don remarks that syphilis alone can be confounded with cancer of the penis, and a short, sharp course of iodides, with removal of a small part for microscopical examination, will clear up the diagnosis. The precancerous conditions are: 1. A surface shedding of the epithelium and a vascularity of the deeper layers, with much leucocytotic infiltration and induration. 2. At first only a marked thickening of the epidermis or leucoplakia, either uniform or only over the papillæ, producing horny or filiform processes. 3. A condition resembling "psoriasis præputialis." The mode of spread is: 1. Early involvement by emboli of the nearest glands through the lymphatic vessels. 2. Penetration locally into the neighborhood. This is a comparatively slower process. 3. Permeation along the lymphatic vessels. Here the infection must pass along the whole length of the penis till it reaches the trunk, and consequently the spread by permeation is not of vital consequence. Infection of the lymphatic glands is much earlier than permeation of the lymphatic vessels would account for, and permeation into the scrotal tissues has not been observed till late in the disease. The parts likely to be infected all lie along the dorsum of the penis and in either inguinal region, but when the bulb and the membranous urethra are affected, infection may already have reached the intrapelvic glands, and removal of the whole penis is necessary. Even then the chance of a cure is small.
4. Liquid Extract of Ergot.—Goodall has subjected liquid extracts of ergot to a thorough investigation, making use of the blood pressure observations and combining the blood pressure observations with observation in the uterus. The animals were rabbits and rats under full anæsthesia by ether. He found that whereas forty-one per cent. of selected samples, and seventy-six per cent. of commercial samples of liquid extract of ergot failed to cause a satisfactory rise of blood pressure, and whereas thirty-four per cent. of commercial samples failed to cause a satisfactory contraction of the uterus, ergot prescribed for therapeutic use should be tested pharmacologically. The effect on the blood pressure is a satisfactory method of testing as far as the prescriber is concerned. A fair standard is, that a dose not greater than twenty minims injected intravenously should cause a rise of blood pressure of 20 mm. of mercury in an anæsthetized animal of 1,500 grammes. Whereas forty-two per cent. of commercial samples caused contraction of the uterus without effecting a rise of blood pressure, the action on the uterus might be regarded as a more satisfactory test by the manufacturer, and in view of the almost exclusive use of ergot in uterine conditions, might be considered sufficient by the prescriber. In the present stage of knowledge it is hardly possible to adjust the therapeutic dosage of ergot to pharmacological findings. The prescriber should have some

guarantee that his ergot is active, and should administer it only in doses which his experience has taught him to be sufficient and safe.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

July, 1909.

1. Postoperative Tetanus, By LEVESON GOWER GUNN.
2. The Use of Carbon Dioxide Snow in Dermatology, By RICHARD L. SUTTON.
3. Clinical Reports of the Rotunda Hospital, By E. HASTINGS TWEEDY, J. R. FREELAND, and BETHEL A. H. SOLOMONS.

1. **Postoperative Tetanus.**—Gunn remarks that with the bacteriological methods we at present possess failure to demonstrate the presence of tetanus is of little or no importance. Infection of the human tissues with tetanus is difficult; at least three conditions must be present before this can occur. These conditions are—the presence of the bacillus or spore of tetanus, the presence of a putrefactive organism, and the presence of dead animal tissue. The first and the second of these are supplied by the contaminated water; the dead animal tissue is probably supplied by the catgut. This may also supply the necessary tetanus spores. Fully thirty minutes' boiling is required for thorough sterilization. There is some doubt if any method at present in use can insure complete sterilization of catgut without diminishing to a considerable degree its strength.

2. **Carbon Dioxide Snow in Dermatology.**—Sutton has been using carbon dioxide snow in his work for almost a year, and, during that time, has employed it in 108 cases. The results in some instances were most excellent, in others they were disappointing. At present he is confining its use, for the most part, to a rather limited number of pathological conditions—*naevi*, lupus erythematosus, *chloasma*, senile keratoses, plantar and palmar warts, obstinate circumscribed patches of chronic eczema and seborrhoeic dermatitis, and superficial epitheliomata. In eighteen cases of *naevus* the results have been very good, especially in the larger pigmented growths and the superficial vascular ones. It seems hardly possible that one should secure satisfactory results in the deeply seated vascular varieties. In order to destroy them the vessels at the base must be obliterated, and this would be difficult to accomplish without extensive destruction of the overlying tissues. For the removal of small moles, from the size of a pinhead down, he prefers the electric needle. It is in dealing with the large, flat, or slightly elevated, pigmented, smooth, or hairy *naevi* that carbon dioxide snow proves most valuable. In these he has found it superior to any other agent. In the removal of tattoo marks his efforts were not crowned with success, repeated applications for forty-five seconds failing to remove the pigment to any appreciable extent. A spot of *chloasma* is readily destroyed by a short period of freezing (from twelve to twenty seconds, with a moderate degree of pressure), and equally satisfactory and speedy results can be obtained in circumscribed patches of chronic eczema and seborrhoeic dermatitis. In lupus erythematosus the effects are quite good. He has found the snow to be a most excellent caustic for the destruction of senile keratoses. One application, of thirty seconds' duration, generally is sufficient. In

dealing with superficial epitheliomata it is best to thoroughly freeze the lesion for forty or forty-five seconds; then, after allowing the tissues to thaw, reapply the refrigerant for a half minute or longer. In the cases treated in this manner the results apparently have been almost ideal. The cosmetic effect is almost as good as when the x rays are employed, and the speed, simplicity, and economy of the method are greatly in its favor. Plantar and palmar warts, which are so resistant to ordinary therapeutic measures, promptly and permanently disappear after one or two sixty second applications.

Proceedings of Societies.

THE AMERICAN MEDICAL ASSOCIATION.

Sixtieth Annual Meeting Held in Atlantic City, June 8, 9, 10, 11, 1909.

SECTION IN PRACTICE IN MEDICINE.

(Continued from *lxviii*, p. 1217.)

The Clinical Significance of Indicanuria.—Dr. JUDSON DALAND, of Philadelphia, said that tests for indican were so difficult that they had been discarded by the profession. Many causes favored the occurrence of indol, such as gastrointestinal atrophy, hernia, ileus, and everything that favored putrefaction. Excessive formation of indol occurred in hepatic derangements, pancreatic disease, etc. In toxæmia the urine contained indol and skatol. The circulation of the blood containing the absorbed products of putrefaction caused a form of anæmia simulating the pernicious. Arteriosclerosis might follow from the action of toxins on the vessel walls. Frontal and occipital headache was an evidence of intestinal toxæmia. Certain individuals were peculiarly susceptible to this trouble.

Dr. BASSLER, of New York, said that the common thought was that indicanuria was due to a low status of the gastrointestinal secretions.

Dr. DALAND said that in his judgment indican was an indicator of toxæmia. It was not in indican that we had a material capable of affecting health, but in the things that produced indican.

Dr. HEINRICH STERN, of New York, said that putrefaction was thought necessary to produce indican. The real reason was tryptic inefficiency. Indican was only symptomatic and in itself never produced bad effects.

Dr. HARRAIVER said that mouth troubles were one of the first manifestations of indicanuria. Indicanuria was invariably associated with increased acidity and a diminished amount of urea.

Dr. ALLEN JONES, of Buffalo, said that in 160 cases there was no relation between the hydrochloric acid in the gastric contents and indicanuria.

Dr. PHILIP KING BROWN, of San Francisco, said that the distinction of ulcer and carcinoma by testing the stools was very reliable. According to Schmidt, there existed in the stools great numbers of Gram positive Oppler-Boas bacilli. If Gram negative bacilli alone were found, carcinoma of the stomach could be ruled out. The only clinical sign

in four cases of carcinoma of the stomach was that the stools contained Gram positive bacteria. A Gram positive stool occurred only in one case of acute ulcer, and this was not corroborated in two cases of cancer of the stomach, the stool contained Gram negative organisms. The organism was one of the earliest things found, even when the gastric contents were not typical.

Resorption of Proteids, Carbohydrates, and Fats in Chronic Alcoholics.—Dr. ALEXANDER LAMBERT, of New York, said that the results of alcoholism were catarrh of the stomach and pancreatic, hepatic, and nephritic diseases. With an ordinary diet the loss of carbohydrates in the stool was three or four per cent. To test nitrogen, a person on an ordinary diet was given a definite amount of nitrogenous food and the urine examined hourly for its total nitrogen. The nitrogenous equilibrium of all the alcoholics varied distinctly. Alcoholics did fairly well so far as metabolism was concerned.

Dr. ELLIOTT P. JOSLIN, of Boston, said that the absorption in alcoholics was good. In alcoholics the stomach secretion was poor, and this showed that stomach secretion was not necessary for good absorption. When we got our alcoholics off alcohol, we must keep them in the hospital and feed them up. We must feed them very considerably to take the place of the nutrition in the form of alcohol.

Dr. LAMBERT said that the point of retaining the patients in the hospital and feeding them up was an important one, especially with repeaters. They should first be thoroughly purged in order that they might absorb their food better.

The Diagnostic Value and Limitations of Analysis of the Gastric Contents.—Dr. CHARLES G. STOCKTON, of Buffalo, said that a stomach tube should not be too small or too flexible, and should have no pumping apparatus connected with it. If the tube stopped at the cardia, we might infer stricture. In the average tall person the tube might have to be passed twenty-four inches. Upon finding too little of a test meal with the gastric juice excessive activity was suggested. When the nature of the juice varied on successive days, it was indicative of nervousness. The presence of stringy mucus in excess often indicated that the tube had been introduced in a clumsy manner. When mucus was mixed with the gastric contents it indicated a catarrhal gastritis. A slow return of the gastric contents through the tube was indicative of atony and dilatation. Violent and spasmodic spurts resulted from spasm of abdominal muscles. A diagnosis of stomach disease should be made only by the combined symptomatology and the stomach tube and not by the stomach tube alone.

X Ray Evidence in Gastric Cancer.—Dr. A. W. CRANE, of Kalamazoo, Mich., said that early diagnosis might be made by the x rays when the lining of the stomach was covered with bismuth. The position of the patient should be horizontal on the plate. He had always used bismuth subnitrate. On using the last plate he used Epsom salts, which lessened the danger. The quantity of bismuth he used was 40 to 100 grammes in 100 to 500 c. of water. The x rays were turned on for from five to fifteen minutes after giving the bismuth. The x ray plate

and the screen would give more information than an exploratory operation.

Dr. G. E. PFAHLER, of Philadelphia, said that the evidence of carcinoma might be demonstrated in the x ray plate even when no palpable tumor was present. The indentations that were obtained in the plate would sometimes disappear. All stomachs did not lie in the same position, and one would have to use manipulations. He used bismuth subcarbonate, one to three ounces, and had seen no symptoms from its use. The only objections were time, energy, and expense.

Dr. DALAND said that x ray work was in its beginning, but showed a great deal. One obtained more information from the screen than from the skiagraph, but both must be used. He had seen trouble of no consequence from the use of bismuth. The subcarbonate was superior to the subnitrate.

Dr. ALLEN C. JONES said that peristalsis was the most important means of emptying the stomach.

Dr. JOHN A. LICHTY, of Pittsburgh, said that he believed the first two findings of the stomach tube were of no value. Unless the stomach tube was passed along toward the pylorus one could not rely upon the analysis. If the patient took the tube easily one could feel fairly sure. The clinical history was of the utmost importance.

The Diagnostic Importance of Examination of the Fæces.—Dr. CHARLES P. EMERSON, of Clifton Springs, N. Y., said that in all stool work the charcoal test of seeing how long it took for the passage of the test meal through the intestines should be made. It was very important to examine the stools for mucus, especially before abdominal operations. Chemical examination of the stools was out of the question for the general practitioner. We should know if a stool contained bile, and how long it had been in the intestinal canal, also whether very much neutral fat was present or not. Casein curds so called were more often due to fat than to casein. It was a question not of what was the matter with the patient, but of how much was the matter.

Dr. HENRY F. HEWES, of Boston, said that he had saved at least ten patients from the surgeon's knife by the finding of mucus in the stools.

Dr. AARON, of Detroit, said that when we found connective tissue in the fæces it was an indication of stomach disease.

Dr. DAVID L. EDSALL, of Philadelphia, said that the stools should be examined whether a test meal was given or not. Patients got hypochondriacal mucus in the stools.

The Orator in Medicine; Tropical Diseases; America's Opportunities and Obligations.—Dr. JAMES B. McELROY, of Memphis, said that bubonic plague was highly contagious. The infection was conveyed from rat to rat and from rat to man by the rat flea, *Pulex cheopis*. In Manila they had produced a vaccine. In the study of tropical diseases, much study should be given to the protozoa. The discovery that trypanosomiasis was the first stage of sleeping sickness was important. The early diagnosis by gland puncture was of the utmost importance. The best means to control the disease was by control of infected individuals, segregation of infected natives, and destruction of Tsetse flies and crocodiles. The spirochætae had

been the subject of much discussion as to whether or not they should be included with the protozoa. The work on Rocky Mountain spotted fever was of interest. The work on malaria was most complete. The stained blood smears had greatly facilitated the diagnosis. We should destroy or render inoffensive the mosquito. Dengue had been found to be spread by the mosquito. The establishment of a biological laboratory in Manila reflected great credit on the United States. The large percentage of abscesses of the liver indicated the prevalence of amebic dysentery in the Southern States. The annual loss to the United States from malaria was \$100,000,000. No place craved drainage as did the Mississippi Valley. Uncinariasis produced anaemia, and infected children were deficient in mental qualities and unequal to mental exertion. For generation after generation families receded and gradually died out. More time should be given to the study of tropical diseases in our medical schools.

The Transmission of Malarial Fever in the Canal Zone by the Anopheles Mosquitoes.—Dr. SAMUEL T. DARLING, of Ancon, Canal Zone, Panama, said that certain species of anopheles acted as an intermediary host for the malarial parasite. There was much selection of breeding places for different species of anopheles. Eleven species of anopheles had been collected in the Canal Zone. Efforts to determine the limits of infections of malarial fever had been made. A person with one crescent for every 500 leucocytes was infective and should not be discharged from the hospital. In tertian malarial fever there was never such an abundance of gametocytes as in æstivoautumnal malaria. Observations on latent malaria had been made. A few cases of fever had come from this source. The patient should not be discharged until the gametocytes had been reduced to a minimum.

Dr. SEALE HARRIS, of Mobile, said that we should keep up the quinine for a period of at least three months after the patient had been relieved. This would reduce the amount of malaria very materially. Those that were exposed should take the drug.

The Present Status of the Serum Treatment of Epidemic Cerebrospinal Meningitis.—Dr. SIMON FLEXNER, of New York, said that it was now three years since the introduction of the serum treatment. About 700 cases had been treated to the exclusion of other treatment. The disease was most fatal when it prevailed as an epidemic. It did not always present itself characteristically until lumbar puncture was made and the *diplococcus intracellularis* was found. The organism was specific. The mortality was about seventy-five per cent. in the past epidemics.

He had collected 712 cases treated by the serum. In these, 488 patients had recovered, and 224 had died, giving a mortality of 31.4 per cent. The fulminating cases had been included in the tabulation. Children under two years had heretofore usually died. Of 104 treated by the serum, sixty recovered and forty-four died, a mortality of 42.3 per cent.

He was confident it was no accident that the mortality had been lowered by this treatment. The fact of the high mortality in persons of twenty

years and over he could not explain. The more experienced the physician was with the serum the more apt the patient was to recover. The fulminating cases were more common during this period of life. The serum should be introduced into the spinal canal at the earliest period of the disease. It tended to reduce inflammation and prohibited the free development of the microorganisms, the disease not extending beyond three to seven days.

Complete nerve deafness was present in a certain number of cases treated with the serum. One should employ it early, in large doses, and only by injection into the spinal canal. It was harmless.

There was no danger in the overproduction of pressure, although it was advisable to remove as much fluid as possible before the injection of the serum. Whenever one was in doubt of the diagnosis an exploratory lumbar puncture should be done.

Dr. T. M. ROTCH, of Boston, said that before the serum treatment in his cases the mortality was from sixty to eighty per cent. The mortality fell from eighty to eighteen per cent. on the use of the Flexner serum. The amount of serum injected varied according to the disease; thirty to forty c.c. was usually sufficient. The mistake was usually in giving too little. It should be repeated at least once a day until the organism disappeared.

In the cases in which the patient did not respond it was probable that the organisms were in some portion of brain not reached by the serum or that there were certain strains of the organism that were resistant to the serum.

Dr. LITTEKER, of Nashville, said that he had used the serum in fourteen cases, and four of the patients had died. He believed those that died could have been saved by injecting the serum into the ventricles of the brain.

Dr. FLEXNER said that Kernig's sign and the rigidity of the muscles of the neck might persist after the use of the serum. He was confident that in some cases the organisms could not be reached because they were located in some inaccessible part of the brain.

Amebic Dysentery.—Dr. SIDNEY K. SIMON, of New Orleans, said that amebic dysentery prevailed in those countries in which there was poorly drained soil. Among his cases the history could be traced back six to twelve years in some instances. Occasional attacks of diarrhoea with periods of normal stools should lead to an examination of the faeces. The disease was rare among children and negroes. Fifty per cent. of his patients had never been to the tropics. Abscess of the liver was infrequent in the female. Aspiration should be used in doubtful cases of abscess of the liver. Ipecac should be used only in pill form coated with salol. A start of from forty to sixty grains a day should be made. Opium was not required. Castor oil should be used as an initial purgative, and the patient put to bed.

Dr. T. B. FUTCHER, of Baltimore, said that the most important complication was abscess of the liver. Three of his liver abscesses ruptured into the inferior vena cava. It was much more prevalent than generally suspected and could only be recognized by a careful examination of the stools.

Appendicostomy had been very unsatisfactory.

Two patients came into the Johns Hopkins Hospital with appendicostomy fistulae, with very little benefit. The ipecac treatment, twenty grains three times daily, was successful.

Dr. GEORGE DOCK, of New Orleans, said that the disease should be looked for whenever there was a chronic disease of the intestines. Patients might have normal stools for long periods. If the stools were negative, one should not be satisfied with one examination. The rectum should be examined with a speculum.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Travail et folie. Influences professionnelles sur l'étiologie psychopathique. Par les Docteurs A. MARIE, médecin en chef des Asiles de la Seine, et R. MARTIAL, chef des travaux du laboratoire d'hygiène ouvrière. Paris: Bloud & Cie, 1909. Pp. xi-110.

The task undertaken by the authors of this monograph—the exhibition of the causal relationship subsisting between the various occupations of modern society and insanity—is beset with peculiar difficulty. Here are some of them: Inadequate records in public institutions bearing on the special point at issue, lack of trustworthy enumeration of the different classes of workers in the state as a whole, the practical impossibility of classifying all workers, relinquishment of one occupation for another. The last mentioned obstacle to the formation of reliable deductions is, however, clearly a factor of much less importance in the older countries than in the new. Despite the discouragements arising from inadequate statistical material, the public records being apparently even less satisfactory in France than elsewhere, Martial and Marie have gone forward in a truly scientific spirit seeking by painstaking analysis to piece out knowledge to a degree inaccessible in default of such assistance.

From the general drift of their researches, they have been led to a discussion, brief, albeit, of the sociological elements entering into the ætiology and prophylaxis of mental diseases. This portion of the book, in places a bit trite to one already familiar with the subject, may, nevertheless, be read with interest as well as profit. Of absorbing interest is Chapter VII, wherein are recorded the special statistical studies and conclusions of the authors. These statistics are those of insane workers (men) admitted to the Asile de Villejuif between the years 1884 and 1900.

To make note in detail of all the data gleaned by the authors from this material would be quite impossible within the limits imposed upon a writing of this sort. A brief record of their major conclusions must suffice. They find, in the first place, that mental debility, mania, melancholia, intellectual enfeeblement, parasyphilis, and alcoholic delirium are the mental maladies most frequently found among toilers. Secondly, certain mental derangements (hereditary) seem to determine the nature of the occu-

pation, rather than the reverse. On the other hand, alcoholism, parasyphilis, and melancholia would seem to disclose an occupational (professional) element in their ætiology. With regard to alcoholism, it may be said that the proportion among workers committed to the asylums is very high.

Parasyphilis also strikes the worker with severity. Finally, it would appear that, despite degeneracy, syphilis, parasyphilis, and alcoholism, the rich man endures life better than he who toils to sustain it. To adequately appreciate this deduction, the incessant financial worry, the wear and tear of living from hand to mouth, in a word, the manifold strains of a squalid incertitude, grinding heritage of the poor in countries even the most civilized, must carry to the mind its full import of morbid tragedy.

Marie and Martial have written a valuable book. Small in dimensions, it is large in thought; presaging the dulness of statistics, it has made figures eloquent.

Rééducation physique et psychique. Par le Dr. H. LAVRAND, professeur aux Facultés libres de Lille. Paris: Bloud & Cie, 1909. Pp. 121. (Price, 1.50 fr.)

The principle of reeducation has made notable progress of late, and now seems well established as one of the valuable resources of modern therapy. In the management of arrested development, and in certain cases where important parts of the nervous system have suffered loss of function consequent upon disease, it has been invoked with striking success. The functional replacement of an impaired structure by another is indeed one of the marvels of neurology. Obviously the principle has anatomical and physiological limitations; but within those confines set by Nature, confines which as yet have been by no means wholly determined, reeducation has already played and is doubtless in future destined to play a rôle of conspicuous usefulness.

To all who are interested in this fascinating and comparatively recent chapter in the development of scientific medicine Professor Lavrand's book may be confidently commended.

Jahresbericht über die Fortschritte der inneren Medizin im In- und Auslande. Begründet on Geh. Medezinalrat Prof. Dr. Ebstein, Göttingen. Herausgegeben von Privatdozent Dr. BENDIX, Köln; Dr. BEYER, Magdeburg; Chefarzt Dr. FREYMUTH, Belgiz; Dr. FRIEDENBERG, Magdeburg; Oberarzt Dr. KONRICH, Jena; Privatdozent Dr. MEINERTZ, Rostock; Oberstabsarzt Privatdozent Dr. MENZER, Halle a. S.; Dr. RIGLER, Leipzig; Dr. SCHLÖTER, Magdeburg; Oberarzt Dr. SCHREIBER, Magdeburg; Oberarzt Dr. TREMBUR, Jena; Privatdozent Dr. UFFENORDE, Göttingen; Privatdozent Dr. VOGT, Rostock; Dr. VÖLSCHE, Magdeburg. Redaktion: Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über die Jahre 1902 und 1903. I. Band. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. 776. (Price, Mk. 29.)

Klinkhardt's *Jahresbericht* is the successor to Ebstein's *Jahresbericht*, which in 1908 appeared containing the publications in medicine of 1901. This, the second volume of the *Jahresbericht*, appearing in two parts, represents the years 1902 and 1903. The reports of the years 1904 to 1910 are promised to be published during the present year and 1910. While the report for 1901 took in dermatology and sexual diseases, this chapter has now been omitted, as there exists a separate report for this branch of medicine.

The book before us represents an immense amount

of labor, and will be of indispensable value as a book of reference. We hope the editors as well as the publishers will be able to carry the work through.

The first part of the present volume (II), for 1902 and 1903, is divided into nine parts: 1, Constitutional diseases; 2, diseases of the urinary apparatus; 3, diseases resulting from external forces (caisson disease, sunstroke, etc.); 4, carcinoma; 5, diseases of the apparatus of motion; 6, of the blood; 7, of the organs of respiration; 8, of the organs of circulation; 9, of the alimentary canal. These parts are again subdivided, and contain the works, alphabetically arranged, according to authors, both such as appeared individually and such as were published in journals. This list is then followed by a condensed review of important works.

The number of legitimate medical journals is large, the number of medical works which are published yearly is great, and still the editors have made it possible to produce a reliable catalogue.

Nouveau formulaire magistral. Précédé de généralités sur l'art de formuler, de notions sur l'emploi des contrepoisons, sur les secours à donner aux empoisonnés et aux asphyxiés, suivi d'un précis sur les eaux minérales naturelles et artificielles, de notes sur l'opothérapie, la sérothérapie, la vaccination, l'hygiène thérapeutique, le régime déchloruré, de la liste des mets permis aux glycosuriques et d'un mémorial thérapeutique. Par A. BOUCHARDAT, professeur d'hygiène à la Faculté de médecine de Paris, etc., et G. BOUCHARDAT, membre de l'Académie de médecine, etc. Trente-quatrième édition. Collationnée avec le nouveau codex de 1908. Revue et augmentée de formules nouvelles. Paris: Félix Alcan, 1909. Pp. 672.

The new edition of Bouchardat's formulary has been brought abreast of recent progress in therapeutics by the inclusion of many new remedies, including the hypnotics that have been introduced to take the place of chloral and sulphonal, and the newer derivatives of the alkaloids of opium and of belladonna and the substitutes for cocaine among the anæsthetic drugs. The formulary also contains a succinct account of the organotherapeutic system of treatment and the use of sera and vaccines. Altogether, it is a most useful collection of formulas and therapeutic memoranda.

Medicoliterary Notes.

In the new Way to Health department of the *World's Work* for August, Edwin Bjorkman describes Our New Health Conscience. The official and legislative sides of the question are dealt with mainly, and the official awakening is shown to have begun in the vigorous antituberculosis campaigns.

Æsculapius was slain by Zeus for presuming to raise the dead; since then no physician has had the temerity to repeat the performance. The intelligent practitioner prefers to imitate Hercules, who, when Death was approaching the beloved Alceste, seized him by the throat and choked him till he was glad to release his intended victim.

Elivir is very late Latin and is properly indeclinable. It was originally *el iksir*, Arabic for the philosopher's stone. A curious use of *arcavum*, found as late as 1722, is as a synonym of emetic. In that year Thomas-Humphreys offered for sale several prescriptions for arcana, or vomits, along with that

for Godfrey's cordial, guaranteed to be copied from originals in the handwriting of Thomas Godfrey, of Hunsdon in Hertfordshire.

Here is a note, therapeutic rather than literary, that we get from *Fur News*, through the *Sun*; it may be valuable to students of comparative therapeutics, if there is such a science. It appears that elephants are very subject to seasickness, but a good remedy has been discovered in a bucket of hot water to which are added three pints and a half of whiskey and seven ounces and a half of quinine. *Fl. haust. cito sumend.* Sig.: For elephants only.

Another attempt to explain to clergymen and physicians the nature of the Emmanuel Movement is made by Frederic B. Hodgins in the August *Putnam's Magazine*. The usual case of arrested alcoholism is cited. It is entertaining to note the interest in the movement taken by old toppers, always on the alert for novel forms of nerve titillation and, above all, for sympathy. We presume these cases have been duly diagnosed as "functional" drunks, and that victims of hobnail liver and small, red kidney, being "organic" cases, will be left, as heretofore, to the crassly materialistic practitioner, his cholagogues and diuretics.

Women physicians will be glad to learn from the August *Delineator* that shirred gowns and skirt yokes are about the right thing this summer; information is given as to how to dress in the evening in Newport. One way is to get into a silver embossed crêpe charmeuse with an overdress worked in seed pearls and silver. The usual simplicity will be the prevailing note in men physicians' costumes; nothing is better than a severely cut blue serge with the lower garment caught up around the waist with a leather belt, the bretelles being laid aside along with the waistcoat till late in the fall.

We have in preparation a Five Mile Shelf of Medical Books designed for careful perusal by the laity, in order that they may be able to converse with professional men on purely medical subjects without giving rise to pain or nausea. Such perusal will to a limited extent show the truly medical point of view and explain the politely concealed impatience of a busy doctor when expected to listen to accounts of marvelous cures effected by patent or domestic remedies. Few men would venture to occupy the time of an astronomer with their ideas on some geocentric theory, but still fewer seem to be able to refrain from distributing their therapeutic vagaries. Try our Five Mile Shelf.

Steps Along the Path, by Katherine H. Newcomb (Boston, Lothrop, Lee, & Shepard Co., 1909), is one of those metaphysical books that flourish so amazingly in Boston soil. The "path" is to health, which may be attained by merely thinking harmoniously. Thus, in 287 well leaded pages the ponderous armamentaria of the surgical instrument manufacturers are disposed of as well as the copious dispensaries with their cacophonous therapeutical suggestions. Well may we envy the devotees of these placid philosophies, well fed most of them, well dressed and well to do, conveniently myopic to horrid hospitals and dispensaries, where so much discordant thinking is done. Owing undoubtedly to the low plane on which we do our personal ex-

cogitating, some of the aphorisms in this book are beyond us. Silence is harmony. Friction and not use wears out the machine. No shaking hands with difficulties. As to this last, we believe our difficulties to be of too stern stuff to shrink away simply because we are rude to them.

Dr. George L. Walton, in *Why Worry?* (Philadelphia and London, J. B. Lippincott Company, 1909; pp. 275), has done in a scientific manner what many loose thinkers and looser writers have often attempted, *viz.*, indicated to what extent the emotions may be subjected to the will. There is no pretense that pain and misery lack actuality and are mere conditions of mind, but a sort of mental gymnastics is advised by which the attention becomes fixed upon other and pleasanter matters. The cultivation of a fad is recommended, coin or stamp collecting, for example, and physical diversion in the forms of cold bathing, golf, and walking is counselled. The historic New England conscience is analyzed with scientific irreverence; a modification of overweening ambition is indicated. A good book, cordially to be recommended to the easily perturbed.

Some of the old Latin writers had worthy physicians among their friends. Cicero wrote of *medicus nobilissimus atque optimus*; Pliny, of a gentleman *clarus medicina*; St. Augustine, of *vir medicinæ artis peritissimus*. Pliny dabbled in medicine. He mentions *medica mala*, which does not mean evils of medicine, but physicking apples, i. e., lemons. When a Roman citizen had indigestion his doctor handed him a lemon, but with the best of intentions. Both Pliny and Macrobius mention the *digitus medicus*, by which they meant the ring finger. There was a belief, still lingering in the country at large, that a nerve led directly from this finger to the heart; it was therefore used to stir medicines together, the idea being that the compounder was putting his heart or his good wishes into the mixture. A beautiful phrase of Cicero's is *honorem medico habere* (i. e., to pay his fee). Apuleius, author of *The Golden Ass*, writes in the second century, *medica*, meaning a woman physician. The poem *Culex* is attributed to Vergil. Whoever the author, when he wrote *menstrua virgo*, he was not referring to any ordinary young woman with a sick headache, but to the goddess Diana, in allusion to the moon in her phases. Jonathan Swift thought that the best doctors in the world were Doctor Diet, Doctor Quiet, and Doctor Merryman. In his day Doctor Freshair and Doctor Exercise had not yet come to their own.

Miscellany.

Letter from Professor von Eicken. We have received the following note from Professor von Eicken, of Freiburg, Germany:

I am making a research for the purpose of finding out all that is known on the subject of foreign bodies in the air passages and œsophagus, and the results of the employment of direct methods of examination (direct laryngoscopy, tracheoscopy, bronchoscopy, and œsophagoscopy). I should therefore be exceedingly grateful, if you would kindly re-

ply to the questions enclosed, with reference to each of the cases, which you personally have treated for these conditions. Photographs, sketches, or notes relating to the cases will be much appreciated.

1. Year. 2. Author. 3. Age and sex of the patient. 4. Nature of foreign body. 5. How long was the foreign body in the air passages or œsophagus? Troubles which followed the entrance of the foreign body. 7. Attempts made to remove it before direct examination. 8. Pulmonary or œsophageal symptoms. 9. Other symptoms. 10. Results of x ray examination. 11. Kind of method employed for direct examination. 12. Nature of anæsthetic employed, (a) local, (b) general. 13. Operative difficulties. 14. Instruments employed. 15. Resulting instrumental lesions. 16. The postoperative pulmonary and œsophageal condition. 17. Observations of particular interest. 18. Result obtained. 19. Autopsy. 20. Bibliography.

Some Oriental Suggestions in Matters of the Healing Art.—Dr. David Sandler, of Constantinople, remarks in the *Lancet*, July 4, 1908, that the Moslems are addicted to the queerest practices for purposes of healing or alleviating bodily pain. A Turk, for instance, in distress or suffering from some disease, however severe, knows of no better remedy than to fix a piece of his dress, torn off with true Oriental equanimity, to an iron bar of some saint's tomb, or to drink water from a tumbler into which he has previously put a sheet of paper with writings from the Koran. Sometimes he will take a jar, the interior of which has been written all over with strange formulæ and signs. He will then fill it with water, wait till these formulæ and signs have been thoroughly dissolved, and drink the singular solution with an absolute faith in its wonder working efficacy. Sheltered by the sombre cypresses of the great Mahomedan cemetery at Scutari (the ancient Chrysopolis, on the Asiatic coast of the Bosphorus) there stands in picturesque solitude the tomb of a horse. Every Friday afternoon Turkish mothers carry to that tomb their crippled children to be submitted by a select "khodja" (priest) to an extraordinary course of treatment. These children are dragged, with their diseased limbs dangling over the hillock, from one end of the tomb to the other and then back again in the same fashion. The occult influence emanating from this hillock is supposed to be an all efficient panacea. It is not difficult to trace in this case the crude, imperfect association of ideas. The horse has long been considered an emblem of vigor, typifying, as Ruskin says, "the flow and force of life." Hence the belief of the Oriental, inherited, no doubt, from the Greeks, in the all conquering virtue and influence of occult and mysterious effluvia which are supposed to emanate constantly from a horse's tomb. The wearing of a necklace of blue beads or of garlic as a potent means of keeping away disease or of warding off the evil eye is quite a universal matter of sincere belief in the whole of Turkey. This superstition is shared, as is well known, by the lower classes of many a country in civilized Western Europe. There, however, it is not so universal and flagrant as in the Orient. There is scarcely a house in the Moslem, Greek, and Armenian districts of the population of Constantinople which has not hanging above its entrance door a collection of garlic, and scarcely a beast of toil which has not attached to some part of it a string of blue beads. Among the uneducated it is impossible to find an individual who does not pin his abso-

lute faith to the all healing power of such charms, especially of blue beads, which are supposed to be an unfailing panacea against every possible ill.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending August 13, 1909:

Places.	Date	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Illinois—Danville.....	July 25-Aug. 1.....	2	
Illinois—Moline.....	July 24-31.....	1	
Indiana—Fort Wayne.....	June 19-26.....	7	
Indiana—Fort Wayne.....	July 3-10.....	4	
Indiana—Fort Wayne.....	July 17-21.....	34	
Kansas—Wichita.....	July 10-17.....	1	
Kansas—Wichita.....	July 24-31.....	3	
Kentucky—Lexington.....	July 10-17.....	3	
Kentucky—Lexington.....	July 24-31.....	1	
Kentucky—Newport.....	July 19-26.....	1	
Michigan—Saginaw.....	July 24-31.....	1	
Minnesota—Duluth.....	July 23-30.....	4	
Missouri—St. Joseph.....	July 3-24.....	15	
Pennsylvania—Philadelphia.....	July 17-24.....	4	
Texas—Fort Worth.....	July 1-31.....	1	
Texas—San Antonio.....	July 24-31.....	1	
Wisconsin—Appleton.....	July 17-31.....	17	

<i>Smallpox—Foreign.</i>			
Africa—Tripoli.....	June 19-July 10.....	17	
China—Hongkong.....	May 20-June 10.....	2	
China—Tientsin.....	June 26-July 3.....	1	
France—Paris.....	June 26-July 10.....	5	
Indo-China—Saigon.....	June 10-26.....	2	
Italy—General.....	July 11-18.....	32	
Italy—Naples.....	July 11-18.....	3	
Java—Batavia.....	June 16-July 3.....	3	
Portugal—Lisbon.....	July 17-24.....	2	
Russia—Moscow.....	June 26-July 10.....	47	
Russia—Moscow.....	July 10-17.....	2	
Russia—Riga.....	July 10-17.....	6	
Spain—Barcelona.....	July 12-19.....	4	
Spain—Valencia.....	June 26-July 10.....	12	
Spain—Vigo.....	July 10-17.....	1	
Turkey in Asia—Mergine, vicinity.....	July 10-17.....	1	Epidemic
Turkey in Europe—Constantinople.....	July 4-11.....	1	

<i>Yellow Fever—Foreign.</i>			
Brazil—Manaos.....	June 26-July 3.....	3	
Brazil—Para.....	June 26-July 10.....	12	

<i>Cholera—Foreign.</i>			
Indo-China—Saigon.....	June 12-26.....	7	
Russia—General.....	July 17-23.....	194	
Russia—St. Petersburg.....	July 17-23.....	526	

<i>Plague—Foreign.</i>			
Australia—New South Wales.....	May 22-29.....	2	
Australia—Queensland, Mackay.....	June 6.....	1	
China—Canton.....	June 19-26.....	58	
China—Hongkong.....	May 20-June 19.....	34	
India—General.....	June 19-26.....	628	
Indo-China—Saigon.....	June 12-26.....	8	
Japan—Kobe.....	July 3-10.....	2	
Japan—Osaka.....	July 3-10.....	1	
Trinidad.....	June 10-July 3.....	2	
Trinidad.....	July 19.....	1	

Public Health and Marine Hospital Service

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 11, 1909:

ATILES, PEDRO DEL VALLE, Acting Assistant Surgeon. Granted thirty days' leave of absence from September 1, 1909, with pay, and fifteen days' leave from October 1, 1909, without pay.

DE VALIN, HUGH, Assistant Surgeon. Upon the arrival of Surgeon G. M. Guiteras, directed to proceed to Stapleton, N. Y., and report to the chairman of the board of medical examiners to determine his fitness for promotion to the grade of passed assistant surgeon.

DUFFY, FRANCIS, Acting Assistant Surgeon. Granted six days' leave of absence from August 10, 1909.

DYNAN, N. J., Acting Assistant Surgeon. Granted two days' leave of absence from July 1, 1909, and one day, July 24, 1909, under paragraph 210, Service Regulations.

GASSAWAY, JAMES M., Surgeon. Bureau order of July 20, 1909, amended to read upon being relieved by Passed Assistant Surgeon M. J. White, directed to proceed to San Francisco, Cal., and assume command.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted three days' leave of absence from July 31, 1909, without pay.

GUITERAS, G. M., Surgeon. Directed to proceed to Savannah Quarantine Station for temporary duty.

GUTHRIE, M. C., Assistant Surgeon. Directed to proceed to Stapleton, N. Y., and report to the chairman of the board of medical examiners to determine his fitness for promotion to the grade of passed assistant surgeon.

HARKIN, F. McD., Acting Assistant Surgeon. Granted ten days' leave of absence from August 10, 1909.

MASON, M. R., Pharmacist. Detailed to represent the Service at the annual meeting of the American Pharmaceutical Association, to be held in Los Angeles, Cal., August 16 to 21, 1909.

MEAD, F. W., Surgeon. Granted one month's leave of absence from August 27, 1909.

MCINTOSH, W. P., Surgeon. Granted twenty-one day's leave of absence from September 1, 1909.

MOORE, DUNLOP, Passed Assistant Surgeon. Relieved from duty at Honolulu, Hawaii, and assigned to duty at Yokohama, Japan.

PEITUS, W. J., Assistant Surgeon General. Granted twenty-seven days' leave of absence from August 16, 1909.

RAMUS, CARL, Passed Assistant Surgeon. Upon arrival of Assistant Surgeon R. A. Herring, directed to proceed to Honolulu, Hawaii, and report to the Chief Quarantine Officer for Marine Hospital duty.

RAMUS, CARL, Passed Assistant Surgeon. Granted seven days' leave of absence en route to station.

ROWLES, J. A., Acting Assistant Surgeon. Granted twenty-five days' leave of absence from August 7, 1909.

SAVAGE, W. L., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 6, 1909.

STEVENSON, J. W., Acting Assistant Surgeon. Granted twelve days' leave of absence from August 17, 1909, with pay, and a further period of thirty days' leave, without pay.

THORNTON, M. J., Acting Assistant Surgeon. Granted four days' leave of absence, July 8, 10, 11, and 12, 1909, under paragraph 210 Service Regulations.

TROTTER, F. E., Passed Assistant Surgeon. Leave granted July 8, 1909, for fifteen days' from July 21, 1909, revoked.

WHITE, M. J., Passed Assistant Surgeon. Directed to proceed to Philadelphia, Pa., and assume temporary charge pending arrival of Surgeon H. R. Carter.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., August 30, 1909, for the examination of Assistant Surgeons Hugh de Valin and M. C. Guthrie, to determine their fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon L. L. Williams, chairman; Passed Assistant Surgeon John McMullen; Passed Assistant Surgeon C. W. Vogel, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 11, 1909.

BAKER, F. C., Major, Medical Corps. Ordered to Governor's Island, N. Y., for duty during the manoeuvres in Massachusetts, August 14 to 21, 1909.

BRATTON, T. S., Major, Medical Corps. Relieved from duty as a member of the board of medical officers, appointed to meet at Fort Creek, Neb., and Fort Des Moines, Iowa, respectively, for the purpose of conducting examinations of applicants for appointment to the Medical Reserve Corps.

BROWN, W. E., First Lieutenant, Medical Reserve Corps. Granted sick leave of absence for six months.

CHURCH, J. R., Major, Medical Corps. Left Fort Robinson, Neb., with troops on practice march.

CLARKE, J. T., Major, Medical Corps. Relieved from duty as a member of the board of medical officers, appointed to meet at Fort Crook, Neb., and Fort Des Moines, Iowa, respectively, for the purpose of conducting examinations of applicants for appointment to the Medical Reserve Corps.

COFFIN, H. L., Medical Reserve Corps. Relieved from duty on the transport *Burnside*, and ordered to Vancouver Barracks, Wash., for duty.

EEER, A. H., First Lieutenant, Medical Reserve Corps. Granted sick leave of absence for two weeks.

HART, J. W., First Lieutenant, Medical Reserve Corps. When relieved at Fort Hunt, Va., ordered to Henry Barracks, Cayey, P. R., for duty.

HARTNETT, E. H., Major, Medical Corps. Granted leave of absence for ten days.

JACKSON, T. W., First Lieutenant, Medical Reserve Corps. When relieved at Washington Barracks, D. C., ordered to Fort Hunt, Va., for duty.

JUENEMANN, G. F., Captain, Medical Corps. Relieved from duty at Fort McDowell, Cal., and ordered to Fort Logan, Col., for duty.

MILLER, E. W., Captain, Medical Corps. Ordered to duty with militia field exercises, Massachusetts Coast, August 14 to 21, 1909.

REYNOLDS, C. R., Major, Medical Corps. Relieved from duty at the Walter Reed General Hospital, Washington, D. C., and ordered to Washington Barracks, D. C., for duty.

SHEPARD, J. L., Captain, Medical Corps. Granted leave of absence for one month.

SKINNER, G. A., Major, Medical Corps. Ordered to Fort Lawton, Wash., for duty, upon arrival from San Francisco.

SMITH, A. M., Major, Medical Corps. Ordered to Presidio of Monterey, Cal., for duty.

SUGGS, FRANK, First Lieutenant, Medical Reserve Corps. Ordered from Fort Niagara, N. Y., to Fort Porter, N. Y., for temporary duty.

USHER, F. M. C., Major, Medical Corps. Granted leave of absence to and including September 1, 1909.

WALLACE, G. L., First Lieutenant, Medical Reserve Corps. When relieved at Henry Barracks, Cayey, P. R., ordered to Fort Sam Houston, Texas, for duty.

WELLS, F. M., First Lieutenant, Medical Reserve Corps. Ordered to Fort Leavenworth, Kans., for duty with troops to be ordered to Des Moines, Iowa.

WERTENBAKER, C. I., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Wadsworth, N. Y., and from temporary duty at Fort Terry, N. Y., to take effect upon the arrival at the latter post of Major Chandler P. Robbins, Medical Corps, and will then proceed to Fort Jay, N. Y., for duty, relieving Captain S. J. Morris, Medical Corps, who, upon being relieved, will return to his proper station, Fort Washington, Md.

WICKLINE, W. A., Captain, Medical Corps. Ordered to accompany troops from San Francisco, Cal., to Washington Barracks, D. C.

The following named officers of the Medical Corps have been relieved from duty in the Philippines Division in time to sail on November 15, 1909, from Manila, P. I., for San Francisco, Cal.: Major J. D. Glennan, Captain R. P. O'Connor, Captain Louis Brechemin, Jr., and Captain H. M. Smith.

Navy Intelligence:

Continued from column in the stations and duties of officers of the United States Medical Corps of the United States Navy for the week ending August 14, 1909:

BROOKS, F. H., Passed Assistant Surgeon. Commissioned passed assistant surgeon from July 14, 1909.

CLARK, G. F., Assistant Surgeon. Orders of July 23d modified; ordered to duty at the Naval Hospital, Washington, D. C.

DEAN, F. W. S., Passed Assistant Surgeon. Detached from the *Maine* and ordered to the *Prairie*.

DONELSON, M., Assistant Surgeon. Detached from the Naval Recruiting Station, Oklahoma City, Okla., and ordered to the Naval Recruiting Station, Chattanooga, Tenn.

McCORMICK, A. M. D., Surgeon. Detached from the *Maine* and ordered to the *Prairie*.

McDONNOLD, P. E., Passed Assistant Surgeon. Unexpired leave revoked; detached from the Naval Hospital, New York, N. Y.

PECK, A. E., Surgeon. Commissioned surgeon with rank of lieutenant commander from June 12, 1909.

REED, E. U., Passed Assistant Surgeon. Commissioned passed assistant surgeon from September 21, 1908; detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the Naval Recruiting Station, Nashville, Tenn.

ROBERTSON, GARDNER E., Acting Assistant Surgeon. Appointed acting assistant surgeon from August 5, 1909.

ROBNETT, A. H., Passed Assistant Surgeon. Commissioned passed assistant surgeon from March 24, 1909.

RODMAN, S. S., Surgeon. Commissioned surgeon, with rank of lieutenant commander, from December 11, 1908.

SEAMAN, W., Passed Assistant Surgeon. Detached from the *Prairie* and ordered home to await orders.

SMITH, C. G., Surgeon. Commissioned surgeon with rank of lieutenant commander, from July 1, 1909.

WILSON, H. D., Surgeon. Detached from the *Kearsarge* and ordered to continue other duties.

WOODS, E. L., Passed Assistant Surgeon. Commissioned passed assistant surgeon from October 14, 1908.

Births, Marriages, and Deaths.

Born.

HASSELLTINE.—In Bristol, Vermont, on Saturday, August 7th, to Dr. Hermon E. Hasseltine, late first lieutenant, Medical Reserve Corps, U. S. A., and Mrs. Hasseltine, a daughter.

PORTER.—In Key West, Florida, on Wednesday, August 4th, to Acting Assistant Surgeon Joseph Yates Porter, jr., Public Health and Marine Hospital Service, and Mrs. Porter, a son.

STRAETEN.—In Washington, D. C., on Friday, July 30th, to Assistant Surgeon Renier J. Straeten, U. S. N., and Mrs. Straeten, a son.

Married.

KAUFMANN—METCALFE.—In San Francisco, on Wednesday, July 21st, Assistant Surgeon J. B. Kaufmann, U. S. N., and Miss Katherine Metcalfe.

MACKENZIE—LAWRENCE.—In Matteawan, New York, on Wednesday, August 11th, Dr. C. D. Mackenzie, of Alberta, Canada, and Miss Myrtle Maude Lawrence.

WEIDMAN—KREWS.—In Philadelphia, on Tuesday, August 10th, Dr. Frederick D. Weidman and Miss Florence L. Krewson.

Died.

ADAMS.—In Greenfield, Indiana, on Wednesday, August 4th, Dr. Marcellus M. Adams, aged seventy-five years.

BALCH.—In New York, on Monday, August 9th, Major Lewis Balch, U. S. V., aged sixty-two years.

BEYER.—In Philadelphia, on Monday, August 9th, Dr. John J. Beyer, aged fifty-one years.

BROWN.—In Danville, New York, on Tuesday, August 3d, Dr. W. E. Brown, aged seventy-seven years.

BUFORD.—In Cartersville, Georgia, on Friday, July 30th, Dr. Oliver Henry Buford, late surgeon, U. S. V.

CHRITZMAN.—In Welsh Run, Pennsylvania, on Wednesday, August 11th, Dr. Henry G. Chritzman, aged seventy-two years.

CLARK.—In Washington, Pennsylvania, on Thursday, August 5th, Dr. Byron Clark, aged seventy-two years.

CONOVER.—In Charleston Four Corners, New York, on Sunday, August 8th, Dr. C. I. Conover, aged fifty-seven years.

HAYHURST.—In Philadelphia, on Saturday, August 7th, Dr. Susan Hayhurst, aged eighty-eight years.

PARAMORE.—In Oconto, Wisconsin, on Sunday, August 1st, Dr. E. F. Paramore, aged seventy-nine years.

SCOTT.—In Northeast Harbor, Maine, on Friday, August 13th, Dr. Joseph Alison Scott, of Philadelphia, aged forty-four years.

TROTTER.—Off Cape Ann, Massachusetts, on Wednesday, August 11th, Acting Assistant Surgeon Charles E. Trotter, U. S. N.

WALL.—In Willoughby, Ohio, on Saturday, August 7th, Dr. W. R. Wall, Sr.

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THE MEDICAL PROFESSION FOR 6,000 YEARS.*

By JAMES J. WALSH, M. D., Ph. D., LL. D.,
New York.

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You now belong to what with the exception of the clerical (and even there is some doubt about that after the reception of your degrees, let me call your attention to the fact that the history of the profession you now enter upon dates back to the very beginning of the course of time and may be traced for as long as we have an account of men's actions in an organized social order. We are very prone in the modern time to think that what we are doing in each successive generation is of so much greater significance than what was accomplished before our time that it is really scarcely worth while to give much attention to the past. This self sufficient complacency with regard to the present would be quite unbearable only that each successive generation in its turn has had the same tendency and has expiated its fault by being thought little of by subsequent generations. We shall have our turn with those we affect to despise.

It is supposed to be particularly true in every department of science and above all in medicine that there is such a wide chasm between what we are doing now and what was accomplished by our forebears, no matter how intelligent they were in the long ago, that to occupy ourselves seriously with the history of medicine may be a pleasant occupation for an elderly physician who has nothing better to do, but can mean very little for the young man entering upon practice or for the physician busy with his patients. Medical history may be good enough for some book worm interested in dry as dust details for their own sake and perhaps because he rejoices in the fact that other people do not know them, but can have very little significance for the up to date physician. This is an impression that is dying hard just now, but it is dying. We are learning that there is very little that we are doing even now that has not been done before us and that above all the great physicians, no matter how long ago they wrote, always have precious lessons for us that we cannot

afford to neglect even though they be 300 or 600 or 1800 or even 2500 years ago. At all of these dates in the past there were physicians whose works will never die.

In every department of human history the impression that we are the only ones whose work is significant has been receiving a sad jolt in recent years, and perhaps in no branch of science is this so true as in medicine. We are coming to realize how much the physicians and surgeons of long distant times accomplished, and above all we are learning to appreciate that they approached problems in medicine at many periods of medical history in the best scientific temper of the modern time. Of course there were abuses, but then the Lord knows there are abuses now. Of course their therapeutics had many absurdities in it, but then let us not forget that Professor Charles Richet, the director of the department of physiology at the University of Paris, declared not long ago in an article in the best known of French magazines, the *Revue des deux mondes*, that the therapeutics of any generation of the world's history always contained many absurdities—for the second succeeding generation. The curious thing about it is that some of these supposed absurdities afterward come back into vogue and prove to be precious germs of discovery, or remedies of value that occasionally even develop into excellent systems of treatment.

Of course there were superstitions in the old days, but then there have been superstitions in medicine at all times. Anyone who thinks that we are without superstitions in medicine at the present time, superstitions that are confidently accepted by many regular practising physicians, must indeed be innocent. A superstition is in its etymology a survival. It comes from the Latin *superstes*, a survivor. It is the acceptance of some doctrine the reasons for which have disappeared in the progress of knowledge or the development of science though the doctrine itself still maintains a hold on the minds of man. Superstition has nothing necessarily to do with religion, though it is with regard to religion that doctrines are particularly apt to be accepted after the reasons for them have disappeared. In medicine, however, superstitions are almost as common as in religion. I shall never forget a discussion with two of the most prominent physicians of this country on this subject.

One of them was our greatest pathologist, the other a great teacher of clinical medicine who came into medicine through chemistry and therefore had a right to opinions with regard to the

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chemical side of medicine. We had been discussing the question of how much serious medical education there was in the Middle Ages and how in spite of the magnificent work done so many superstitions in medicine continued to maintain themselves. I remarked that it seemed impossible to teach truths to large bodies of men without having them accept certain doctrines which they thought truths but which were only theories and that they continued to uphold after the reasons for them had passed away. I even ventured to say that I thought that there were as many superstitions and that such as there were were as of great significance as those that maintained themselves in the Middle Ages. My chemical clinician brother on the right side said "let us not forget in this regard the hold the uric acid diathesis has on the English speaking medical profession." And the brother pathologist on the left side: "Well, and what shall we say of intestinal autointoxication?"

Perhaps you will not realize all the force of these expressions of the present time, but after you have been five years in the practice of medicine and have been flooded by the literature of the advertising manufacturing pharmacist and by the samples of the detail man and his advice and suggestion of principles of practice if you will listen to them, perhaps you will appreciate how much such frank expressions mean as portraying the medical superstitions of our time.

Let us turn from such discussion to the beginnings of the story of our medical profession as it has been revealed to us in recent years.

The first picture that we have of a physician in history is indeed one to make us proud of our profession. This first physician was I-em-hetep, whose name means "the bringer of peace." He had two other titles according to tradition, one of which was "the master of secrets," evidently in reference to the fact that more or less necessarily many secrets must be entrusted to the physician, but also, doubtless, in connection with the knowledge of the secrets of therapeutics which he was supposed to possess. Another of his titles was that of "the scribe of numbers," by which, perhaps, reference is made to his prescriptions which may have been lengthy, for there are many "calendar" prescriptions in the early days, but may only refer to the necessity of his knowing weights and measures and numbers very exactly for professional purposes. I-em-hetep lived in the reign of King Tetser, a monarch of the third dynasty in Egypt, the date of which is somewhat uncertain, but is about 4500 B. C. How distinguished an individual he was in his time may be gathered from the fact that the well known step pyramid at Sakkara, the old cemetery near Memphis, is attributed to him. So great was the honor paid to him that after his death he was worshipped as a god, and so we have statues of him as a placid looking man with a certain divine expression seated with a scroll on his knees and an air of benignant knowledge well suited to his profession.

I called attention in 1907 to the fact that the earliest pictures of surgical operations extant had recently been uncovered in the cemetery of Sakkara

near Memphis in Egypt. These pictures show that surgery was probably an organized branch of medicine thus early, and the fact that they are found in a very important tomb shows how prominent a place in the community the surgeon held at that time. The oldest document after that which we have with regard to medicine is the *Ebers Papyrus*, the writing of which was done probably about 1600 B. C. This, however, is only a copy of an older manuscript or series of manuscripts, and there seems to be no doubt that the text, which contains idioms of a much older period, or indeed several periods, probably represents accumulations of information made during 2,000 or even 3,000 years before the date of our manuscript. Indeed it is not improbable that the oldest portions of the *Ebers Papyrus* owe their origin to men of the first Egyptian dynasties, nearly 5,000 years B. C. To be members of a profession that can thus trace its earliest written documents to a time seven thousand years ago, is an honor that may be readily appreciated and that may allow of some complacency.

There is a well grounded tradition which shows us that an Egyptian monarch with whose name even we are familiar, though we may not be able to pronounce it very well—he was Athothis the son of Menes—wrote a work on anatomy. The exact date of this monarch's death is sometimes said to be 4157 B. C. We have traces of hospitals in existence at this time and something of the nature of a medical school. Indeed, one may fairly infer that medical education which had been developing for some time, probably for some centuries, took a definite form at this time in connection with the temples of Saturn. Priests and physicians were the same, or at least physicians formed one of the orders of the clergy and the teachers of medicine particularly were clergymen. This tradition of close affiliation between religion and medicine continued down to the fifteenth century. How few of us there are who realize that until the fourteenth century the professors of medicine at the great universities were not married men, because members of the faculty, as is true at the present time of many members of the faculty in the English universities, were not allowed to marry. The old clerical tradition was still maintaining itself even with regard to the medical teachers.

Perhaps the most interesting thing about this early history of medicine in Egypt is that with the very earliest dawn of medical history, we have traces of highly developed specialism in medicine. There were thirty-six departments of medicine or at least there were thirty-six medical divinities who presided over the particular parts of the human body. In the larger temples at least there was a special corps of priest physicians for each one of these departments. Herodotus, the father of history, is particularly full in his details of Egyptian history, and though he wrote about 400 B. C., nearly 2,300 years ago, his attention was attracted by this highly developed specialism among the Egyptians. He tells us in quaint fashion "Physicke is so studied and practised with the Egyptians that every disease hath his several physician, who striveth to excell in healing that one disease and not to be expert in curing many. Whereof it cometh that every cor-

ner of that country is full of physicians. Some for the eyes, others for the head, many for the teeth, not a few for the stomach and the inwards."

It is interesting to realize that the same state of affairs upon which you young graduates will come now that you are going out to find an opportunity to practise for yourselves at the end of the first decade of the twentieth century, is not very different from that which the great Father of History chronicles as the state of affairs among the Egyptians between 600 and 1,000 before Christ,—let us say about 3,000 years ago. You too will find that every corner is full of physicians, some for the eyes, others for the head, many for the teeth, not a few for the stomach and everything else under the sun and the canopy and the hat. After a time you will probably find that some little corner has been left for you, and you will work hard enough to get into it first, and then to fill it afterward. The story of how young physicians have got on in their first few years has probably been interesting at all times in the world's history. I think that I know about it at five different periods, and in every one of these there seemed to be no possible room, and yet somehow room was eventually found, though only after there had been a struggle, in the midst of which a certain number of the young physicians found another sphere of activity besides medicine.

Of course it is easy to think that these specialties did not amount to much, but any such thought is the merest assumption. A single instance will show you how completely at fault this assumption is. Dentistry is presumed to be a very modern profession. As a matter of fact mummies were found in the cemetery of Thebes whose bodies probably come from before 3,000 B. C., who have in their teeth the remains of gold fillings that were well put in, and show good workmanship, nearly 5,000 years ago. After dentistry the specialty that we would be sure could not have had any significant existence so long ago would be that of ophthalmology. As a matter of fact it is with regard to the knowledge of eye diseases displayed by these early teachers of medicine that the *Papyrus Ebers* is most startling. It was especially full in diagnosis and contained many valuable hints for treatment. As for laryngology and rhinology, one of the earliest medical records that we have, is the rewarding by one of the kings of Egypt of an early dynasty, (nearly 4,000 B. C.,) of a physician who had cured him of a trouble of the nose of long standing, that seems to have interfered with his breathing.

It is easy to think in spite of all this, that the Egyptians did not know much medicine; but only one who knows nothing about it thinks so. According to Dr. Carl von Klein, who discussed the Medical Features of the Ebers Papyrus in the *Journal of The American Medical Association* about five years ago, over 700 different substances are mentioned as of remedial value in this old time medical work. There is scarcely a disease of any important organ with which we are familiar in the modern time that is not mentioned here. While the significance of diseases of such organs as the spleen, the ductless glands, and the appendix was of course missed, nearly every other pathological condition was either expressly named or at least

hinted at. The papyrus insists very much on the value of history taking in medicine, and hints that the reason why physicians fail to cure is often because they have not studied their cases sufficiently. While the treatment was mainly symptomatic, it was not more so than is a great deal of therapeutics at the present time even in the regular school of medicine. The number and variety of their remedies and of their modes of administering them is so marvelous, that I prefer to quote Dr. von Klein's enumeration of them for you:

"In this papyrus are mentioned over 700 different substances from the animal, vegetable, and mineral kingdoms which act as stimulants, sedatives, motor excitants, motor depressants, narcotics, hypnotics, analgesics, anodynes, antispasmodics, mydriatics, myotics, expectorants, tonics, dentifrices, sialogogues, antisialics, refrigerants, emetics, antiemetics, carminatives, cathartics, purgatives, astringents, cholagogues, anthelmintics, restoratives, hæmatics, alteratives, antipyretics, antiphlogistics, antiperiodics, diuretics, diluents, diaphoretics, sudorifics, anhydrotics, emmenagogues, oxytocics, ecbolics, galactagogues, irritants, escharotics, caustics, styptics, hæmostatics, emollients, demulcents, protectives, antizymotics, disinfectants, deodorants, parasitocides, antidotes, and antagonists."

Scarcely less interesting than the variety of remedies were their methods of administration:

"Medicines are directed to be administered internally in the form of decoctions, infusions, injections, pills, tablets, troches, capsules, powders, potions, and inhalations; and externally, as lotions, ointments, plasters, etc. They are to be eaten, drunk, masticated, or swallowed, to be taken often once only—often for many days—and the time is occasionally designated—to be taken mornings, evenings, or at bedtime. Formulas to disguise bad tasting medicaments are also given." We have no advantage over the early Egyptians even in elegant prescribing.

With all this activity in Egypt, it is easy to understand that the other great nations of antiquity also have important chapters in the history of medicine. The earliest accounts would seem to indicate that the Chaldeans, the Assyrians, and the Babylonians all made significant advances in medicine. It seems clear that a work on anatomy was written in China about the year 2,000 B. C. Some of the other Eastern nations made great progress. The Hindoos in particular have in recent years been shown to have accomplished very good work in medicine itself. Charaka, a Hindu surgeon, who lived not later than 300 B. C., made some fine contributions to medical literature in Hindostani. There were hospitals in all of these countries, and these provided opportunities for the practice of surgery. Laparotomy was very commonly done by Hindu surgeons, and one of the rules enjoined on Hindu students was the constant habit of visiting the sick and seeing them treated by experienced physicians. Clinical teaching is often spoken of as a modern invention, but it is as old as hospital systems, and they go back to the dawn of history.

It is among the Greeks, however, that the most important advances in medicine, so far as we are concerned, were made. This is, however, not so

much because of what they did as from the fact that they were more given to writing, and then their writings have been better preserved for us than those of other nations. The first great physician among the Greeks was Æsculapius, of whom, however, we have only traditions. He is fabled to have been the son of Apollo, the god of music and the arts, and therefore to have been a near relative of the muses. The connection is rather interesting, because sometimes people try to remove medicine from among the arts that minister to the happiness of man, and place it among the sciences whose application is for his profit. Medicine still remains an art, however. The temples of Æsculapius were the first hospitals, though the priests were not the only ones who practised medicine, for there were laymen who after having served for some time in the hospitals, wandered through the country under the name of Asclepiads treating people who were not able to go to the hospitals or shrines. These evidently then were the first medical schools in Greece as well as the first hospitals.

Six hundred years after Æsculapius came Hippocrates, of Cos, the Father of Medicine. He undoubtedly had the advantage of many Egyptian medical traditions and other Oriental medical sources, as well as the observations made in the hospitals and shrines of Æsculapius. He wrote some great works in medicine that have never grown old. Young men do not read them, old men who are over-persuaded of how much progress is being made by their own generation in medicine neglect them. The busy practitioner has no time for them. The great teachers of medicine whom all the professors look up to and who think for us in each generation turn fondly back to Hippocrates, and marvel at his acumen of observation and his wonderful knowledge of men and disease. Sydenham thought that no one had ever written like him, and in our turn we honor Sydenham by calling him the English Hippocrates. Boerhaave, Van Swieten, Lancisi, the great fathers of modern clinical medicine, turned with as much reverence to Hippocrates as does Osler, the regius professor of medicine at Oxford, in our twentieth century. Hippocrates wrote 2,500 years ago, but his writing is eternal in interest and value.

The famous oath of Hippocrates, which used to be read to all the graduates of medicine, well deserved that honor, for it represents the highest expression of professional dignity and obligation. There is a lofty sense of professional honor expressed in it that cannot be excelled at any period in the world's history. Among other things that Hippocrates required his adepts in medicine, his medical students when they graduated into physicians, to swear to were the following: "I will follow the system of regimen which according to my ability and judgment I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to man, woman, or child born or unborn. With purity and with holiness I will pass my life and practice my art. Whatever in connection with my professional practice, or not in connection with it, I see or hear in the life of men which ought not to be spoken of abroad, I shall not divulge, as reckoning that all such should

be kept secret. While I continue to keep this oath inviolate it may be granted to me to enjoy life and the practice of my art respected by all men in all times; but should I trespass and violate this oath may the reverse be my lot."

It is sometimes thought that after the Roman medicine, which was an imitation of the Greek (though Galen well deserved a place by himself, and Galen is usually thought of as a Roman though he wrote in Greek and had obtained his education at Pergamos in Asia Minor), there was an interregnum in medicine until our own time. This is, however, quite as much of an assumption as to suppose that the Egyptians had no medicine—as we used to until we knew more about them—or that old time medicine is quite negligible because we were ignorant of its value. The Middle Ages had much more of medicine than we are likely to think, and just as soon as the great universities arose at the end of the twelfth and the beginning of the thirteenth centuries, medicine gained a new impetus and flourished marvelously. These university medical schools of the later Middle Ages are models in their way, and put us to shame in many things. According to a law of the Emperor Frederick II issued for the two Sicilies in 1241, three years of preliminary study were required at the university before a student might take up the medical course, and then he had to spend four years at medicine, and practise for a year under the supervision of a physician of experience before he was allowed to practise for himself. The story of the medicine of this time is all the more wonderful because subsequent generations forgot about it until recent years, and supposed that all of this period was shrouded in darkness. It was probably one of the most brilliant periods in medical history. Some of the men who worked and taught in medicine at this time will never be forgotten.

Probably the greatest of them was Guy de Chauliac, a papal chamberlain whom succeeding generations have honored with the title of father of surgery. His great textbook, the *Chirurgia Magna*, was in common use for several centuries after his death, and is full of surgical teaching that we are prone to think much more modern. He trephined the skull, opened the thorax, operated within the abdomen, declared that patients suffering from wounds of the intestines would die unless these were sewed up, operated often for hernia in an exaggerated Trendelenburg position, with the patient's head down on a board, but said that many more patients were operated upon for hernia "for the benefit of the surgeon's purse than for the good of the patient." His directions for the treatment of fractures and for taxis in hernia were followed for full four centuries after his time. No wonder that Pagel, the great German historian, declared that "Chauliac laid the foundation of that primacy in surgery which the French maintained down to the nineteenth century." Portal in his *History of Surgery* declares that "Guy de Chauliac said nearly everything which modern surgeons say, and his work is of infinite price, but unfortunately too little read, too little pondered."

For the complete text of this, the first regulating the practice of medicine in modern times, also the first pure drug law, see Walsh, *The Physician and Society*. New York, Fordham University Press, 1908.

Malgaigne declared "the *Chirurgia Magna* a masterpiece of learned and luminous writing."

Chauliac's personal character, however, is even more admirable than his surgical knowledge. He was at Avignon when the black death occurred and carried away one half the population. He was one of the few physicians who had the courage to stay. He tells us very simply that he did stay not because he had no fear, for he was dreadfully afraid, but he thought it his duty to stay. Toward the end of the epidemic, he caught the fever, but survived it, and has written a fine description of it. He was looked upon as the leader of surgery in his time, and this is his advice as to what the surgeon should do as given in the introductory chapter of his *Chirurgia Magna*: "The surgeon should be learned, skilled, ingenious, and of good morals: Be bold in things that are sure, cautious in dangers; avoid evil cures and practices; be gracious to the sick, obliging to his colleagues, wise in his predictions: be chaste, sober, pitiful, and merciful; not covetous nor extortionate of money; but let the recompense be moderate, according to the work, the means of the sick, the character of the issue or event, and its dignity." No wonder that Malgaigne says of him: "Never since Hippocrates has medicine heard such language filled with so much nobility and so full of matter in so few words."

The old time medical traditions of education which in the medieval universities produced such men as William of Salicet and Lanfranc and Mondéville and Guy de Chauliac, persisted during the next two centuries in the southern countries of Europe, and then were transferred to America through Spain. The first American medical school was not, as has so often been said, at my own Alma Mater, the University of Pennsylvania, which had its first lectures in 1767, while the Physicians and Surgeons of New York did not come for some ten years later and Harvard only in the following decade, but in the medical school of the University of Mexico, where the first lectures were held in 1578, and where a full medical school was organized before the end of the sixteenth century. In this medical school which during the seventeenth century came to have several hundred students, the university tradition of the olden time was well preserved. Three years of preliminary study at the university were required before a student could take up the course in medicine, and four years of medical study were required before graduation. We have some of the textbooks, and know much about the curriculum of this old medical school, and in every way it is worthy of the old university traditions.

Unfortunately our universities in what is now the United States developed very slowly. Kings College (Columbia) did not become a university in the sense of having law and medical schools as well as an undergraduate department until the nineteenth century had almost begun. Harvard did not have a law school affiliated with it until the first quarter of the nineteenth century had almost run its course. The affiliations between the medical schools and the universities in these cases was only very slight, and the

medical schools were entirely in the hands of the medical faculty, whose main purpose during a great part of the nineteenth century was to make medical studies as short as possible and as inexpensive as they could possibly be made for the faculty, because that left so much more of the fees to be absorbed by the historic septennate of professors who ruled and managed the university. The consequence was that during most of the nineteenth century two terms of four months each were all that was required for the diploma in medicine in American medical schools. Three schools maintained a very high standard by requiring twenty weeks in each of two calendar years. The medical school that was considered one of the best in the country, and whose graduates obtained the highest marks in the army and navy examinations, that of the University of Virginia, required but one year's attendance—nine months in all—and then gave the doctor's degree.

It may be as well to say that the doctor's degree or diploma was a license to practise. There were no State regulations for the practice of medicine, and no matter how obtained, a diploma allowed practise. As some one has well said the diploma, then, was a license to practise, not medicine, the Lord knows! but to practise on one's patients until one had learned some medicine. It is out of this slough of despond in medical education that we have climbed in the last thirty-five years. We are getting back to the old time university traditions. Let us hope that we shall not allow ourselves to get away from them again. There are ups and down in medical practice and medical fashions and medical education, and all depends on the men who compose the profession at any one time, and not on any mythical progress that holds them up and compels them to do better than those who went before them.

It is to you to-day, entering on this profession, that we look to do your share in keeping up the dignity of the medical profession and in maintaining standards in medical education. We have a glorious tradition of 6,000 years behind us with the great men of the profession worshipped as gods at the beginning, because men thought so much of them, and remembered fondly as great masters when they came in the aftertime. From I-em-hetep through Æsculapius and Hippocrates and Galen and Guy de Chauliac and Sydenham and Boerhaave down to our own time, the men whom we delight to honor are the ones who did not work with an eye single to their own success, but who tried above all to do things for humanity and for the profession to which they belonged. The man who is successful as a money maker in his profession is only doing half his duty. He must make medicine as well as money, that is, he must by his observations help others to recognize and treat disease better than they did before, he must labor for the benefit of humanity, and above all he must see that there are no decadence of professional spirit and no deterioration of medical education as far as his influence can go. It is men of this kind that we hope to send forth from Fordham, and you stand in the van of them all, and I wish you God-speed.

110 WEST SEVENTY-FOURTH STREET.

*For sketch of Chauliac see *Johns Hopkins Hospital Bulletin*, 1909, or *Catholic Churchmen in Science*, second series. Dolphin Press, Philadelphia, 1909.

PERITONEAL ADHESIONS.

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The aetiology of peritoneal adhesions are not completely known. The two basic factors appear to be trauma and infection. Trauma damages adjacent structure and desquamates the endothelia, while infection results in exudates. But trauma and infection do not exhaust the aetiology of peritoneal adhesions, for I have observed at autopsy *cellular* peritonitis in aged people where the abdominal viscera were buried in a bed of productive snow white cellular tissue. Peritoneal adhesions arise from local peritonitis due to an inflammatory process desquamating the endothelia with a consequent peritoneal exudate. Peritoneal adhesions are due to: 1, Trauma musculare; 2, trauma chirurgicum; 3, trauma mucosum; 4, trauma perforativum. Muscular trauma produces the majority of peritoneal adhesions. Hence we should possess the term "muscular peritonitis" as it occurs adjacent to the right psoas seventy-five per cent. and adjacent to the left psoas as mesosigmoiditis in eighty per cent. of adult subjects. Any segment of the tractus intestinalis which lies within the range of muscular action of a long, powerful muscle like the psoas will in the vast majority of adults (eighty-five per cent.) become surrounded by peritoneal adhesions. The trauma of the muscle on the segment of the tractus intestinalis induces pathogenic germs or their products to migrate through the tunica mucosa, through the tunica muscularis, and through the tunica serosa, whence a peritoneal exudate arises and finally organized peritoneal adhesions occur. The infectious invasion through the walls of the tractus intestinalis may leave no macroscopic or microscopic trace. A healthy mucosa and muscularis may underlie a serosa superimposed by extensive peritoneal adhesions. Also a diseased mucosa may underlie a healthy serosa. Peritoneal adhesions from muscular trauma in 700 recorded personal autopsic abdominal infections occurred on the ventral surface of the psoas muscle, right seventy-five per cent., and left eighty-five per cent. of male subjects. Peritoneal adhesions adjacent to spleen, ninety per cent.; adjacent to vertical colon, it occurred in forty-five per cent.; peritoneal adhesions of tractus intestinalis occurred in ninety per cent. of male subjects. By observation in autopsy for years I have observed that the liver is adherent to right kidney in forty per cent. of adult subjects. This is a significant factor, for, if the kidney and liver are adherent in forty per cent. of subjects it profoundly affects the views of mobile kidney and alleged necessity of nephropexy. In forty per cent. of subjects the kidney and liver move as a single organ by reason of peritoneal adhesions.

Females presented about five per cent. less, as they possess less muscular trauma. The tractus genitalis of females presented seventy-five per cent. of peritoneal adhesions in 175 adult autopsies. All these peritoneal adhesions are not from muscular trauma, but the vast majority are. In the tractus genitalis must be included infection forced proximally through the oviducts; however, the oviductal peristalsis (muscular) and trauma of the

levator ani muscle enhance the amount of pelvic peritoneal adhesions to a large degree. The menstruating girl with an elevated temperature is generally ill, because the trauma of vigorous oviductal peristalsis and trauma of the levator ani forces infection through the oviductal pavilion into the pelvic peritoneal cavity.

Surgical trauma produces about seventy-five per cent. of peritoneal adhesions, as is demonstrated by repeated subsequent peritoneal sections. In some 200 dogs on which laparotomy was performed for experimental purposes I found in the autopsy, occurring within ten weeks, about eighty per cent. of peritoneal adhesions.

As to the influences which produce disappearance or absorption of peritoneal adhesions we are quite in the dark. It appears that active visceral peristalsis and motion hastens absorption. It is doubtful whether any artificial membranes or the sterilized peritonæum of other animals will materially lessen adhesions in surgical intervention. Besides the origin and persistence of peritoneal adhesions present an individual variation. I have known cases where peritoneal adhesions existed at the operation and continued for eight years when a second peritoneal section was required for strangulation of segments of the tractus intestinalis. The peritoneal adhesions are like a double edged sword which cuts in two directions. The usefulness of peritoneal adhesions is that they form barriers which check the invasion of infection, they imprison, sterilize, and starve bacteria. They block the lymphatics leading from infection centres rendering relapsing attacks of peritonitis (e. g., perityphlitis) increasingly less dangerous or infectious. The unfavorable effect of peritoneal adhesions is they compromise visceral function, structure, and object, ending in malnutrition, pain, neurosis, and invalidism. They compromise the common visceral functions—sensation, peristalsis, absorption, secretion—of the tractus intestinalis, urinarius, genitalis, vascularis, lymphaticus, and nervosus, inducing excessive, deficient, or disproportionate common visceral function (sensation, absorption, secretion, and peristalsis). They especially traumatize the tractus nervosus. Adhesions compromise canalization of viscera, check drainage, give rise to chronic catarrh with resulting ulceration, and are rich in nerve waste through reflexes. The most appalling disaster induced by peritoneal adhesions is by compromising the function and structure of the weakest segment of the tractus intestinalis, the appendix, through mesoappendicitis inducing appendicular perforation, whence perityphlitis occurs, the most treacherous and dangerous abdominal disease. Perityphlitis is treacherous because its capricious course cannot be prognosticated, it is dangerous because it kills. Mesoappendicitis is mainly due to psoas muscular trauma. The mesoappendicitis, peritoneal adhesions compromise the vessels (blood and lymph) of the mesoappendix, resulting in embolus, malnutrition of the appendix, flexing it, and rendering it an easy prey to pathogenic bacteria.

In conclusion we may say peritoneal adhesions mainly occur from trauma and infection. However, neither the origin of peritoneal adhesions nor the disappearance are completely known. The aetiology

of cellular or senile peritonitis is not known. The ultimate effect of peritoneal adhesions is the compromise of common visceral function (sensation, peristalsis, absorption, secretion) and structure (traumatization of cells, muscle, elastic, connective). Muscular trauma produces the main peritoneal adhesions (psaos, levator ani, diaphragm, abdominal muscles). The peritoneal adhesions adjacent to the biliary passages which bind the stomach, duodenum, pancreas, and transverse colon into a consolidated masses are chiefly the result of leaking infected biliary channels enhanced by the trauma of the diaphragm, lateral, and ventral abdominal muscles. These contracting peritoneal adhesions adjacent to the biliary passages compromise visceral function (sensation, peristalsis, absorption, and secretion) and stricture. The fate of peritoneal adhesions is disappearance or permanence. Permanence of peritoneal adhesions means persistent contraction with consequent trauma and distortion of viscera which compromises visceral function (sensation, peristalsis, absorption, secretion) and structure. In checking visceral peristalsis pain results. The gross effect of peritoneal adhesions on viscera is compromise of the lumen of channels by flexion or constriction, e. g., the intestine, ureter, biliary ducts, vessels (veins, lymph channels, arteries).

100 STATE STREET.

MIND AND ITS RELATION TO HEREDITY.*

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The study of heredity in its relation to human kind has always been of the greatest interest to the physician. This, in part, must be my excuse for bringing it again to your attention to-night. The other part of my reason, I may say, is a growing tendency in some quarters to attempt to explain all phenomena by means of data obtained with the microscope and the scalpel.

If heredity were all materialistic I must hold in some degree the characteristics of all my ancestors, near and remote. Although, like Father Adam, I may be subject to temptation, yet, I think, I must have dropped some at least, of his aspects of mind and body.

Now, if I can drop traits and resemblances we must grant that I can in the same way take on traits and appearances of my own and transmit them to my offspring. If this is true then there must exist within us some means of modifying physical characteristics in ourselves and transmitting these changes to our offspring. If the children were true reproductions ontologically of the two parents then, why as a rule, should not all of a family more closely resemble one another?

Tracing back fifty or more generations it is easy to show that we are all equally related. In the same way if we go forward an equal distance would we be able to say which is your child and which mine? If it is not possible to transmit and modify mental

and physical differences would we not now be all alike?

For a long time the opinion has been widely held that heredity was all. But now many of us have come to think that, while heredity has its influence, environment has its also to a greater degree. By this I should mean mental influence rather than accidental surroundings, and in the term mental we of course include moral.

The growth of the original idea in regard to inheritance is easily explained. Time is very long and the period of man's observations proportionately very short. We are awakening, however. For instance, compare the opinion of the hereditary factor in tuberculosis with that generally held even a few years ago. Also those as to insanity, drunkenness, and cancer.

Bashford points out in a recent article that cancer is infective but only to individuals of the same species. While this may be questioned it has strong evidence in its support. He also shows that cancer contains nothing that is not common to the organism. As far as its inheritance goes we have only negative evidence to support the view and should still seek the explanation of its method of acquirement.

While the value of observation is as great as ever we should remember that our senses deceive us quite as often as do our reasoning powers.

All our conceptions and knowledge of cell life have grown enormously in the last ten years. In medicine many problems are now before us in connection with this study. We cannot deny the material basis of many of these problems, nor on the other hand should we bigotedly deny their mental side.

We are familiar (or should be) with the Biblical account of the trick that Jacob devised to take advantage of Laban, who had promised to Jacob all the striped and spotted among the cattle, Jacob first removed all the spotted apart for himself and then when the stronger cattle came to the troughs to drink he placed in their sight rods of wood peeled in strips and spots so that when the cattle conceived the sight of these should cause them to bear calves striped, ring streaked, and speckled. It would seem that the influence must have something other than physical. This is only an instance of many ways in which the ancients have shown to us their knowledge of mental influence.

Vestberg thinks, after careful study of the whole ground, that the main factor in the causation of all diseases, especially those of the nervous system, is an external influence and that the inherited predisposition is only a secondary factor. Cohn states in a discussion of the subject that man shows better judgment in endeavoring to improve his animals than himself. If he applied the same principles to himself much disease, suffering, and death could be avoided.

Many theories of heredity have been advanced. Darwin's theory was for a long time generally accepted, but has been shown to be inaccurate in many particulars and insufficient to explain well known phenomena. There are points in all theories that may be accepted, but none alone is sufficient.

*Read before the Schenectady County Medical Society at the meeting of May 19, 1909.

All of us of some experience have had occasion to note that certain tendencies in the mother during her period of gestation; even if quite foreign to her usual habit of mind or life, will appear well marked in her progeny; often governing their whole after life. Some parents are even to-day learning to take advantage of this fact to mold the future child to their liking. If this is granted, how can it be brought about except through mental action?

As we noted before it is very doubtful if any man enters the world with an unalterable fate of tuberculosis or insanity fastened upon him, but it is surely true that the tendency lies in him from his earliest moment. Alcoholism, epilepsy, etc., may transmit themselves to our offspring as a very varied group of physical and mental stigmata. Psychopathic traits are distinctly born in individuals, and may become engrafted upon a previously healthy strain of our race. Attempts have been made to reduce the amount of heritage we receive from our parents and grandparents to a mathematical law, without, however, great success. Mendel's law does not seem to apply to the human race, certainly not to any such extent as it does to the lower animals, where it is nearly absolute.

If maternal ancestors have a greater influence, as they certainly seem to have, especially in nervous diseases, it may possibly be due to the greater opportunity the mother has to impress her offspring either before or after birth. If heredity is entirely physical then according to the law of probabilities the father should have equal weight with the mother in determining diathesis.

We all can recognize in those with whom we are closely related certain intimate traits and types of thought and expression, and can even sometimes say from whom they have descended. The analysis of the mental characteristics of children is a fascinating occupation for this reason. We are sometimes taken aback to discover a trait of which we were somewhat ashamed and had thought to have very well covered up in our own selves suddenly crop out in one of our children. It is also possible to trace in them certain of our own mental disturbances of the period of their birth. I think many of the marked differences in children of the same parents are explained in this way. I do not see how all these facts could have a bearing on a purely materialistic theory. There are many social problems which necessarily have a marked bearing on this subject.

Some recent studies have shown a remarkable physical basis for heredity. The materialist who seeks to follow the Mendelian law must find some biological basis for his theory. This has seemed to lie in the bodies known as chromosomes, hidden in the nuclei of the germ cells. It has been shown in the lower animals and insects that these bodies arrange themselves in pairs forming two duplicate series. These are descendants of the two series brought together in the fertilization of the egg, and are therefore of both maternal and paternal origin. It has been noticed in some insects that there is an accessory chromosome not present in the case of a male but present in the case of a female. This may be a possible basis for the known fact of certain qualities being transmitted in the female line as has been spoken of before.

These facts are of interest; but the very point that while Mendel's law governs the animal kingdom up to a certain stage and then seems to lose its influence—and all the evidence goes to show that it has no influence in man—is a strong argument in favor of the power of the mind on human development. Gowers is of the opinion that man is not subject to Mendel's law. He thinks that this is due to man's great complexity of development. Diseases of the nervous system which are merely in and not of it are not subject to this law. Those diseases in which heredity is most marked are the early abiotrophies, baldness, the hereditary ataxias, and atrophies. These are more apt to descend in the maternal line, affecting not the females but their offspring. Gowers thinks this indicates that the potentiality of the disease lies in the protoplasm which is to become the second generation. He also thinks this shows a strong probability that the sex is predetermined. I hope to show a little later that this can be explained in another way.

Another class present maladies that develop late in life after growth has stopped; as Marie's ataxia, Huntington's chorea, and Thomsen's disease. Heredity is operative in many of the so called functional diseases as hysteria, neurasthenia; epilepsy, and insanity. Faulty history and the liability to concealment render statistics in these of little value. Mr. Darwin, president of the Association for the Advancement of Science, believes that the theory of inheritance of acquired characteristics in plants, animals, and man lies at the root of all evolution. No theory of a special germ plasma with biophores can explain the facts of ontogeny nor its automatic action.

Development is the result of habit. Habit is subconscious memory. This alone makes natural selection positive and those that cannot learn do not survive. Physicians even more than biologists will be ready to accept the evidence of the acquirement of characteristics.

If we accept the theories of Weismann and grant that the chromosomes of the nucleus are the bearers of the hereditary characteristics and peculiarities of form and function; how, yet, can we conceive of material units standing for immaterial forces? Weismann himself was forced to admit that his determinants must be endowed with some vital force not physical. Bergson has said that life creeps into material phenomena adopting their laws but at the same time turning them aside at will. Haeckel denies any metaphysical basis back of things. We can not agree with him but must seek an explanation of phenomena which we have seen and recognized. Individual selection does not suffice. So germinal selection was invented by Weismann. This seems to require the intervention of use and disuse. It seems to me this is faulty reasoning. If we accept the materialistic theory we must allow the result of such a modification of the mother cell as will cause it to behave in a certain way after reproduction. This is the same whether the mother cell is a metazoon or protozoon. This modification we may suppose to be such a shifting of its molecular structure as does not interfere with or stop its handling on of its own power of repulsion or attraction. This alone can not explain heredity. Such shift may make large mutations or small individual var-

iations. It may persist or may revert, but it surely must depend upon some vital force.

Sir Oliver Lodge says "Solid matters store up in themselves any previous arrangements of their molecules. The properties of all fluids depend on their state at the moment not at all on how they reached that state. Between these two are the colloids both fluid and able to store up past experience." Yet even if we can allow similarity of vital processes with inorganic processes we have not at all explained heredity of living matter.

There is a great tendency to reduce all vital processes to mechanical formulae. No matter when life originated it was primarily a question of molecular synthesis, and the problem is how Huxley's speck became imbued with life. Always at the start we must meet with this unknowable fact, and we can theorize as we please on its forms and problems. The laws of the evolution of protoplasm are the laws of physical heredity, which evidently is separated from the mental or spiritual side of our lives even though it may be a branch of it or dependent on it. If we accept life as a function of a cell as a whole and not of its parts we remove it from the region of the organic. Certain experiments seem to show us that the life of certain cells exists in parts of themselves, but this does not demonstrate any contradiction of our theory.

Hall, in his work on *Adolescence*, says: "We may assume that certain stages of life are more conformable to Weismannism. The eozooic bases of heredity are the formative principle of all vital organs and affect all others." But if we accept monophyletic origin of animal life yet we must also see that as we ascend the scale maturity and death are longer delayed and more and more the later acquired qualities take precedence. If we admit that all the chief characteristics of the species lie dormant in the egg yet we can not deny an inherited indefiniteness or can we hold that we have no mode of action, no possibilities of activity that are not predetermined, or at least made possible by starting some reaction and at the same time rendering some other impossible.

We now will leave this brief discussion of theories, and I must ask your attention for a moment to the dual theory of mind. I have referred to this subject before in this society and must crave your indulgence, but a few brief remarks are necessary to a better understanding of the later treatment of our subject.

One fact stands out at the outset and that is, that the objective mind has one exclusive faculty, that of inductive reasoning. All other faculties concomitant with induction are shared by the subjective mind, but as existing in the subjective mind are perfect and do not grow by cultivation. Other faculties of the subjective mind are represented in the brain, as emotions. They are there registered as memories. They complete the organism of the brain and aid our inductive reasoning. Thus we see that the objective mind constitutes pure reason and judgment. In short reason is the hold man has on his free moral agency as well as the power he has to train his soul for here and hereafter. In referring to the faculties of the subconscious mind we can only consider them as in reference to an un-

ending life. Many of them are useless in this stage of our existence and all of them are imperfect. This mind of ours is limited in its powers by the fact that it is amenable to suggestion. This is only an apparent obstacle.

We may now consider our subject from the standpoint of evolution. As has been pointed out the history of the study of evolution shows duality of mind; also that the brain is not the sole seat of subconscious or undying mind. We can also hope to show that in the lowest animal life is the promise and an integral part or forerunner of human soul, and by the same evidence are we a part of the universal life.

We may start by saying that man is the product (some say the highest possible) of organic evolution. It may be shown that in the evolution of the world the subconscious mind antedates the objective or organic mind of man by millions of ages. In doing this we must first accept the doctrine of evolution which I think all men of scientific training can now do without difficulty. I next must ask you to choose one of two theories of this evolution. The first is the existence as a great first cause of a supreme infinite intelligence which is capable of impressing matter with such laws as result in the creation of worlds and men by a gradual process of evolution. The other is that the supreme being is of limited intelligence and was therefore of the necessity of making special creations as occasion demanded. I think there is no doubt as to which theory seems the true one to us all.

We accept the theory that man is ascended from the lower animals in a direct and unbroken line. This belief does not involve us in skepticism, atheism, or materialism. In fact, the study of evolution neither proves nor disproves any of the doctrines of Christianity. It begins with a germ and ends with man, but it neither proves nor disproves the theory of spontaneous generation of life or of immortality in man. It proves man the highest product of natural law, but it pauses before the question: Is this all? Many who have sought the solution of this question have begun at the wrong end.

Let us begin with the lowest form of life, a unicellular organism of simple protoplasm called by Huxley the basis of life. One of these, the moneron, according to Haeckel, is without a nucleus and hence without organs, at least visible ones. Here, then, is the very lowest of living animals. An organism without an organ. Even without a nucleus. No physical system. Yet this simple mass is endowed with a mind. It must be so. For it is mind and mind alone that can distinguish living from dead. Any adaptation of means to an end is the result of a mental process. This is the reasoning of Professor Gates who has given much study to cellular psychology. Unicellular organisms have all the forms of activity to be found in higher, more complex organisms; they can transform food into tissue; they can move themselves and parts of themselves; they respond to stimuli; they can reproduce themselves. On dividing, their offspring inherit their characteristics.

He has also demonstrated that the cell can acquire knowledge. Is not all of this proof of a mind?

What do we call this power? Instinct; or, in man, intuition.

Instinct has been defined as the power in a being to perceive and act upon, irrespective of reason, those laws of Nature which affect the individual being or the species.

This has developed wonderfully in all of us. It is the greatest force next to omnipotence. It is the subjective mind. It is the immortal organ of our ego.

We can readily see that the mental power of the moneron is before and independent of reason, experience, or education. Does not this go far to show it to be an integral part of an omniscient mind? And if we grant our development from it we accept the unquestionable presence of an antecedent omniscient mind and its ultimate development through physical man into an immortal being. Our growth in the scale is ever onward physically and mentally, whether we accept with Nietzsche the theory of superman, or whether we think ourselves to be the ultimate of possible development, we must in either case grant the imperishability of our personality.

We all know that instincts in animals can be cultivated and enlarged. Heredity plays a rôle in this. After the brain appears in evolution then instinct or intuition develops much more rapidly. The brain becomes the great educator of the subconscious mind. Cuvier held that as intelligence increases instinct decreases. This might seem so at first sight but is fallacious. Darwin in his *Descent of Man*, says, "Some intelligent acts performed through several generations become converted into instincts." He might truthfully have said all.

The acquisition of a brain by lower animals did not destroy the previously existent mind nor did the development of the brain in man destroy the intuition. Though this faculty in man is not confined to physical preservation but has a bearing on all social problems, morals, religion, conscience, etc., yet all these may be modified in and by inheritance. Also subjective memory being perfect all the experience and learning of the individual add to the equipment of his mind.

Unperverted instincts are always for the highest good of man and the race, but if perverted are capable of the greatest harm. There may exist at times in man the highest development of the intuition, as in Zerah Colburn and Blind Tom.

The brain is not the organ of the subconscious mind. All real music and appreciation of the beautiful is only in the soul.

If we must grant that the higher mind existed once independently of a brain we must also grant that it still does and can do so. We have shown that the subjective mind in animals is identical with the subconscious mind in man, differing only in degree and development. We must acknowledge that it is transmitted from one to another in both animals and man, and the logical conclusion would seem to be that many of the obscurer problems of inheritance are to be accounted for through this transmission. We say they are identical for these reasons that the faculties are the same. In animals, instinct, induction, and the emotions; in man,

intuition, induction, and the emotions, but all acted on and controlled by reason and conscience.

The materialists have been searching for a soul with a scalpel, and because they cannot find it, with fine logic insist that there is none. Twenty years ago Surgeon General Hammond showed to his satisfaction that certain mental faculties did not have their seat in the brain and he consequently decided that they were to be found in the cord or the medulla. His conclusion was a safe one in one way as we can not extirpate these organs to decide the matter, but we need not agree with him for all that. We can agree that he clearly demonstrated the dual mind. He felt that he must show the seat of mind somewhere. All materialists have demonstrated the seat of the objective mind to be in the brain. Of course, when the brain ceases to exist it too must die. This does not affect the question as to the seat of the subconscious mind. We have every reason to believe that its control of the body is not through any specific organ.

This is well shown in the case of the moneron. Haeckel has shown it to be a simple mass of plasma yet under the control of intelligence (call it instinct if you wish) but that intelligence of the type of omnipotent mind. We might illustrate this by hypnotism. We know that if the subject is thoroughly under the influence he retains absolutely no memory of any thing that occurs no matter how exacting the task. We also know that every experience has its influence on the brain cells whenever the brain takes cognizance of it, thus creating brain memories. The absence of these memories, therefore, shows that the brain was not cognizant of these experiences of the hypnotized. The monist or materialist argues something as follows: Mind is the function of the brain, meaning mind as not dual. It exists in that organ. Each faculty of the mind has its seat in a certain portion of the brain. When that centre is destroyed that faculty disappears. When the body wastes and grows weak so does the mind. All this is true but only of the objective mind.

The subjective mind is not an effect, a function, but a cause, and antedates physical environment. It is *immanent* in but not *inherent* in the body. The objective mind can not control a single involuntary muscle. The objective mind only wields the voluntary physical system. But the subjective mind not only has control of the involuntary muscles but at times can assume control of the whole body as when the will is paralyzed by fright or when the person is in the hypnotic state.

The objective mind grows weaker and is often obliterated before death. On the contrary, the subjective mind, as is proved by the investigations of the Society for Psychic Research, grows at that time stronger and its powers more plainly evidenced.

We have somewhat digressed from our subject but with a purpose. We have shown that the mind has evolved as has the body but more perfectly and to a greater degree.

We have shown that while we inherit our physical and mental characteristics that we are able to modify and develop them by means of the control we have over our eternal minds through the agency of our reasoning conscious will. And that

all the changes we can thus produce in our mental and physical beings go on down to endless posterity, and have their effect on the race and the world at large. In tracing the ascent of mind from moneron to man we have shown its susceptibility to development and its power over our physical welfare. We might if we had the time discuss the facts which show that mind of man is immortal but this is irrelevant. In conclusion,—We acquire knowledge in two ways: 1, By intuition or as an inheritance; 2, by education or training of our conscious mind which in its turn has an influence over our subconscious mind and its inherited faculties. These newly adjusted faculties we may in turn transmit to our offspring.

Thus the race physically and mentally rises from the lowest manifestations of matter and mind in its steady approach toward the infinite.

613 UNION STREET.

TUBERCULOSIS OF THE KNEE JOINT.*

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Tuberculous disease of the knee joint, sometimes known as tumor albus or white swelling, is an infection of the knee joint tuberculous in character, and is caused by an invasion of the tubercle bacillus. This seemingly unimportant opening statement is made in all seriousness and with emphasis because many practitioners still do not seem to realize that in dealing with tuberculous bone diseases that the bacteriology is the same as when they have tuberculous disease elsewhere, and usually ascribe the lesion to a fall, an injury, some previous disease, etc., all of which may be secondary causes, but the disease itself depends upon the presence of the tubercle bacillus in the tissue affected and which may have been there for years unable to do harm, until for some cause the resistant power of the tissue—its vitality—became lessened and then immediately favorable soil being present a focus of tuberculous activity is started up. In this paper we shall follow the course and results of such a focus in the knee joint, and particularly in the knee joints of children, where the disease most often occurs, although a good deal of what I shall say also refers to adult patients of whom there are very many.

In regard to the number of cases, knee joint disease comes third, the spinal column and the hip joints being respectively first and second as to tuberculous disease in bone and joints. The spine, however, is attacked from two to three times as often as the knee joint, and the ratio as regards the hip joint is about the same.

Etiology.—Several factors enter into the predisposition to this or any other tuberculous infection or disease. Several things which render favorable the soil for the growth of tubercle bacilli. The first is a positive family history in a member of the family who has been or is around the child more

or less frequently. This member may have any kind of tuberculosis, from a slight glandular infection to pulmonary lesions, and be a menace; but a positive family history where the infected person rarely if ever has seen the patient or come into close contact with him I do not think counts for much. Associations outside of the family may be of more importance, for tuberculous patients in the main are still rather careless of the health of others, despite the very earnest and hard work of the profession to educate them otherwise. Again vitality or body resistance may be lessened by the sanitary and hygienic surroundings of the patient. Poor, overtaxed, and hardworking women, under nourished and anemic, cannot be expected to give birth to the healthiest, sturdiest race of children, nor can these selfsame children, already handicapped by not over strong constitutions at birth, be expected to improve them living on a steady diet of the poorest kind of food, and often not even enough of that; and in the worst possible hygiene, unsanitary surroundings. Even among children of the better class the mad social aspirations of the mother cause weakling children to be born, and these children left in the care of others besides the mothers get food not calculated to do them the most good in a health giving way, and the fear that they might not always look like dolls dressed for a window display does not allow them to take part in the health giving and strengthening sports of other children at play. Again the vitality of the tissues may be lessened by attacks of the infectious diseases such as measles, pertussis, scarlet fever, etc., and this seems to be a very important factor, as we are very often told that the patient was perfectly well until an attack of one of these diseases, and then the bone or joint trouble began. Another predisposing cause and also one of great importance is a focus of tuberculous disease elsewhere in the body, and particularly in the glandular tissue, or in tissue very well supplied by the blood stream. The chances for dissemination under these conditions from broken down tissue is very apparent. Injury to the joint may help to lessen the local vitality. The sexes are about equally affected with a very slight percentage in favor of the males.

As to occurrence it can be said that this disease is quite frequent up to the twelfth year of life, and not so uncommon up to the twentieth year at which time ossification of the bony tissues is about complete. About fifty per cent. of the cases occur from the second to the sixth year. Children are more often attacked than adults for the simple reason that the newly formed bone can offer less resistance to the invading host than can more mature tissue.

Pathology.—The seat of the disease is usually in the epiphysis of the femur or tibia and less often in the synovial membrane. It may originate in any of the constituent parts of the knee joint however. The changes in the tissue caused by the tuberculous process are the same as would be caused elsewhere and are therefore probably familiar to you, so I will not take up your time with them here.

Bacteriology and Mode of Infection.—The tubercle bacillus is the primary cause of the trouble and with it may go streptococcus and other varieties. The exact mode of entrance into the body of

*Read at a special meeting of the Medical Society of the Greater City of New York, held in the Borough of Richmond, on June 2, 1909.

this germ is in dispute, but we are safe in saying, I think, that both the gastrointestinal and the respiratory tracts admit the germs to the blood and lymph streams and that the tonsils are certainly a favorite port of entry for these unwelcome visitors. They reach the knee joint through the blood current and lymph stream.

Symptoms.—These may be classified as subjective and objective; the subjective being pain, more or less disability, and stiffness; the objective are limping, swelling, change of contour, sensitiveness to touch, limitation of motion, local heat, atrophy, distortion, muscular spasm, apparent lengthening or shortening of the affected limb. Usually a careful history of the case, gotten from the patient or parent, will show a most insidious onset with more or less constant pain but with night exacerbations, a slow but constant atrophy of the tissues not noticed at first, a limp which developed very slowly, a disposition on the part of the patient to avoid much use of the affected limb and to guard it most carefully against jars, knocks, or injuries of any kind. The patients complain of a slight stiffness on arising in the morning which at first wears away during the day but later persists. There is a gradual enlargement of the joint which later becomes accentuated by the atrophy of the tissues. At first they may have noticed some local heat, but oftentimes they will tell you they did not. What they have noticed is that the freedom of motion of the limb is impaired. They can't bend it or stretch it as much as they used to.

In your objective examination you will find a change of contour as compared with the good joint on the opposite side. The degree of this change will depend upon the progress of the disease at the time of your examination, as will also the swelling. In an acute case there will be a good deal of pain which handling of the joint will intensify. If, however, the disease is in the chronic stage much pain may not be elicited except by pressing the articular surfaces together, by jarring, or by attempting to overcome the existing muscular spasm. When the patient walks for you a slight limp is apparent or the limb is held in a slightly flexed position causing the patient to walk in equinotalipes. Local heat may or may not be present. On attempting to put the knee through its normal movements, limitation of motion and muscular spasm will be apparent, and therefore complete extension will probably be impossible, and flexion also will be decreased. In late cases a permanent flexion deformity may be present which may give rise to still further deformities such as subluxation and outward rotation of the tibia or a backward displacement of the tibia with subluxation, etc.

Diagnosis.—In this disease as in many others the earlier the diagnosis and the establishment of efficient and proper treatment, the better the prognosis and ultimate result. What then are the salient features of this disease which will help us to a proper diagnosis?

1, A limp developing from no apparent cause such as a fall or injury; 2, pain and sensitiveness without redness and immediate large swelling in one knee joint only and without the constitutional reaction of a rheumatic nature; 3, change of con-

tour in the joint and particularly if accompanied by atrophy; 4, slow and insidious development of a flexion deformity; 5, "night cries" (unguarded movements of the child cause exacerbation of pain which is so sharp and sudden that an involuntary cry of suffering comes from the child); 6, persistent morning stiffness confined to one knee joint; 7, a sudden disposition of the patient to avoid activity and to guard the limb against quick change of position or jarring; 8, any or all of these symptoms during or after convalescence from one of the aforementioned diseases when I spoke of the etiology of this disease, or after trauma; 9, a positive tuberculin reaction in a suspicious but doubtful case, especially in children under five years of age, where other tuberculous lesions can be practically excluded; 10, a positive x ray picture.

The Tuberculin Reaction.—Of what practical value are these reactions you may ask, and the answer is that opinions vary very much; so much so that it is hard to say just what is their exact status to-day. Some are still very enthusiastic believers in their value, while others now think very little of them. Of the three reactions known as the Calmette or eye test, the von Pirquet or vaccination test, and the Moro or cutaneous test, only the latter two are now in any great use, the Calmette test having been practically abandoned because of some bad results following its use in the eyes. Of the other two the quickest to react and perhaps the most reliable, for it gives a positive reaction oftentimes when the other fails to give any, is the von Pirquet test. Owing to the fact that these tests are so delicate that the smallest tuberculous lesion anywhere in the body reacts to them they are more important, as to their diagnostic value, in their negative phase. Many authorities who have made special trials of these tests in a series of cases report that almost everybody over five years of age react to them owing to some tuberculous focus, usually only some small gland in many cases giving the reaction. As you know autopsies show that nearly every patient examined has had some large or small tuberculous lesion in the lungs, the glands, or elsewhere; and yet in life showed no signs of being infected with tuberculous disease. All things considered one must, I believe, consider that at present stronger evidence of real serious tuberculous disease must be found to condemn a patient than merely a positive tuberculin test. In several cases of tuberculous disease, proved by bacteriological examination or autopsy, negative tests have been reported.

Differential Diagnosis.—As in every pathological condition there are several diseases simulating each other but with enough points of difference to make the condition a separate one and oftentimes caused by an entirely different train of symptoms and bacteria. The following are the most important to differentiate tuberculous disease of the knee joint from:

(a) Rheumatism: Acute mode of onset, involvement of several joints, pain, heat, redness, swelling, sweats of an acid reaction. Oftentimes previous history of like attacks or a predisposition to amygdalitis. Sometimes you find a heart lesion from a previous attack. You also have the therapeutic test of a course of salicylates or the alkaline treatment.

The constitutional reaction in rheumatism liable to be extreme.

(b) Gonorrhœal rheumatism or arthritis: Acute mode of onset, history of an attack of gonorrhœa which may be found on examination still to be present in an acute, subacute, or chronic stage. Extreme pain, heat, redness, swelling. Examination of the urine shows casts, shreds, gonococcus of Neisser. Usually several joints involved. Therapeutic test of antigonorrhœic treatment and local applications to the joints.

(c) Scurvy: Swollen, bluish, bleeding gums, history of improper feeding, pain in limbs only on handling, bilateral involvement, oedematous condition of tissues, therapeutic test of orange juice.

(d) Hæmorrhosis: History of causation, previous history of patient as a "bleeder." Sudden onset and immediate swelling with gradual recession under treatment.

(e) Hip disease: It is important to remember that in hip disease the pain is often referred to as in the knee joint. A careful examination will show that the knee is free from any disease and that the hip joint is the seat of the trouble.

(f) Injury: History, external marks of trauma, acute onset with pain, swelling, and an acute inflammatory reaction.

(g) Rachitis: History of improper feeding, enlargement and not swelling in the epiphysis of all the bones, rachitic bracelet, cranial tabes, beaded ribs, "Harrison's groove," "pot belly," rachitic shape of head, saddle back nose, lack of pain, etc.

(h) Synovitis: To quote Whitman "chronic synovitis of doubtful origin which shows no tendency towards recovery, is usually tuberculous in character."

(i) Syphilis: History of the case, tendency to pain in the shafts of the bone, absence of much pain in the joint, lack of muscular spasm. If in an infant the signs of early syphilis should be present such as the typical rash, the snuffles, acute epiphysitis, malnutrition, tendency to hæmorrhage, etc.: If in a child with second teeth "Hutchinson" teeth may be looked for. If in adult the signs of the original lesion and the rash may be present, tendency to sore throat, etc.

(j) Charcot joint: Previous history of specific disease, slight pain, lack of muscular spasm, rapid weakness and deformity.

(k) Still's disease, rheumatoid arthritis, other arthritic conditions: These all show involvement of more than one joint, the pain is general in all parts involved, some constitutional disturbance usually exists in conjunction with the trouble.

(l) New growths: Best diagnosed by means of the x ray. History of insidious painless onset, gradual increase in size, later general constitutional reaction such as weakness, emaciation, etc.

(m) Nervous affections: There are various nervous diseases which affect the knee joints but they are usually bilaterally involved and other joints are also affected.

Prognosis.—The prognosis in cases of tuberculous knee joint disease must be guided by conditions. With no tuberculous involvement except in the knee joint the outlook as to life is very good, but with a pulmonary disease or tuberculous lesions elsewhere the life of the patient is in more or less

danger. A diseased knee joint with abscess formation is liable by dissemination from the original focus of disease to change the outlook of a case by causing foci of disease to be set up elsewhere in the body. The prognosis as to the joint itself will also vary with the existing conditions and on how early the case came under the proper treatment. An early diagnosis and immediate treatment will often give a result that will almost defy any examiner to say that there was ever any disease in the joint. This shows how essential it is to make the diagnosis as soon as possible. If there is any doubt in your mind treat the suspected case as a positive one. Active treatment can do no harm to a well joint or even to a pathological one with the lesion of another disease, but delay in treatment will be very harmful to a tuberculous joint, while a positive diagnosis is being decided on. On this point one cannot be too emphatic. These patients do not consult the specialist in the beginning, therefore oftentimes intelligent treatment by the doctor who first handles the case will do much toward helping to a favorable prognosis. Some limitation in the motion of the joint is liable to result and does in most cases, but I have seen some where the motion in the cured joint is practically as good as in the nondiseased joint. Flexion deformity occurs in some cases, but this, I believe, is usually a result of improper or unskillful treatment or treatment not carried out for a long enough time, although it may occur in very severe cases despite our best efforts. Depending on the severity of the case treatment should be carried out for from one to five years. Patients are not cured until all and every symptom has disappeared. The correction of any resulting deformity should then be carefully considered. In some cases leaving well enough alone is the best policy. Each patient must be most carefully judged by its particular merits.

Prophylaxis.—What can be done in a preventive way so far as this disease is concerned? Many things seemingly unimportant to the average physician, yet all tending to improve the resistant power of those who come to us in health as well as disease. Education of parents in the care of their children physically and morally from birth to the age of puberty and beyond. It is far more important to prevent than to cure, although from a financial standpoint the reverse might be more beneficial to us. The prophylactic care of our patients should begin at birth, which means that many physicians must become better pædiatrists than they are at present, not only in their knowledge of the diagnosis and treatment of the diseases of children but in the very, very important subject of infant feeding, for often it is in these days of infancy that our patient is going to be put on the road to health or ill health, as the case may be, depending on our knowledge of pædiatrics. Therefore our first prophylactic measure is to see that infants are fed properly. Properly fed infants gain weight and strength, thereby increasing the vital resistance. Owing to the present tendency "to toughen" children or in other words to increase their natural resisting power, we must be on our guard against extremists who do things "without rhyme or reason," tending to decrease rather than increase this natural resisting power. Attention must be paid to the habits of children so that constipation is not allowed

to develop and become a fixed habit. Growth from infancy to childhood is not to be a single leap from the mother's breast or the nursing bottle to the course dinner of the banquet board, therefore it is as necessary to regulate the diet of the growing child as it was the young infant. Tonsils and adenoids which give constant trouble must be removed. The necessity of taking excellent care of the first teeth of the child should be impressed upon the parents. Also the importance of daily care of the mouth itself. Teach the public that fresh air is just as good at night as in the day time, and in the winter as well as in summer. Children with bad family histories must receive special attention. And it is indeed of great importance that children convalescent from any one of the usual diseases of childhood receive care of the closest kind, not only in this stage of their illness but for a long while afterwards or until they have regained their normal health and strength.

Treatment.—The treatment of tuberculosis of the knee joint may be designated as conservative and operative. In children the treatment is usually conservative whereas in adults in early cases particularly excision of the tuberculous area is in vogue, or where long continued suppuration is a menace to life amputation may be practised. This latter would be true in children also. I particularly designated one kind of treatment as conservative and not medical, because as yet we have no medicine, serum, or vaccines that have given consistent results in a series of cases. As yet our best remedial agent has been old Dame Nature, assisted by the allies we have supplied her with in the form of plaster of Paris, braces of various kinds and designs, and a combination of the two. True, there are various mixtures of this and that to be applied to the joint, injected into the joint, or given by mouth which are recommended by one man or another, but for none of them can much be said. I have heard of a few good results from tuberculin injections in these local tuberculous foci and am now trying them myself on several patients, but it is as yet too early to praise or to condemn this treatment so far as my own series of cases go. If one will go about it in the right way it is certainly worth trying as with proper care no harm can result anyway and benefit may.

The conservative treatment consists in immobilizing the knee joint as completely as possible. The usual way of doing this is by applying plaster of Paris to the joint from a point starting up in the groin, or a little ways below it, to just above the ankle joint. This not only immobilizes the joint but prevents flexion deformity and is a cheap, effective, and practical method of treatment. This treatment can also be used in conjunction with braces. Regarding the danger of stiff joints from immobilization, I would say that experience has shown that the more complete the immobilization the better the chances of preserving joint motion. Deformed joints may be gradually cured by a series of plaster of Paris dressings put on while the limb is being held in forced extension. Immobilization can also be brought about by means of braces which also are made to exert traction to prevent, or endeavor to overcome as the case may be flexion deformity. I often combine both plaster of Paris and

braces in cases, depending on the former to immobilize, protect, and prevent flexion deformity; and on the latter to relieve the joint of its share of the body weight and also to exert traction. Of the operative treatment I have already spoken. As an adjunct to both methods of conservative treatment I always make use of the Bier treatment, (hyperæmia).

When abscesses occur in the affected parts you have a very troublesome condition to deal with, and again various authorities advise different things. My treatment of this condition is to use the circular rubber bandage to cause a general hyperæmia of the part, and then to cup with suitable Bier cups the sinus openings, after which I apply to the joint an ointment of my own devising consisting of:

B	Ichthyol,	25 per cent.;
	Iodine,	5 per cent.;
	Lanolin,	20 per cent.;
	Petrolatum,	q. s. 100 per cent.

M.

The application should be made a little thicker near the sinus openings than elsewhere. Beck, of Chicago, has devised a paste for injection into these chronic sinuses, consisting of:

B	Bismuth subnitrate,	6 parts;
	White wax,	1 part;
	Soft paraffin,	1 part;
	Petrolatum,	12 parts.

M. While boiling.

This is now used quite a good deal. Lately, however, a few cases of poisoning have been reported from its use.

In conclusion I would say that my object in this paper has been to discuss this affection in a way that would be of value to the general man, and if you feel that I have succeeded in the smallest way in my intention, I am more than delighted to have had this opportunity to present my paper to you.

NO. 160 WEST ONE HUNDRED AND SIXTH STREET.

A PATHOLOGICAL STUDY OF A CASE OF PSEUDOHYPERTROPHIC MUSCULAR DYSTROPHY,

With Changes in the Heart Muscle, Cells of the Anterior Horn, Anterior Roots, and Peripheral Nerves.

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In the vast majority of cases of muscular dystrophy the usual pathological findings consist only of alterations in the peripheral muscles. Within recent years, however, different investigators have found changes in the peripheral nerves, anterior roots, and cells of the anterior horn, and besides disease of the muscles of some of the internal organs, notably the heart. According to the view of Erb (1) and his followers, alterations in the peripheral muscles are secondary to disease of the cells in the anterior horns, his view being that our present methods are not fine enough to detect whatever changes occur.

A more probable theory, and one supported by Gordon Holmes (2), is that the alterations in the nervous system are secondary to disease of the peripheral muscles. While he inclines strongly to

this view, he does not deny the possibility that there may be transitional forms of dystrophy in which alterations in the nervous system go hand in hand with disease of the muscles. To this view I would subscribe, for while this opens up the necessity for making additional classifications of muscular dystrophy, it is nevertheless a fact that there are cases in which there is involvement of the nervous system, probably not secondary to muscular disease. Such a case is described here.

CASE—E B., white, male, age fifteen years, admitted to the medical wards of the Philadelphia Hospital, February 18, 1907, in the service of Dr. Thomas G. Ashton with whom the case was seen in consultation by Dr. T. H. Weisenburg. The patient's father was dead, cause not known, but mother and four sisters and brothers were living and well. There was no record of any similar disease in the family so far as known. The boy had measles and whooping cough, but none of the other diseases of infancy. Two months after his admission pneumonia developed from which he died.

According to the history, the weakness in his limbs came on during infancy. The boy never walked normally, and from about the age of nine, six years before observation, he had not been able to walk, although no distinct history was obtained of the exact time of onset. The case presented all of the typical features of pseudohypertrophic muscular dystrophy. The muscles of the lower limbs, especially of the calves and thighs were very large and firm on pressure. The abdomen protruded in a typical manner and the shoulders were retracted. Power was almost completely lost in the lower limbs, there being bilateral toe drop. In the upper limbs, the diminution in power, while very great, was not as marked as in the lower. The muscles of the back, shoulders, and upper limbs were much atrophied, but no fibrillary tremors could be seen anywhere. Apparently there was no involvement of the facial muscles and the eyes and cranial nerves were normal. There was no pain on pressure over any of the nerve trunks, and no disturbance of sensation. The bladder and rectum were normal. The reflexes were everywhere lost.

Post mortem examination, performed one day after death, showed a total absence of rigor mortis. The pathological diagnosis made was fibrous pleurisy of both lungs, purulent bronchitis, peribronchial pneumonia, subacute nephritis, and passive congestion with fatty metamorphosis of the liver.

The heart weighed 150 grammes, and showed a distension of the right auricle. The shape was well preserved. The muscle was pale and the fat seemed normal in amount. The pericardium was slightly thickened, and the valve leaflets showed no changes, but the cardiac muscle seemed pale and less firm than normal. The left ventricular wall measured 12 mm., the right 8 mm.

The gastrocnemius and other muscles were pale pink in color and streaked with yellow. In fact, the whole muscle had a yellowish appearance.

Microscopical Examination: The alterations in the lungs, spleen, and kidneys were those to be expected in a person dying from pneumonia.

The liver showed for the most part fatty infiltration, but this was so marked that in no instance could a complete lobule of liver cells be seen, this showing the intensity of the fatty infiltration. Around the central vein, which was dilated, a few liver cells could be seen, and these were the seat of innumerable fatty droplets of smaller size. Hemosiderin pigment was found in the liver cells.

Heart: In the pericardium present, there was an increase of fat, which in a few areas extended between the muscle bundles. The endocardium, where present, was apparently unchanged. In the muscle fibres, cut longitudinally, no distinct evidence of atrophy was seen. In fact, in places the muscle fibres were increased in size. In other areas there was evidence of atrophy of the fibres, and in these the transverse striations were indistinct and in many cases lost. Tiny droplets of fat were noted in some of the muscle fibres. In the area in which the fibres were of normal size, the striations were lost. There was considerable fragmentation in patches throughout the section. No decided fibrosis was noted, but in places a slight increase of fibrous tissue was found. In one area, just above the endocardium in the region of the papillary muscle, the

fibres were widely separated, somewhat torn, and the spaces were occupied with red blood cells and granular material. Sections taken from the peripheral muscles in different portions of the body, especially from the pectorals, erector spinae, thigh, and calf showed the usual changes of pseudohypertrophic muscular dystrophy and will not be further described.

The peripheral nerves, taken from the calf, thigh and hand, were smaller than normal and could be readily demonstrated in cross sections. The nerves were stained by the usual methods. There was a marked increase of connective tissue. The myelin sheaths in places stained poorly or not at all. The degeneration was equal in all the nerves examined.

The anterior spinal roots in the cervical, thoracic, and lumbar regions were much smaller than the posterior, and this was as well marked in the thoracic as in the cervical and lumbar. Microscopical examination showed a slight degeneration of the myelin fibres and an increase of connective tissue, but, most marked of all, the number of fibres in cross section seemed to be much diminished and in comparison with similar normal sections their diameter was considerably less.

Spinal cord: Sections taken from the sixth and eighth cervical, midthoracic, and second lumbar segments showed a marked diminution in the number of nerve cells in the anterior horns, especially in the ventromesial group and to a less extent in the dorsolateral. This was especially true in the sections taken from the lumbar area. The nerve cells were shrunken and somewhat smaller than normal, the nuclei were puckered, and the granular substance did not stain as well as it should, but in most places the changes consisted only in a shrinking of the cell. There was no yellow substance found in any of the cells. The greatest changes, however, were found in the cells of Clarke's column, especially in the lumbar segments. Here the nuclei were displaced to the periphery, the cells were swollen, and the granular substance stained diffusely. Increase of neuroglial tissue was found in the gray matter, this evidently replacing the cells. It was difficult to determine whether the cells from the thoracic sections were diminished. No alterations were found in the brain.

Summary: Pseudohypertrophic muscular dystrophy developed in a boy with no antecedent or family history early in life; the boy, from the age of nine until the time of his death at fifteen, could not walk. At the time of death, resulting from pneumonia, there was inability to use the lower and to a less extent the upper limbs, hypertrophy with fatty infiltration of the calf and thigh muscles, protrusion of the abdomen, atrophy of the chest, shoulder, and arm muscles, and a complete loss of reflexes.

Necropsy demonstrated typical changes in the peripheral muscles, smallness and degeneration of the peripheral nerves, diminution in the size and degeneration of the anterior roots with a degeneration and some disease of the cells of the anterior horns, most marked in the ventromesial group and in the cells of Clarke's column, especially of the lumbar cord. Besides there was a marked fatty infiltration in the liver with an hypertrophy, atrophy, and fatty infiltration of the heart muscle with a slight fibrosis.

It is unnecessary to review the literature here, for this has been recently well done by Gordon Holmes. As he remarked, the type of dystrophy is of no importance for alterations in the cells of the anterior horn, ventral roots and peripheral nerves had been found in all the usually accepted forms. It might be well, however, to state that of these, this makes the seventh case of the pseudohypertrophic form in which such changes have been described.

The alterations in the nerve cells in my case were similar to those described by Holmes, that is, there was a reduction in the number and in the size of the cells. There was, however, in addition, a distinct

involvement of the cells of Clarke's column, this not being noted in the case of Holmes. There was no pigmentation in any of the cells, this being most marked in the case of Holmes and others. The diminution in the number of cells as in the other cases, was most marked in the lumbar cord.

The smallness and the degeneration of the anterior roots and peripheral nerves do not differ from that of the other cases described, with the exception that there were also similar alterations in the thoracic roots. This can be accounted for, however, by the fact that there was marked involvement of the thoracic and abdominal muscles.

The most important finding, however, in this case is the disease of the heart muscle. In the literature, in only eleven cases, including the present, has the heart muscle been examined. Among these, four cases only have been subject to microscopical study. Of these one showed apparent hypertrophy on macroscopical examination, but when the sections were microscopically examined no changes were found. Middleton (3) found the heart small and pale at autopsy, but microscopical examination demonstrated no changes except a slight increase in connective tissue.

Rinecker (4) and Goetz (5) reported an apparent hypertrophy at necropsy, but did not mention microscopical examination of the tissue. Erb (6) found the heart pale and flabby in a patient of thirteen whose calf muscles were hypertrophied, while other groups showed an atrophy. Cardarelli (7), in a patient of fifteen years, found the heart normal in size, but somewhat pale in color, with marked subepicardial fatty deposits.

Charcot (8), Eulenberg and Cohnheim (9) found the heart uninvolved.

In this, the second case of pseudohypertrophic muscular dystrophy in which marked changes in the heart muscle have been described after microscopical examination, we believe with C. H. Bunting (10), who described muscular changes, that the involvement of the myocardium is only an evidence in favor of the theory that pseudohypertrophic muscular dystrophy is a general muscle disease and alterations would be found more frequently, even in the other muscular viscera, if adequate search were made for them. Therefore, we conclude that pseudohypertrophic muscular dystrophy is a disease involving both the involuntary and voluntary muscular systems.

While the view of Holmes that the neural changes are secondary to the primary muscle disease is adequate, it is rather difficult to believe that the alterations in the peripheral nerves and especially the marked diminution in the size of the anterior roots and the number of the nerve cells are secondary to disease of the muscles. This view would be more tenable if these changes were only slight, but even in Holmes's own case the diminution in the size of the anterior roots was very marked, being only one third the size of the posterior, and in the case of Ingbert (11) who counted the number of fibres in the anterior roots, the diminution was about one half. It seems more probable then, in view of the intensity of the neural changes and the fact that they occur only in a few cases of muscular dystrophy, that there is a transitional form in which the neural and muscular alterations are coincident.

An expression of my appreciation for the privilege of reporting this interesting case is due to Dr. T. H. Weisenburg in whose laboratory I was allowed to work up the case, and who has kindly supplied me with the material.

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THE RESULTS OF TREATMENT IN 172 CASES OF PULMONARY TUBERCULOSIS IN THE OUT PATIENT DEPARTMENT OF THE GER- MAN HOSPITAL.

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The primary object of the practise of medicine is to restore to normal the physical condition of the sick as near as it is possible to do so with the minimum loss of time and suffering to the individual and the state. Much has been written and said concerning the results obtained in the treatment of pulmonary tuberculosis in the various sanatoria and hospitals; but little has been said as to the results of treatment in the out patient department of the hospitals in the cities. Sanatoria are able to choose their patients and take as a rule only those in the better physical and financial condition. The out patient department must take everything that comes from the incipient to the far advanced case. The patients are, as a rule, not only without the luxuries of life but in many cases in need of the bare necessities, for in many cases their physical condition does not permit them to work. The results of a battle under these conditions are worthy of study even though they be not as brilliant as those fought under less strenuous circumstances. The dispensary class is at present looked upon too often merely as a segregation depot for the collection of cases preparatory to transfer to the various hospitals. This last is easier said than done especially so for the cases in the second and third stage of the disease. In the mean time the tubercle bacillus is just as busy as ever, and as a result many patients rapidly pass into that stage in which no treatment promises much result. It is true that in the short space of fifteen months not much that is positive can be deduced from the results in as chronic a condition as tuberculosis, especially when the decision as to a positive cure cannot be made in less than two years.

The patients here reported have been about equally

divided in the classes directed by Dr. R. Stein, Dr. S. Breitenfeld, and Dr. Theobald, all under the supervision of Dr. A. Jacobi as chief. I would here express my thanks to these gentlemen for the privileges accorded me in incorporating their cases in this report. Our patients have been mostly of Hebrew or Teutonic extraction who live and work under those surroundings common to the tenement house dweller in the large cities. No patient less than two months under treatment has been incorporated in these statistics. In all cases the diagnosis has been positive either by positive sputum report, positive tuberculin test, or a combination of physical signs and history that left no doubt as to the condition. The classification and results of treatment adopted by the National Association for the Study and Prevention of Tuberculosis has been chosen as a standard. It is as follows:

I. Incipient. Slight initial lesion in the form of infiltration limited to the apex of a small part of one lobe. No tuberculous complications, slight or no constitutional symptoms; particularly including gastric or intestinal disturbances or rapid loss of weight. Slight or no elevation of temperature or elevation of the pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.

II. Moderately advanced. No marked impairment of function either local or constitutional. Localized consolidation moderate in extent with little or no evidence of destruction of tissue, or disseminated fibroid deposits; no serious complication.

III. Far advanced. Marked impairment of function, local and constitutional; localized consolidation intense; or disseminated areas of softening, or serious complications.

Cured. All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Apparently cured. All consolidation symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Arrested. Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Unimproved. All essential symptoms and signs unabated or increased.

The treatment can be considered under two heads, hygienic and medicinal. A positive diagnosis having been established, the hygiene of the patient's home and work have been inquired into and where faulty corrected. The same has been done with the personal hygiene of the patient. All patients have been told to live and sleep in the open air as much as possible. A number have been persuaded to sleep on the roofs of their tenements; others, about ten in all have been fairly constant attendants at a day camp; many others again have given up indoor labor and have taken up outdoor work. All of this has been most carefully supervised by our visiting nurse, Miss Henschel. All obstructions or abnormalities of the upper air passages have been attended to (adenoids, deviated septa, etc.). Medicinally the treatment has been symptomatic, specific, combined with forced feeding. Symptomatically we have treat-

ed the cough, night sweats, etc., with medication when necessary. As to specifics, ordinary to a majority of the patients have had creosote or rivatives in one form or another. A few have the much lauded succinimide of mercury. In forced feeding we have used milk, eggs, and the various proprietary preparations said to have either a high albumin or carbohydrate content. The patients have been instructed to eat once for themselves, once for the disease, and once for recovery. We would note here the frequent occurrence of apparently rheumatic pains which disappear with the exhibition of sodium salicylate, in those cases progressing toward recovery. These pains follow a period of overnutrition, disappear after treatment, only to reappear after another period of overnutrition, the patient meanwhile improving as regards the pulmonary condition. Fully fifty per cent. of those patients classed as improved had these pains.

In all we have had 172 patients under treatment, of these sixteen died, and are not taken into consideration except in estimating the percentage of results. In considering the results it must be borne in mind that we did not pick our cases, and that fully twenty-five per cent. of those patients now classed as improved will in another twelve months be placed either in the apparently cured or arrested class if the present rate of progress is kept up.

RESULTS IN THE VARIOUS STAGES OF THE DISEASE.

	Total.	I. Stage.	II. Stage.	III. Stage.
Males	91	47	32	12
Females	65	29	24	12
Average age	31	27	35	31
Average time under treatment in months	6	7	6	5
Average gain for all who gained in pounds	5	6	6	2
Average loss for all who lost in pounds	4	3	5	5
Apparently cured	3 (1 3/4%)	3	0	0
Arrested	14 (8 3/4%)	8	6	0
Improved	65 (37 3/4%)	43	20	2
Not improved	74 (43 %) 22	30	30	22
Died	16 (9 1/2%)	..	..	..

In computing averages fractions have been disregarded.

Much more instructive, however, are the tables contrasting the results in the various stages. As is to be expected our best results were obtained in the early stages of the disease. That the gain in weight in the improved class should be more marked in the second stage is to be expected since these patients have originally lost more as a result of the disease. It must also be taken into consideration that all but ten of our patients have been at work on and off during the course of the treatment, and that for them the care of their condition was secondary to the maintenance of those dependent on them. The results in those not working will be considered later. In the nonimproved class many patients had on admission some complication. Two had diabetes, one an exophthalmic goitre, four had an old endocarditis, six had enlarged cervical glands, and ten tuberculous infiltration of the larynx. Some of these were improved in the pulmonary condition but not in the complications; they are, therefore, included in the nonimproved cases. In those patients classed as nonimproved the results are not as discouraging as would appear at first. The small loss of weight should be considered a gain in the general condition, if one considers the usual rapid loss of weight in the latter stages of the disease. While we have not been able to consider the patients im-

involve the course of the disease is much slower being usual at this time.

Stage of disease.	Apparent cure.			Arrested.		
	I	II	III	I	II	III
Male.....	2	0	0	8	2	0
Female.....	1	0	0	0	4	0
Time of treatment in months.....	13	0	0	9	12	0
Average age.....	28	0	0	25	30	0
Average gain in pounds.....	18	0	0	13	12	0
Average loss in pounds.....	0	0	0	0	0	0
Stage of disease.	Improved.			Not improved.		
	I	II	III	I	II	III
Male.....	13	2	1	12	17	10
Female.....	10	2	0	10	13	12
Time of treatment in months.....	4	8	6	5	5	5
Average age.....	20	32	53	20	27	29
Average gain in pounds.....	4	6	2	5	3	9
Average loss in pounds.....	0	0	0	2	4	5

In computing the averages in this table fractions have been discarded.

Through the courtesy of the Presbyterian Hospital we have been able to send a number of our patients to their day camp. Of these but ten have been regular in attendance. They have been in attendance at the camp about six months. In this small group we have had our best results.

RESULTS OF DAY CAMP TREATMENT.

	Arrested.	Improved.	Not improved.
Male.....	3	2	1
Female.....	1	1	2
Average age.....	18	17	28
Average time of treatment in months.....	12	6	0
Average gain in pounds.....	12	0	0
Average loss in pounds.....	0	0	4

Conclusions.

A fair percentage of tuberculous patients can be cured in the cities.

There is an urgent need for more day and night camps in the confines of the city.

Some provision should be made for the healed or partly healed consumptive, so that an out of door position can take the place of his former indoor one.

There should be greater facilities for the treatment of advanced cases.

222 WEST ONE HUNDRED AND THIRTY-SIXTH STREET.

CONTRIBUTION TO THE STUDY OF THE BLOOD PRESSURE IN GENERAL PARESIS.

By A. SCHMIERGELD, M. D.,
New York.

(From the Psychiatric Institute, Ward's Island, New York.)

The opinions of the writers who have studied the blood pressure in general paresis vary. While Craig¹ concludes that the pressure is as a rule high in the depressed condition and low in the excited. Pilcz² states that it is in the great majority of cases low and falls rapidly before the excitus. Walton³ having studied a great number of cases finds: 1, That the average blood pressure in paresis is high; 2, that in cases without atheroma, cardiac enlargement, or renal disorder it is somewhat lower than in health; 3, that the depressed states of paresis are accompanied by high pressure, while the excited states are as likely to be accompanied by high as by low pressure. Bravetta⁴ found in forty-eight cases the pressure normal or below the normal only in six cases; all the other patients had a high pressure. This author did not notice any relation between the pressure and the mood of the paretics.

The difference of opinions can easily be explained. The blood pressure is a result of so many factors, its variations in a normal individual can be so important, that different studies of the relation between pressure and certain mental diseases made on a great number of aged patients must lead to different results. The height of the blood pressure depends upon the state of the peripheral blood vessels and the strength of the heart. Emotions, cheerful or sad, rest, work, meals, all these factors exercise an influence on the tension of the arterial walls. In normal individuals the blood pressure can vary widely, differences of 20 m.m. are frequent. It follows from these brief considerations that, to avoid to a certain extent errors, researches of this kind have always to be made not only, as far as possible, in the same conditions, but several times in every case. I had the opportunity to observe in many cases variations from 120 (normal) to 105 (low), from 125 (normal) to 145 (high). I measured the pressure of forty patients; the observations have been made with the apparatus of Janeway, and all usual precautions have been taken. The pressure of every patient has been measured a few times (5 to 7) and the number which figured most frequently was accepted as the right one. The majority of the patients were in perfect physical health and only a very small number were confined to bed. The results I have obtained can be summarized as follows:

Pressures.	Number of patients below 40 years.	Between 40 and 50 years.	Above 50 years.
90.....	1	3	
100.....	2	1	
105.....	2	4	
110.....	4	5	1
115.....	1		
120.....	1	1	2
125.....	1	2	
130.....	1	2	1
135.....		1	
140.....		4	
150.....		1	1
170.....		1	
200.....			1

If we accept with Walton the statement that below forty years the normal pressure is 115, between forty and fifty years from 115 to 138, and above fifty years, 140, we can easily see that in my cases the pressure is rather below the normal. Among the thirteen paretics younger than forty years of age nine had a low pressure, one a normal, and only three an arterial tension above the supposed normal; among the twenty-one paretics whose ages was between forty and fifty years, nine had a low pressure, six a normal, and only six a high one; finally, among the six paretics older than fifty years, four had a low pressure, and only two a high pressure.

Adding these numbers one obtains twenty-two low, seven normal, and one high pressure. These proportions are certainly not absolute and they may be found different in other series of researches. I would also add that the standard numbers are somewhat too low. A pressure of 120 to even 125 in an individual of thirty-five years cannot be considered as abnormal.

I did not notice any evidence of a relation between the mood of the general paretic and his blood pressure. If it is possibly true that under the in-

¹Craig, *Journal of Nervous and Mental Disease*, 1906, p. 27.
²Pilcz, *Journal of Nervous and Mental Disease*, 1906, p. 27.
³Walton, *Journal of Nervous and Mental Disease*, 1906, p. 27.

fluence of an agreeable emotion the pressure becomes low and under the influence of a depressing emotion it becomes higher than usual, it would be an error to believe that a depressed person must have a high pressure and an excited patient a low arterial tension.

(One of my patients with a pressure of 120 was a very happy individual, who called himself the Kaiser of Germany, the richest man in the world, he felt well and happy. Another patient who was depressed, refused food and did not speak, had only a pressure of 110. Even *a priori* it seems strange to suppose that any constant relation could exist between the mood and the blood pressure of individuals of a certain age whose circulatory system has been under the influence of different diseases and intoxications. An arteriosclerotic individual with a high pressure of 180 even in the state of excitement will have a higher tension than a melancholic with a weak heart.

From my personal observations I conclude:

(1) To estimate the blood pressure of an individual it is necessary to measure it several times.

(2) The blood pressure in general paresis is very variable.

(3) In the majority of cases, however, it seems lower than in normal individuals.

(4) There exists no relationship between the mood of the paretic and the arterial tension; elated paretics can have a high pressure and depressed paretics a low one.

15 RUE LINNÉ, PARIS, FRANCE.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Closed August 16, 1909.)

XC.—How do you treat typhoid fever? (Answers due not later than September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practically no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVIII has been awarded to Dr. W. A. Wallace, Spartanburg, S. C., whose article appears below.

PRIZE QUESTION LXXXVIII.

THE TREATMENT OF EPISTAXIS.

By W. A. WALLACE, M. D.,

Spartanburg, S. C.

When called to treat a case of epistaxis we must first find the cause; whether it is symptomatic, as of typhoid fever; or idiopathic; or hæmophilia, vica-

rious menstruation; or whether it is secondary to high blood pressure incident to nephritis.

Thus we base our treatment primarily upon the existing blood pressure. When the nosebleed is present with a blood pressure at or below 160 mm. we are at liberty to use measures to stop the hæmorrhage. If the blood pressure is above 160 mm. we must use general treatment, for in these cases local treatment is contraindicated as will be shown later.

In the cases of the first class, that is cases of epistaxis with a comparatively normal blood pressure, my routine treatment is as follows: First, I see that the patient is as quiet as possible, preferably in bed, with the head slightly elevated, for if the patient faints the hæmorrhage, as a rule, stops, so we need not guard against this apparently distressing condition. Cold, either in the form of an ice bag or cold compress, is applied over the occiput and extending down to at least the seventh cervical vertebra. Fluid extract of ergot in 4 c.c. doses is then given except in cases of pregnancy. The dose is repeated in half an hour if necessary. Then with a dental syringe and hot water the clots and blood are cleaned from the nose, and the stream of hot water is continued in the nose for at least five minutes. This method will check the average case of epistaxis. But for the more obstinate cases we must proceed with more heroic treatment. After having cleared the nose so far as possible of blood a search is made for the bleeding area, which if found is touched thoroughly with an alum stick. When the bleeding point cannot be located a catheter of medium size is passed into the posterior nares, and a solution of adrenalin, 1 in 3000, is passed through the catheter and allowed to flow through the affected nostril, the patient's head being inclined forward. Recently I have used hydrogen peroxide in three per cent. solution instead of adrenalin, with most pleasing results.

The following formula has been used with gratifying results in several very obstinate cases:

R Alum,	gr. i/88;
Tincture of ferric chloride,	3iiss;
Distilled water, q. s., ad.,	3j.

M.

Applied through catheter as described.

When these local applications do not yield results the best course is to plug the nostril.

Personally, I prefer the following method: The catheter is passed on into and down the postnasal space until it can be located near the uvula. A piece of plain catgut is then passed through the catheter from the outside and in being caught through the mouth is drawn forward, then a tampon of nonabsorbent cotton previously tied with a No. 2 silk ligature is attached to the catgut, allowing the silk ligature to have a free end of, at least, two inches. The tampon is then passed through the post nasal space and placed snugly in the posterior nares, leaving the silk ligature to hang down the laryngeal wall. The catheter is then withdrawn and the catgut cut close to the nose. A similar tampon is then introduced into the nose anteriorly and above the middle turbinate bone. These tampons are allowed to remain in position for three days when they may be easily removed, one through the postnasal space, the other from the anterior.

In cases of the second class, that is, those cases of epistaxis with a blood pressure of 160 mm. or more, we are not permitted to use local treatment, because the nosebleed is simply Nature's safety valve acting to prevent a cerebral hæmorrhage. In these cases our aim should be to assist Nature in relieving the high pulse tension; and in the majority of cases venesection is indicated, especially so when we have indications of an impending cerebral hæmorrhage, such as dizziness, headache, and distended temporal veins. In the less severe cases we may use an ice cap to the head, and at the same time the hot mustard foot bath. Morphine, gr. $\frac{1}{4}$, subcutaneously, is, as a rule, required to quiet the patient. There are three important points that should always be borne in mind in treating epistaxis accompanying high blood pressure. First, do not attempt to check the hæmorrhage with local applications to the nose. Second, always treat the kidneys on account of the existing nephritis. Third, use an eliminative treatment, such as saline cathartics, to remove the nitrogenous retention that is causing the high blood pressure, and resulting in epistaxis.

In the treatment of all cases whether accompanied by high or low blood pressure we must treat the cause to prevent a recurrence. For instance, in vicarious menstruation the patient should be given a tonic, containing iron and viburnum, three times daily, for ten days before the expected menstrual period. In hæmophilia, suprarenal extract at 8, 12, 4, 8 o'clock daily. Calcium lactate at 10, 2, and 6 o'clock daily, each in five grain doses, is used with comparatively good results. In traumatic cases, the only after treatment required is rest in bed with elevation of the head.

In all cases of severe epistaxis accompanying low blood pressure we must treat the resulting anæmia. A most satisfactory method is

- B. Tincture of ferric chloride,5jss;
- Glycerin,5j.
- M. Eight drops in water, every four hours.

Each morning give a normal salt solution enema high into the bowel, the bowel having been previously cleansed with ordinary warm water.

Dr. Louis Handelman, of Chicago, remarks:

Strictly speaking epistaxis is a symptom, not a disease. Nosebleed follows in the course of a vast number of affections, both local and general. When possible, therefore, the causal factor in each case should be ascertained and an attempt made to institute the proper treatment accordingly. The success we will meet with in the treatment of these cases will depend upon the thoroughness of our search for the ætiological factor. In endeavoring to find a cause for epistaxis, it is well, for the sake of convenience, to think of local and general causes.

Under local causes we may find: 1—Trauma, usually direct to the nose, very often resulting in fracture of the nasal bones and laceration of the nasal mucosa. The proper treatment in these cases is to replace the displaced fragments of bone, pack both sides of the nose with sterile strips, and mould a gutta percha or zinc splint to fit the bridge.

2—Ulcerations. The most common ulcer is the one due to chronic nasal catarrh, located on the an-

terior inferior portion of the septum just behind the pyriform aperture. It is in these cases where the patient acquires the habit of "picking the nose." Bleeding from syphilitic ulceration is not at all uncommon. The hæmorrhage in these cases, as a rule, commences rather suddenly, is profuse and very rebellious to treatment. The treatment consists of touching up the ulcer with the pointed cautery or with a silver nitrate stick, applications of trichloroacetic acid, chromic acid, or a ten per cent. solution of antipyrine. When these measures have failed pack the nose with sterile strips of gauze wet with a 1 in 1000 solution of adrenalin. When this method is unsuccessful the use of special made nasal tampons which swell upon the absorption of fluid and cause marked pressure upon adjacent tissues is indicated. It is well in cases of severe hæmorrhage to insert these tampons into the nasal fossæ. Should the hæmorrhage come from the posterior nares it becomes necessary to pack the nose from behind. To accomplish this a Bellocq's sound or a catheter is used to pass a thread over base of palate, through the nose into the mouth. To the lower end of this thread is attached a pledget of lint, about one and one half inches by one inch in dimension, which guided by the finger around the soft palate, is drawn tightly into the posterior nares. It is well to leave the mouth end of the thread long and tie it to end from the nose. This is a good practical point to bear in mind, as great difficulty will be experienced in removing the pledget if this point should be overlooked. All packings in the nose should be left in for about twenty-four hours, never over forty-eight hours, for fear of infection and especially erysipelas; should the bleeding still persist after the removal of the packing the same measures should be repeated. Another method of arresting hæmorrhage is the use of Cooper Rose's inflating plug. Filling up the nose with Beck's paste may also be tried. When all these measures have failed and the patient is rapidly becoming exsanguinated a radical operation is indicated whereby the inside of the nose is laid open and the bleeding point exposed.

3—Tumors. Tumors are a frequent cause of nosebleed. At the head of the benign tumors stands the "bleeding polypus" of the septum. Then come the intranasal fibromata, the angiomatous growths, and not very frequently the malignant neoplasms, sarcoma and carcinoma. Removal is indicated in all cases except in case of malignancy when the tumor is already in an inoperable state.

4—Foreign bodies in the nose. The treatment here is obvious.

Under general causes we have: 1—Acute febrile diseases, especially in beginning typhoid fever; malaria, influenza, measles, etc. The treatment of the disease itself is of prime importance here.

2—All forms of chronic anæmia, pernicious anæmia, chlorosis, leuchæmia.

3—Hepatic cirrhosis, especially the alcoholic type of Laennec, characterized by a general venous engorgement.

4—Blood diatheses, hæmophilia, scorbutus, purpura.

5—In highly plethoric individuals.

6—Marked arteriosclerosis, especially when due to

chronic interstitial nephritis. It is not at all improbable that arteriosclerosis is the cause of nose bleed in women going through the menopause.

7—In cardiac affections, especially when decomposition is beginning to set in.

8—Rarely vicarious, taking the place of a normal menstrual flow.

The treatment of the nosebleed in all the cases due to constitutional diseases depends, of course, upon the treatment of the underlying disease, primarily, combined with such measures as will be required immediately to stop the bleeding from the nose.

In cases where the cause is not to be discovered, the so called "idiopathic" cases of nosebleed, one will be governed a good deal by the dictates of common sense. In mild cases, the erect posture, with arms over head, ice bag to back of neck, ice over bridge of nose, compression of nose by thumb and finger, will often suffice. In the more severe cases the measures already enumerated and dwelt upon should be tried. In cases where the loss of blood has been great and the secondary anemia following is of high degree, general measures of treatment should be instituted. Rest in bed, a good nutritious diet, plenty of liquids (enough to raise the blood pressure to about normal), fresh air, iron and arsenic, in short the measures used in treatment of any form of secondary anemia.

The object in the treatment of epistaxis, therefore, should be to stop the bleeding, to treat the cause, to prevent recurrence, and to treat the complications that may arise.

Dr. Alfred Kahn, of New York, writes:

There are certain constitutional disturbances (typhoid, plethora, etc.) which indirectly may be the cause of nosebleed. There is, however, in all these diseases also some pathological condition in the tissues of the nose, otherwise there would be no hæmorrhage. Sometimes these general disturbances are accompanied by purely local nose diseases, as ethmoiditis (acute and chronic), etc., and the nasal hæmorrhage is attributed to the typhoid condition, plethora, etc., without regard to the nasal disease. These diseases require their appropriate treatment and I will therefore not discuss them.

The hæmorrhage does not come from the whole surface of the nasal mucous membrane at once. The bleeding is usually from some particular point or points in the nasal chamber. I always endeavor to find these places and apply treatment according to whether the hæmorrhage is in the anterior half or posterior half of the cavity, high up or low down in the nose, and as to the difficulty in controlling it. A profuse hæmorrhage from an abrasion or ulcer may be easily controlled. Starting with those hæmorrhages that can be easily controlled, I will try to review the whole subject in a general way, giving methods for controlling even the most obstinate bleeding.

Bleeding in the anterior half of the nose, low down (from ulcers, abrasions, etc.) although the hæmorrhage may be profuse, can often be controlled by cauterizing. It is a mistake to pack the nose when there exists an active ulcer, far forward in

the nose, with raw bleeding edges, when they can be controlled by the mere application of a cautery.

I treat ulcers as follows: First, I clean the ulcer with hydrogen peroxide and water equal parts; second, I cocaineize the ulcer with a ten per cent. solution of cocaine; third, I dry the ulcer and mucous membrane immediately surrounding it. I use a cotton tipped applicator to apply hydrogen peroxide, cocaine, etc.; and touch the bleeding surface with either the galvanocautery electrode, or some one of the chemical escharotics (chromic acid, carbolic acid, or silver nitrate).

If the hæmorrhage is far back in the nose and inaccessible to this treatment I instruct the patient to compress the nose between his thumb and index finger and bend the head forward. This may stop the hæmorrhage by the formation of a clot. If this is not effective, and if the hæmorrhage is not sufficiently profuse as to require packing, in addition I push up the soft palate by means of an applicator tipped with cotton or a Knight nasal forceps holding a large bolus of cotton. This closes the posterior nares and is often effective.

If the hæmorrhage is general, or if it cannot be controlled by these methods, I either tampon the nose or tampon the posterior nares.

Tamponing the nose.—I tampon if the bleeding comes from the anterior half of the nose or if it is high up. I use gauze strips, two inches long and one half inch thick, coated with bismuth subnitrate powder. The gauze must be carried to the point of bleeding. If that is high the gauze must be carried well up into the nose and firmly packed. The first piece of gauze is bolstered up by the second, and so on, until the entire nose is packed. The gauze drains off the fluid portion of the blood and permits the solid particles to coagulate. The packing should be adjusted carefully, not haphazard. The pressure should be directed mainly against the bleeding vessel or vessels. The bismuth keeps the gauze from adhering firmly to the nasal mucous membrane and makes removal easy. A cotton plug is placed in the anterior nares to keep the gauze from stringing out through this opening, also to act as an indicator as to the state of coagulation. The plug of cotton can be renewed repeatedly until a piece remains almost dry. This indicates that bleeding has stopped and that coagulation is complete. It is now time to remove the pack.

Tamponing the posterior nares.—I tampon the posterior nares when the bleeding is far back in the posterior half of the nose or when the bleeding cannot be localized. I first syringe the nose thoroughly with normal salt solution. I then pass in as far back as the choana a small piece of cotton attached to a sterilized string. I then pack a long strip of gauze, eight inches long and one half inch thick, into the nose. The packing is held firmly in place by pressing it into the vault of the nose and into the side nooks. This pack is followed, if necessary, by smaller pieces of gauze, about two inches long, until the nose is packed as far forward as the anterior nares. The cotton pledget attached to the string permits the packing to be firmly held in place by preventing the gauze from dropping into the nasopharynx. This cotton pledget enlarges through the

absorption of fluid and very effectively closes up the posterior nares. The plug can always be made tighter by pulling on the string which reaches forward into the anterior nares. The anterior nares are plugged with a piece of absorbent cotton which acts as an index, etc., as already described. The cotton plug is intended as a base for the gauze. I have found this method very effective and preferable to plugging by means of Bellocq's sound or to the use of a rubber catheter passed into the nasal pharynx and drawn forward out of the mouth. I think that this method is much simpler of application and just as effective.

Hæmorrhage from the nasopharynx when continuous, should be stopped by tamponing. This can be done by passing a soft catheter with a string or cord attached through the nares and out through the mouth where the catheter is detached from the string; a large tampon of cotton or gauze is tied to the cord and pulled back around the velum palati into the nasopharynx. The nose, in addition, should be packed with gauze strips as described. Instead of the catheter Bellocq's sound can be used.

After Treatment.—I allow the gauze to remain twenty-four to thirty-six hours or longer if the anterior cotton plug becomes saturated with serum as I have mentioned. Usually upon the removal of the gauze there is a slight flow of blood mixed with a grayish discharge. This usually stops within five or ten minutes and should be let alone. Within a few hours this discharge can be washed or swabbed out with equal parts of hydrogen peroxide and water or with normal salt solution, care being taken that no fluid goes into the middle ear.

The instruments (in addition to gauze strip and absorbent cotton) that it is well to have on hand for this work are a good reflector, nasal specula (short and long bladed), long applicator, and good illumination.

Dr. Albert Llewellyn Hall, of Fulton, N. Y., observes:

Of the many methods of arresting epistaxis plugging the nares is the most effective when properly performed. For some years I employed the commercial styptic cotton as found on the market. This gave very good results but its irritative quality and the uncertainty and difficulty of removal caused me to discard its use. About fifteen years ago, I was summoned hastily to the bedside of a patient in the fourth week of typhoid fever who was rapidly bleeding to death from as profuse an epistaxis as I have ever witnessed. Some one had brought to the bedside an enormous puff ball such as is found in various parts of the country. Having no special appliances or means at hand I seized portions of the puff ball which I inserted into the nostrils and by means of a flexible catheter filled the entire nares which promptly checked the hæmorrhage. This was left *in situ* until the third day when it was easily washed away with a gentle stream of warm water. Before attempting the removal I was somewhat annoyed by the fear that I might not be able to remove it fully but my fears proved groundless. I have used this agent in quite a large number of cases of epistaxis with entire satisfaction to myself and the patient. Firm packing is not required, the only

requisite being that the nares are well filled, and the patient makes no complaint of pressure, irritation, or other discomfort.

One patient had been under treatment for three weeks for uncontrollable epistaxis, the nares during this period being plugged with gauze, which caused fresh hæmorrhage whenever removed. A single packing with a puff ball left in for two days and then gently washed away permanently arrested the epistaxis. One of the valuable features of the employment of this agent is that it can be easily removed without producing damage that may cause a return of the trouble.

My experience with this agent has been sufficiently large enough to justify the statements I have made for it, as well as to sustain the assertion that it is sufficiently aseptic which is doubtlessly due to its styptic properties.

Constriction of the arms or of all of the extremities, as near to the body as possible, sufficient to impede or arrest the *venous circulation*, is a very efficient measure for the arrest of epistaxis, and may be employed when satisfactory means for plugging the nares are not at hand.

As to the treatment of the mild, recurrent epistaxis local applications for diseased mucosa with suprarenal extract, ergot, atropine, and other internal remedies aided, perhaps, by a good hepatic cathartic will be found sufficient for nearly all cases.

In the desperate forms of epistaxis one should never waste time in attempting control with astringent or styptic agents injected into the nares. Plugging the nares, preferably with puff ball, with constriction of the extremities should be the main reliance.

Vicarious epistaxis occasionally is met with: The cause should be ascertained and removed as speedily as possible, local means being employed as the emergency demands.

Dr. Howard D. King, of New Orleans, La., states:

All forms of nasal hæmorrhage are termed epistaxis and may be due to local or systemic causes. Prior to any remedial measures ascertain the cause and determine the locality from which the bleeding originates. Epistaxis very often exerts a beneficial influence in many constitutional disturbances, and no attempt should be made to arrest the hæmorrhage unless blood loss is excessive. Vicarious hæmorrhage and the epistaxis in certain febrile conditions in many instances prove of relief and need not occasion any alarm unless the hæmorrhage is copious and, thereby, weakens the patient. The measures that most often give relief are as follows: Absolute rest in the recumbent posture with an ice cold cloth across the nose, at the same time sponging the face frequently with cold water and compressing the nares. If the hæmorrhage ceases advise the patient to lie down for two hours or more, avoid all exertion and excitement, let the diet be very simple, and prohibit alcoholic stimulation. When the hæmorrhage is not controlled by the application of cold and pressure upon the nares a hot saline nasal douche may be resorted to. Cold water douches, astringent insufflations (avoiding the use of iron), pressure upon the carotids, and cold applications to the cervical region may also be tried.

These measures failing the patient should not be any longer fatigued when pressure by packing and the local use of adrenalin is the treatment *par excellence*. Bleeding from the anterior part of the nasal septum should be controlled by plugging the anterior part of the nose with sterile gauze, thereby exerting direct pressure upon the part. Determination as to the exact site of bleeding may be followed by the local use of adrenalin. This may be repeated one or twice without any ill results. If the bleeding point can be detected it should be seared with an electrocautery. Cocainization of the part for purposes of analgesia is often followed by complete cessation of hæmorrhage; however, this should not deter us from using the cautery.

If hæmorrhage comes from high up in the nose pack the whole nasal chamber. With one finger in the nasopharyngeal region acting as a block to the gauze which is being introduced from the anterior nares we should continue with successive rolls of gauze until same is tightly wedged in the nasal cavity from behind forward. The introduction of a thin rubber nasal bag and inflating same when in position is useful but has no advantages over the gauze pack. Tamponing the nose from the region of the nasopharynx by means of a soft rubber catheter having attached to its distal end a string which is joined to a stout suture holding the tampon and which by gentle traction is drawn into the posterior nares will check all bleeding. No pack should remain in longer than a day lest same prove an agent of infection. Bleeding from rhinitic and malignant affections fall within the domain of the rhinologist and not the general practitioner.

Picking the nose and forcible efforts at blowing to dislodge the crusts, pulling the hair, introduction of foreign bodies, excessive smoking, and rough athletics must be guarded against by those whose nose bleeds easily. We should be extra cautious when we are dealing with a hæmophilic. Absolute rest with a light diet avoiding alcoholic stimulants should be insisted upon after the hæmorrhage has ceased.

Dr. A. Ludwell Hammer, of Roanoke, Va., says:

In treating epistaxis (signifying bleeding from the anterior or posterior nasal cavities), it behooves the medical man or surgeon called to get as clear an insight of the cause of the hæmorrhage and to treat it as soon as is consistent with good and thorough work, to get a resultant stoppage of the hæmorrhage, whether it be due to traumatic or idiopathic origin, as in many cases the treatment utilized depends upon the physician's quick insight as to the cause of the hæmorrhage, and if the treatment instituted readily responds we save the patient from what otherwise might have been serious or fatal hæmorrhage.

Hæmorrhage from the nose may be due to many and varied causes. In treating a case of epistaxis due to traumatism, where the blood current flows freely from one side, as a rule the importance of the upright position should not be overlooked in this class of cases, as gravity plays its part here as well as elsewhere; the mere change from the recumbent position to an upright or sitting posture is frequently sufficient to arrest the flow of blood. When,

however, there is a tendency to coma this latter position should be tried and if not well endured, lying flat on the back should be tried also.

The patient should always be placed before an open window to get all the fresh air possible, and in such a posture as to allow local applications of cold to be placed to the nape of the neck and head, in form of ice packs or ice caps: Then elevate the arms above the head, to make the blood mount against gravity, thus encouraging the formation of a clot. The patient's feet should be immersed in a basin of hot water, or his lower limbs from his hips down should be wrapped with flannel bandages wrung out of hot mustard water; then if the hæmorrhage does not cease, try pressure upon the artery, especially when nosebleed arises from anterior portion of the septum, or pressure upon the branch of the facial artery situated close to the alæ will sometimes suffice; or hot water as hot as can comfortably be borne may be used with an atomizer or syringe. But if these procedures fail, and the nosebleed persists, with evidences of weakness apparent, such as pallor and vertigo, etc., mechanical means should be resorted to at once, and the simplest of these is to pack the bleeding cavity with pledgets of sterile absorbent cotton or bits of wool, previously saturated with some good styptic large enough to exert pressure upon the bleeding surface, when *in situ*. They may be massed in with any small sterile blunt instrument at hand, but should not be left *in situ* over twenty-four hours, when they should be carefully removed and others replaced if necessary, after cleansing cavity first with solution of hot salt water or boric acid. When bleeding is from the posterior cavity we may have to resort to packing or tamponing from the rear and if necessary to do this can be accomplished by using a Bellocq's cannula, an instrument devised for this purpose, if at hand (all emergency bags should contain one), saturating pledgets of cotton or tampons with a four per cent. solution of antipyrine, which is a good remedy and in this strength possesses decided hæmostatic effect. Styptic preparations of iron may be used, but are more or less very unpleasant to both patient and physician. Sometimes lemon juice found readily in every home may be used with good results; or spraying with first a five per cent. solution of cocaine, alternating with a solution of adrenalin (5 grs. to oz.) may do well; or if a cautery can be obtained cauterizing the bleeding point would suffice.

The treatment of epistaxis varies with the cause of same, if due to foreign bodies in the nasal cavities, such as polypi, enlarged turbinates, etc., they should be removed. If due to vicarious menstruation the necessary treatment should be instituted for same. In cases of recurrent epistaxis the likelihood of cardiac lesions (organic) or hepatic, pelvic, or renal disorders should not be overlooked and the appropriate measures instituted if needs be, as in such cases treatment of the nasal mucous membrane proves inadequate, especially where vascular tension is very marked.

In conclusion, the after treatment should not be overlooked and the patient should be advised accordingly not to pick or blow the nose very much, or to strain very much at stool, or lift heavy weights, etc., as this may cause return of the hæm-

morhage. The patient's bowels should be regulated and kept so with necessary treatments, all materials utilized as regards packing or tamponing should be as sterile as possible, and especially in posterior tamponing, pledgets should not be left *in situ* too long as they may be the cause of suppurative of middle ear or complete otorrhœa.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

The Belfast Meeting of the British Medical Association.—Coroner's Inquests.—A Gift for a Convalescent Home. The Royal College of Physicians' Medals.

LONDON, August 10, 1900.

The seventy-seventh annual meeting of the British Medical Association has been a marked success. At the last meeting in Belfast, twenty-five years ago, the number of medical men that registered was 563. At this meeting the number was about 1,000. The addresses and sectional proceedings attained a high level of scientific value, and the social functions were highly successful. The presence of the Lord Lieutenant of Ireland and the Countess of Aberdeen did much to add to the interest of the meetings, for they not only were present at most of the social gatherings, but also attended the president's address, the other addresses, and some of the sectional meetings. The Lord Lieutenant was already an honorary member, having been made one at the Montreal meeting in 1897.

On Tuesday evening Sir William Whitla delivered the inaugural address at the Assembly Hall. The American and other foreign guests and the colonial delegates were introduced to the president and to the Lord Lieutenant by the honorary secretary of the executive committee, Dr. Cecil Shaw. At the conclusion of the address, which referred to the growth and history of the Belfast Medical School during the past twenty-five years, a vote of thanks was proposed by His Excellency the Lord Lieutenant and seconded by Sir Clifford Allbutt, K. C. B. For the next three days the sections continued their regular work. The general impression seems to be that the sectional work was excellent and extremely satisfactory, and the attendance was capital. The address on Progressive Medicine, by Dr. R. W. Philip, of Edinburgh, that in surgery, by Mr. A. E. Barker, and that in obstetrics, by Sir John Byers, were exceptionally well attended.

Among the discussions which attracted most attention were those in the Dermatology Section, by Dr. Wickham, of Paris, on The Uses of Radium in Skin Diseases, Sir Almoth Wright's address at the opening of the Hæmatology Section, and the discussion on Compulsory Notification of Phthisis in the Public Health Section. The entertainments passed off exceedingly well and seemed to be thoroughly enjoyed. The Royal Victoria, the Mater, and the Forster Green Hospitals each gave an afternoon "At Home," and all were crowded. The annual dinner was held on Wednesday evening, and about 350 members and guests attended it. Sir Peter O'Connell proposed a toast to the guests, to which Dr. Lehning, of Strassburg, and Dr. Dela-

van, of New York, replied. In connection with the meeting an exhibition of over 200 valuable and interesting medical MSS. was held in Queen's University. One section of this exhibit contained a series of books on consumption, beginning with Celsus, who recommended an open air treatment and milk diet, and ending with the Countess of Aberdeen's *Ireland's Crusade against Tuberculosis*.

The first report of the Departmental Committee which was recently appointed to inquire into the law relating to coroners and coroners' courts has just been issued. The members appointed on that committee were Sir Mackenzie Chalmers (chairman), Sir Malcolm Morris, Sir Horatio Shephard, Sir Thomas Bramsdon, M. P., and Dr. William Wilcox. Mr. James Brook-Little, author of the article on Coroners in Lord Halsbury's *Encyclopædia*, gave some very interesting evidence. Mr Brook-Little expressed the opinion that death under a surgical operation did not come within the meaning of a violent death in the words of the act. Dr. Waldo, coroner for the City of London, also gave evidence. He said that the more experience he had as a coroner the more post mortems he ordered. In the majority of cases outside hospitals he got the practitioner who had attended the deceased during life or had been called in at the time of death to make the examination, but if on the evidence put before him by his officer or in other ways he could not form a satisfactory opinion, he thought it essential to get an independent man. Then he got his own special pathologist, who did the work for the small statutory fee. He placed the greatest value on the clinical evidence of the doctor who had seen the deceased during life, but he used his own discretion. He did not think it necessary for a special pathologist to do all the post mortem examinations. He thought it should be left entirely to the discretion of the coroner.

Mr. A. J. Pepper said that, judging from a large experience, post mortem examinations were often very incompletely performed. When a post mortem examination was made by an ordinary general practitioner, there were often appearances that might lead him wrong. The point about which a mistake was most likely to be made was as to the cause of death and the mode of dying. The appearances might lead him to suspect violence when the death had in fact been natural. He suggested that the coroner should be compelled to call in an expert from a list nominated by the Home Secretary where there was any doubt as to the cause of death, and even when there was the merest suspicion or rumor of foul play. Dr. G. Bateman, deputy coroner for St. Alban's, said the coroner should always call in the medical practitioner who had attended the deceased, because the cause of death might be decided from clinical and also from pathological symptoms, and it might be necessary to combine them both in order to ascertain the true cause of death. Many other coroners gave evidence, and it was understood that a complete report would eventually be published.

Another munificent charitable gift has just been announced. Mr. Ernest Frederick Schiff has presented, through Mr. Mayo Robson, a sum of £100,000 to the managing committee of the Home of Re-

covery, of which Princess Louise is president and the Earl of Lytton chairman. Part of this money has been expended upon the purchase of a charming and suitable property within seventeen miles of London, to which the patients will be conveyed by motor ambulance straight from their beds in the hospitals. The institution will be called the Schiff Home of Recovery. Under the trust deed seven of the largest London hospitals, Charing Cross, Guy's, St. Thomas's, London, University College, Middlesex, and King's College, will be partakers of the benefits of the home, and each of them is represented on the managing committee.

The Royal College of Physicians has just announced the award of certain medals. The Baly medal, for the man of science who has most distinguished himself in physiology, goes to Dr. Emil Fischer, professor of chemistry in the University of Berlin, while the Moxon medal, for the man most distinguished by observation and research in clinical medicine, has been awarded to Sir William R. Gowers, F. R. S. The first of these distinctions is given every alternate year, and the second every third year.

Therapeutical Notes.

Diet in Gout.—Reference has been already made (*New York Medical Journal*, August 21st, page 374) to the admirable article by Sir Dyce Duckworth, respecting the dietary for goutily disposed persons, published in *The Practitioner* for July, 1909. He regards it as certain that the peccant matter of gout is produced within the body and does not enter infectively from without, as is the case in rheumatic toxæmia. No two individuals being alike in respect of their constitution or metabolic processes each patient requires special treatment. The author does not agree with those who declare in favor of special foods or against certain kinds. Notwithstanding the varied dietetic experiments conducted on certain patients the majority of sufferers still remain more or less gouty. Those who forbid red meats, salted food, sweetbreads, tea and coffee, potatoes and wine and all fermented liquors treat gout without reference to the patient. Sir Dyce Duckworth asserts with regard to animal food generally, that it is not only harmless, but beneficial to gouty persons, provided it be taken in moderation. There is no rule in regard to a preference for white meat over red meat, but liver and sweetbread are not to be recommended, and strong meat soups, hare soup and beef extracts are to be avoided. Fish, especially white and fresh, is one of the best articles for the diet of the gouty. Sir Dyce finds it hard to understand why potatoes should be forbidden, as the largest eaters of them know nothing of gout. He regards this vegetable as quite harmless if plainly cooked. In regard to the prohibition against wine, he observes that many gouty persons are the better for a little good wine taken with one meal in the day, but most varieties of malt liquor are harmful to the majority of gouty patients. It will be seen that the author is opposed to the views commonly held regarding the appropriate diet for

gouty persons. Some things to be avoided in the dietary of gouty patients, according to him, are lemon juice, vinegar and all sauces and relishes. The meals should consist of fresh food plainly cooked, as by roasting or grilling. Mustard may be freely taken. Salt should be very moderately used. A little good wine is helpful for elderly patients, but two to six ounces is sufficient, best taken with one meal only in the day. He concludes by saying that the question of appropriate diet for the gouty patient is a matter of as careful consideration as is the prescription of any particular treatment by drugs. The history of the patient should be carefully studied in laying down rules for diet. To say offhand that this or that is good or bad for gout reveals ignorance of the subject on the part of the prescriber. The keynote should be strict moderation. He quotes from Dr. Currie, of Liverpool: "Where the gout has continued long, the life is far advanced, the strength much impaired, the doctrine of abstemiousness is to be applied with very great caution; and if the frame be much emaciated it is not to be applied at all. In such circumstances a cordial regimen is the most safe, especially if it corresponds with long established habits, because it is now too late to aim at abating the violence of the disease, and the object is to keep up the strength under it. Abstemiousness might suddenly lower this, and bring on complaints for which the gout would be ill exchange."

The Treatment of Convulsions of Gastrointestinal Origin in Infants.—It is well known that convulsions in nursing children are due to gastrointestinal trouble. The first step to be taken in the treatment of these cases, according to a writer in *La Presse Médicale* for June 26, 1909, is to put the patient on a diet of pure water and keep it up for twenty-four hours, giving the water by tablespoonfuls every half hour. At the same time a purgative enema is ordered to be given night and morning, of the following composition:

- R Senna leaves, 3iiss;
Water, 5v.
M. Infuse for half an hour and filter.

Thirty minutes after the purgative enema has acted, administer a sedative enema of the following composition:

- R Potassium bromide,
Chloral hydrate, āā gr. ix;
Distilled water, 3iii.
M.

Every three hours the little patient should be given a bath of tilia flowers, heated to 86° F. and be kept immersed for twenty minutes at a time. It is also recommended to inject physiological salt solution (50 grammes) as needed during the day. On the second day when the crisis has been passed administer several spoonfuls of asses' milk, or better, put the child to the breast.

Mouth Wash for Aphtha.—The following mouth wash in the treatment of thrush is credited by *La Clinique* for July 30, 1909, to Lemoine:

- R Lime water,
Fennel water, āā 5iiss;
Syrup of anise, 5vi
M. Ft. gargarisma.

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TUBERCULOUS INFECTION CONSIDERED
AS A BACTERIÆMIA.

It will be recalled that in December of last year Dr. Randle C. Rosenberger, of Philadelphia, read before the Pathological Society of that city a communication entitled *The Presence of Tubercle Bacilli in the Circulating Blood in Tuberculosis*, which was published in the *American Journal of the Medical Sciences* for February, 1909. In that paper, of which we gave our readers the purport at the time, Dr. Rosenberger described his method of searching for the bacilli in the blood; stated that he had found them in the blood of every one of 125 tuberculous individuals which he had examined, though some of the persons were only in the incipient stage of tuberculous disease; and drew the inference that the disease in all its forms was a bacteriæmia.

Naturally, Dr. Rosenberger's communication excited great interest, and a number of investigators repeated his experiments. Some of these observers seemed inclined to agree with Dr. Rosenberger, but certain others stated that they had been unable to confirm his observations. It was widely realized that their confirmation would materially modify current views on some important points connected with tuberculous infection; but the prevailing attitude, as it appeared to us, was that of skepticism. That feel-

ing, as it seems now, was held by Dr. E. C. Schroeder and Mr. W. E. Cotton, of the Bureau of Animal Industry. Those gentlemen at once entered upon an experimental inquiry into the matter, and their observations and conclusions have lately been published in the form of the bureau's *Bulletin 116*.

Schroeder and Cotton state that they have failed utterly to find tubercle bacilli in the blood of tuberculous cattle examined microscopically by them in accordance with the method described and employed by Dr. Rosenberger. They say, further, that the negative results of their microscopical examinations were confirmed by their failure to convey tuberculous disease to any one of ninety-five guinea pigs by the intraabdominal injection of blood from tuberculous cattle. They add that the blood thus employed came from forty-two cattle suffering with various stages of the disease and in different degrees of severity. "We feel," they say in conclusion, "that our work shows beyond the remotest doubt that tuberculosis is not to be classified, in any sense of the word, as a bacteriæmia."

There is the possibility, they admit, that tubercle bacilli introduced into the alimentary canal of cattle by being swallowed may be taken up by the lymph radicles, passed along the lymph channels, and emptied through the great lymph ducts into the venous circulation; but such tubercle bacilli, they contend, will not be very numerous, and will no doubt be filtered out of the blood as soon as it reaches the lungs through the heart and the pulmonary arteries. The authors remark upon Dr. Rosenberger's omission to confirm adequately by animal experiments his "surprising" microscopical observations, "which," they add, "if correct, would have been of the greatest value alone for the early and certain diagnosis of tuberculosis." They regard his reported tuberculation of two guinea pigs with blood from tuberculous subjects as unconvincing. Of course, Schroeder and Cotton have not definitively demolished Rosenberger's contention, for the questions involved are not easily to be settled once for all; and we must always bear in mind the axiomatic proposition that negative substances must be vast in number before they can be held to outweigh even a few positive results.

GONORRHEAL PHLEBITIS.

In the July number of the *Archives générales de chirurgie* Dr. Denis G. Zesas records a case of phlebitis due to the gonococcus and remarks upon the paucity of similar accounts. We do not yet know, he says, whether the gonococcus is carried from the veins of the penis or the vagina to the hypogastric, external iliac, femoral, and external

saphenous veins, or whether it gains entrance into the general circulation and is arrested in the vasa vasorum at some favorable point, there to exert a pathogenic action. The phlebitis has never been observed to become suppurative, and the cases usually end in recovery, but such complications as epididymitis and still more frequently arthropathies, especially of the knee, have been observed. The phlebitis oftener arises during the acute than during the chronic stage of the urethral affection, though in the case reported by the author the gonorrhœa had persisted for more than a year. The local manifestations are apt to predominate over the general symptoms, but sometimes there is an initial chill followed by a considerable elevation of temperature. The average duration of the phlebitis is from four to six weeks, but it may be more than four months. It is most apt to attack persons who are engaged in laborious occupations. It is not unusual for the urethral affection to subside when phlebitis appears, and not to return on the subsidence of the venous inflammation. Gonorrhœal phlebitis does not call for treatment in any wise different from that of the commoner forms of inflammation of a vein.

CHOREA AND PREGNANCY.

In *La Clinique* for July 16th Dr. P. Rudaux, a hospital obstetrician, reviews the relationship of chorea to the gravid condition. Differing with certain neurologists, such as Gilles de la Tourette, M. Rudaux thinks it cannot be denied that there is a relation of cause and effect between pregnancy and chorea, for the nervous affection is observed to appear in the course of several successive pregnancies and to cease with parturition. Of course, he remarks, gestation is not the sole element in the etiology of such attacks; there must be a suitable soil, that is to say, a neuropathic and often an hysterical taint. Proof of this is seen in the fact that very frequently—twelve times out of fifteen, according to Gentin—chorea gravidarum is found to have been preceded by a like affection occurring at the time of the establishment of the menstrual function. But pregnancy, even in a woman predisposed to nervous attacks, is not of itself sufficient to bring on the outbreak; there must be in addition some insufficiency of the "organs of defense," the liver, the kidneys, the thyroid body, and perhaps also the suprarenal glands. Then there appear manifestations of the self intoxication of pregnancy, of which chorea is only one; it is rarely met with alone, but is generally accompanied by albuminuria, deficient urinary excretion, neuralgia, etc.

Chorea is most commonly observed in primiparæ. It makes its appearance generally toward the third

month of gestation, and rarely occurs after the sixth. Sometimes it is but slightly pronounced, being manifested only by a few choreiform movements; in other instances it is so severe that the patient has to remain in bed, and it may be accompanied by grave and even fatal manifestations, among them a cachexia due to lack of rest. However, since we have known how to treat the condition such complications have become exceptional; usually the symptoms disappear or abate in the course of three or four months, but they may come on again at the time of labor or during lactation. The prognosis as regards the mother is less grave than the majority of authors state; as concerns the child, we must be more reserved, for the continuance of the pregnancy is threatened, abortion and premature labor being not uncommon, though of this the chorea is not the sole cause or the true one, but rather in almost all instances some other manifestation of the toxic condition, especially the albuminuria.

These data have to be taken into account in the treatment, which must be both prophylactic and symptomatic, combating at once the intoxication and the nervous derangement. The diet should be rigid, all articles of food capable of yielding toxins being excluded. The bowels must be freely opened and kept free, an initial purgative being administered, followed by calomel in fractional doses and the use of copious enemata. As regards calmatives, potassium bromide and chloral are chiefly of service. Prolonged warm baths, warm douches, and friction of the surface are valuable. Abortion or premature labor should never be induced unless the woman's life is manifestly in danger.

POST PARTUM HÆMATOMETRA.

Hæmatometra may be divided into two groups, namely, the congenital, which includes the large majority of cases, and the acquired form. The latter follows either the cicatrization of a syphilitic lesion, cauterization of the cervical canal, or a badly performed amputation of the cervix. It may also arise after a difficult labor followed by severe lesions of the cervix or vagina which result in atresia. It is to this post partum hæmatometra that Vaissier has devoted the subject of his thesis, recently published. Post partum hæmatometra is the result of atresia, whether it is limited to a certain part or exists throughout a considerable extent of the genital organs. If the atresia is seated in the cervix, the hæmatometra is primary; if the atresia involves the vagina, it will be secondary to a hæmatocolpos. Usually there has been an instrumental delivery or an abortion followed by infection which has produced the atresia by cicatrization of the cervical or

vaginal lesions, because this cicatrization produces a retraction of the surrounding structures.

The appearance of the first subjective symptoms of hæmatometra varies greatly. Pain will be complained of from six weeks to a year after the labor, and will occur all the earlier and be more intense the greater the amount of the menstrual flux and when the seat of the obstruction is near the uterine cavity. The painful phenomena coincide with the menses and consist of pain in the renal region, radiating toward the uterus. Generally the pain is preceded by a period of amenorrhœa, but the menstrual period, besides absence of the flow of blood, gives rise to all the symptoms which ordinarily accompany it, such as headache, hypogastric weight, etc. To these phenomena, which become more and more accentuated as the menstrual periods recur, other symptoms are added which make evident the increasing development of the uterus, the principal ones being those due to pressure on the rectum, bladder, iliac vessels, and sacrolumbar nerves. Reflex phenomena may also be encountered, such as fulness of the breasts, nausea, anorexia, and changes in the patient's character, all of which may be mistaken as indicating pregnancy.

Physical examination reveals a fluctuating abdominal tumor and obliteration of the vagina or cervix. Occasionally the presence of a hæmatosalpinx may be discovered at the side of the uterus. If the examination is carried out during the attacks of pain, intermittent uterine contractions may be felt, and when these are detected the diagnosis is easy, because early pregnancy may be eliminated. Post partum hæmatometra is rarely recovered from, but if the patient is near the menopause the symptoms may slowly improve, and the liquid contents of the uterine cavity may after a while become absorbed. If the woman is young, complications may arise which expose her to great danger, such as rupture of the uterus, resulting in a retrouterine hæmatocoele, more or less extensive peritoneal lesions or a hæmatoma of the labium majus. Most important of all is infection of the blood clot, which results in pyometra. Under these circumstances the blood may enter the tubes, resulting in a single or double hæmatosalpinx, and the patient may die from cachexia. The atresia rarely ruptures and gives exit to the uterine contents. The treatment should give exit by the vagina to the uterine contents, completely emptying the organ, followed by careful drainage. Abdominal hysterectomy is indicated if a vaginal operation is prevented on account of an excessive development of cicatricial tissue. The ultimate results are excellent, and if the atresia can be dealt with per vaginam the probability of pregnancy followed by a normal labor is good.

THE PSYCHOLOGY OF ILLUSION.

It is characteristic of the thoroughness of the French methods of education that more than one essay has been written in that language for purposes of popular instruction in the art of the prestidigitator—an art that an American pedagogue would probably consider beneath his notice. When we reflect, however, that religions have been founded on the apparent miracles of sleight of hand and the judicious management of illusory processes, the importance of the subject becomes manifest. We have read with interest a small volume on this subject recently issued in France.¹

It is not a manual for instruction in conjuring, but an analysis of the methods used by modern stage illusionists to amuse an audience by baffling and confusing it. These methods are substantially the same as those of the Egyptian magicians, as recorded in the Bible and elsewhere, and it is curious to learn that the same methods are used all over the world, and have been known to the magician caste everywhere from before the dawn of history. They are as much a part of human psychology and have played as important part in history as any other human characteristic.

There is nothing in the little work that is not already known to every amateur conjurer, but what he has learned in detail is here generalized in scientific fashion. The fallacy that "the quickness of the hand deceives the eye," which has satisfied so many spectators, is exposed and the real secret is explained—suggestion or misdirection at the proper moment. The skeleton of a given trick, the apparatus used, is least important; what tells is the performer's manner, his personality, his handling of the *mise en scène*. A trick that in the hands of a schoolboy would merely excite the derision of his companions becomes in the hands of a Robert Houdin a thing to stupefy a king, his court, judges, and princes of the Church. These last, by the way, along with women, are the most easily taken in; while, curiously enough, children are the hardest to deceive. The more highly intelligent and educated—as the word is generally understood, i. e., well read—an audience is, the more thoroughly is it taken in; this accounts for the imposing names cited in support of the genuineness of the silly tricks of spiritualistic "mediums."

For reasons into which we have not space to enter, physicians have always furnished a large proportion of the students of magic; physician and magician were once the same individual. We recommend the perusal of *L'Illusion*, not only to our colleagues, but to all who are interested in hu-

¹*L'Illusion, ou le secret psychologique. Par le prestigien ALBERT AUBRY, avec une préface de RAYMOND MESTER. Paris: Bloud & Co., 1909.*

man nature and the history of its development. History written by a modern magician would shed new lights, particularly the history of medicine. Suggestion appears every decade or so, is regularly rejected by the profession, and passes over to some new set of quacks.

News Items.

The Library of the College of Physicians of Philadelphia receives the medical library of the late Dr. Joseph Alison Scott, of Philadelphia.

The Minnesota Association for the Prevention and Relief of Tuberculosis has established permanent headquarters in the old Capitol building, in St. Paul. From this office the work of the association will be directed.

Additions to the Methodist Episcopal Hospital, Brooklyn.—Two new buildings have been added to this hospital, and the older pavilion is being remodelled. When the work is completed the hospital will have accommodations for 225 patients and 70 nurses.

Epidemic Diseases.—Several cases of typhoid fever have been reported from Millville, N. J. A small local epidemic of typhoid fever is reported from Upper Merion township, Montgomery County, Pa. Four cases of the disease have been reported from one farm.

Society Meetings for the Coming Week:

WEDNESDAY, September 1st.—Elmira, N. Y., Academy of Medicine.

THURSDAY, September 2d.—Dansville, N. Y., Medical Association.

FRIDAY, September 3d.—New York Microscopical Society.

Contract Practice.—The Dauphin County, Pa., Medical Society voted, on August 17th, to expel all members who act as physicians to fraternal or beneficial orders under contract to treat members of such orders and their families at a fixed yearly rate, and physicians who consult with physicians engaged in such practice.

The New Medical Practice Law of Arkansas.—The new law regulating the practice of medicine in the State of Arkansas went into effect on August 6th. It cuts down the number of meetings of the State Medical Board to two meetings a year, and includes regulations which it is expected will reduce the number of irresponsible doctors in the State.

Scientific Society Meetings in Philadelphia for the Week Ending September 4, 1909:

THURSDAY, September 2d.—Germantown Branch, Philadelphia County Medical Society; Southwark Medical Society.

FRIDAY, September 3d.—Kensington Branch, Philadelphia County Medical Society.

The Gloucester County, N. J., Medical Society will hold its annual social session at the Hotel Pitman, Woodbury, on Thursday, September 16th, at 7:00 p. m. The evening will be devoted exclusively to social intercourse, no business of any kind being considered. The wives and daughters of members and guests are included in the invitations, and a good time is expected.

The Iowa State Board of Medical Examiners announces that out of ninety-nine physicians and eighteen osteopaths who took the examinations in June, ninety-two physicians and nine osteopaths were awarded certificates authorizing them to practise in the State. The next examination will be held in the office of the secretary, Capital Building, Des Moines, Iowa, on September 21st, 22d, and 23d.

To Enlarge the Boston Insane Hospital.—Under the authority conferred at the last session of the Massachusetts Legislature, all the lands adjoining the present hospital grounds lying within the boundaries of Morton, Canterbury, Walkhill and Harvard Streets, in Dorchester, will be taken for the purposes of the Boston Insane Hospital. The taking of the land will allow the State to at once enter upon its plan of enlarging the Boston institution to care for a much greater number of insane, and the State Board of Insanity has taken the initial steps toward the making of a great metropolitan district institution for the insane. The assessed value of the property is about \$131,000.

The Summer Schools of Instruction for the Medical Officers of the National Guard, which were held at Annetiam, Md., Sparta, Wis., and San Francisco, were closed on August 11th, as many of the medical officers in attendance were needed in the war manoeuvres in Massachusetts. Those who attended the schools were enthusiastic over the work accomplished, and expressed a hope that the schools would be continued in future years.

Medical Inspectors Dropped.—Thirty-three medical inspectors in New York have received notice that their services would be dispensed with after August 25th. In January of this year the Commissioner of Health dismissed 105 inspectors, but an extra appropriation was made for the reappointment of thirty-three of them to look after cases of measles in Brooklyn, and on May 25th application was made for a further appropriation to cover another three months. That period has now expired and the inspectors have been dropped.

Hospital Benefits.—Tag day in aid of Greenport Hospital was held in Riverhead, Long Island, on Saturday, August 14th. About \$2,000 was realized.

A large sum for the Rockaway Beach Hospital and Dispensary was the result of a tag day held at the beach on Tuesday, August 17th.

A bridge tournament was held at the Hotel Scarboro, Long Branch, N. J., on Wednesday, August 11th, in aid of the Philanthropin Hospital, New York. The proceeds amounted to about \$300.

The Health of Pittsburgh.—During the week ending August 14, 1909, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 2 cases, 0 deaths; typhoid fever, 16 cases, 3 deaths; scarlet fever, 7 cases, 0 deaths; diphtheria, 2 cases, 1 death; measles, 2 cases, 0 deaths; whooping cough, 12 cases, 3 deaths; pulmonary tuberculosis, 46 cases, 9 deaths. The total deaths for the week numbered 147, in an estimated population of 572,000, corresponding to an annual rate of 13.36 in a thousand population.

Medical Department of the University of Pittsburgh to be Reorganized.—Although the new building for the medical department, which is in course of construction, will not be ready for occupancy until next spring, the department is preparing to enlarge the scope of its work with the beginning of the college year on October 3d. The laboratories are being reorganized, and greater facilities for clinical work will be provided. The faculty is to be increased, and the course of study made more comprehensive. Dr. Thomas Shaw Arbuthnot will continue as dean of the faculty, and will occupy the chair of medicine.

Gifts and Bequests to Charity.—The Woburn, Mass., Hospital will receive \$1,000 by the will of Byron Harmon, who died recently in East Cambridge, and the Woburn Old Ladies' Home will also receive \$1,000.

By the will of Mr. Thomas W. Sykes, the Rockville Mass., City Hospital and the North Adams, Mass., Hospital will each receive \$1,000.

By the will of Susanna Yarnall, of Willistown, Pa., the Friends' Home for Children, the Home for Incurables, the Children's Country Week Association, the Society to Protect Children from Cruelty, all of Philadelphia, receive \$500 each.

The Babies' Hospital to be Enlarged.—Plans have been filed for a nine story building to be erected at 661 Lexington Avenue as an annex to the Babies' Hospital, at Fifty-fifth Street and Lexington Avenue, New York. It will be in the Renaissance style of architecture, with a frontage of twenty feet and a depth of forty-eight feet. The first floor will be fitted up as a dispensary, with laboratories. Apartments for doctors, nurses and private patients will occupy the third floor, and the seventh floor will contain a solarium and additional laboratories. The rest of the building will be finished as dormitories. The estimated cost of the building is \$50,000.

Appointments at the Ohio-Miami Medical College.—Dr. Paul G. Woolley, professor of pathology in the University of Nebraska, has accepted the position of professor of pathology and dean of the faculty at the Ohio-Miami Medical College, Cincinnati, and Dr. William B. Wherry, bacteriologist in the United States Public Health and Marine Hospital Service, and a member of the faculty of the Oakland, Cal., Medical College, has been appointed assistant professor of bacteriology. Dr. Woolley was at one time chief of the Siamese Government Serum Laboratory at Phrapatoom, Siam, and also spent more than three years in Manila in the study of tropical diseases.

The Union Medical Association of the Sixth Council District of Ohio held its fourteenth annual meeting in Canton on August 10th. Physicians were present from Ashland, Holmes, Mahoning, Portage, Richland, Stark, Summit, and Wayne counties. The programme, which was exceptionally good, included papers by Dr. Charles D. Hauser, of Youngstown; Dr. W. B. Smith, of Ravenna; Dr. C. A. Hamann, of Cleveland; Dr. Judson A. Hulse, of Akron; Dr. J. L. Stevens, of Mansfield; and Dr. Frank J. Kapfer, of Canton.

The New York State Civil Service Commission will hold examinations on September 18th for a number of positions in the State and county service, among which are the following: Assistant sanitary chemist, State Department of Health, salary \$1,200 to \$1,500; physicians, homeopathic and regular, salaries, \$900 to \$1,200; superintendent or assistant superintendent of the State Hospital Training School, \$900 to \$1,200, with maintenance. The last day for filing applications for these positions is September 11th, at noon. For further information and application forms address the State Civil Service Commission, Albany, N. Y.

The New Hospital at Bayside, L. I.—Ground was broken on August 20th for the new hospital to be built by the Bayside Infirmary. The new building will consist of three stories and basement, and the exterior will be of stucco. It will be complete in every detail and thoroughly equipped with all modern appliances. There will be no resident staff at the institution, but the work will be under the direction of Dr. A. H. Houghton, of Bayside, president of the board of directors; Dr. William M. Stone, of Flushing, and Dr. Charles L. Neisley, of Manhasset. While the institution is not established for charity patients, emergency cases will be taken care of until other arrangements can be made for them.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 21, 1909:

	—August 14—		—August 21—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	431	158	505	137
Diphtheria	173	20	141	10
Measles	216	16	140	12
Scarlet fever	87	6	68	4
Smallpox .....	..	..	..	..
Varicella	16	..	6	..
Typhoid fever	71	9	74	15
Whooping cough	44	13	25	8
Cerebrospinal meningitis	4	5	8	11
Total	1,042	227	1,036	197

The National Volunteer Emergency Service is making extensive preparations for the establishment of a number of field hospitals and first aid stations on the Hudson River front, extending from the Battery to Spuyten Duyvil, and along the line of march during the Hudson-Fulton Celebration, which will take place from September 25th to October 9th. The work is under the direction of Major General James Evelyn Pilcher, M. D., Brigadier General F. Elbert Davis, M. D., Brigadier General George Morgan Muren, M. D., Commander John C. Mac Evitt, M. D., U. S. N., and Captain D. R. Lucas, M. D. Physicians, pharmacists, nurses (male and female), and former hospital stewards, wishing to volunteer their services for assignment may address The Adjutant General, National Volunteer Emergency Service, 130 West Fifty-sixth Street, New York.

The Sixteenth International Medical Congress, which will open in Budapest on August 20th, will be essentially international in character. According to a statement issued by the secretary general of the congress, on August 11th the members of the congress numbered over three thousand, and it was expected that by the time the congress opened the number would exceed four thousand. The members of the congress already registered are distributed as follows: Germany, 218; United States, 164; Argentine Republic, 35; Austria, 188; Belgium, 47; Bosnia-Herzegovina, 7; Brazil, 22; Bulgaria, 17; Chili, 4; Cuba, 6; Denmark, 8; Egypt, 21; Spain, 64; France, 257; Great Britain and the Colonies, 92; Greece, 16; Italy, 145; Japan, 21; Mexico, 1; Monaco, 1; Norway, 2; Holland, 13; Portugal, 28; Roumania, 10; Russia, 172; Serbia, 4; Sweden, 4; Switzerland, 23; Turkey, 17; Uruguay, 2; and Hungary, 35. An elaborate programme of entertainments has been provided for the visitors.

The Fifth Censorial District of the Pennsylvania State Medical Association held its fourth annual meeting at Gettysburg on August 10th. About forty physicians were present from the counties of Adams, York, Cumberland, Franklin, and Fulton, which compose this district. The programme included the following addresses: Professional Fellowship, by Dr. J. J. Coffman; Methods of Examination in the Most Common Rectal Diseases, by Dr. J. G. Coles Brick; The Importance of Organization of the Medical Profession and the Value of the County Medical Society to the Doctor, by Dr. John B. Roberts; To Be or not to Be, by Dr. J. Burns Amberson. The following officers were elected to serve for the ensuing year: President, Dr. Walter H. O'Neal, of Gettysburg; vice-president, Dr. William E. Wolff, of Arendtsville; secretary and treasurer, Dr. George E. Holtzapfel, of York.

Pellagra.—A movement has been started by the physicians of Meridian, Miss., to bring before the medical profession of the State the fact that pellagra prevails in Mississippi and seems to be increasing. They believe that many cases of the disease are being treated as eczema or other skin diseases, and it is their purpose to discover all such cases and collect as many facts relating to the disease as possible. If investigation proves the correctness of the theory that pellagra is due to eating mouldy or musty corn, an effort will be made to get the State Legislature to pass a law requiring the inspection of all grain brought into the State. The United States Marine Hospital Service has already taken up the matter and has sent out a good deal of information about pellagra. There has also been an outbreak of the disease in the State Insane Asylum of Illinois, at Peoria, and, on the request of the health authorities of the State of Illinois, Captain Joseph H. Siler, of the Medical Corps of the U. S. Army, has been ordered to visit the asylum for purposes of consultation and observation.

To Establish an American Association of Clinical Research.—Under date of August 18, 1909, Dr. James Krauss, chairman of the Committee of the American Association of Clinical Research, has issued an open letter to the medical profession, announcing that a meeting of physicians and surgeons who are interested in scientific clinical research will be held on Wednesday, October 27, 1909, at John Ware Hall, Boston Medical Library, No. 8 Fenway, Boston, Mass. The object of the meeting is: First, to establish an American Association of Clinical Research; secondly, to establish clinical research on an incontrovertible scientific basis in hospitals; and thirdly, to institute an American Journal of Clinical Research, in which the work of the members of the association and of others doing clinical research work in a scientific manner shall be published. An invitation to attend this meeting is extended to all physicians and surgeons whose interest goes beyond the immediate case of ordinary clinical societies, and it is hoped that the invitation will be accepted by all medical practitioners, irrespective of their present medical affiliations. Those who are interested in the matter and expect to be present at the meeting should communicate at once with Dr. James Krauss, 419 Boylston Street, Boston, who will furnish further particulars.

The Red Cross Christmas Stamps.—Plans have been completed by the American Red Cross Society for placing on the market the Red Cross stamps which were so popular last year during the Christmas season. Fifty million stamps will be printed, and the Red Cross Society hopes that this amount will prove insufficient to meet the demand. An order for twenty millions has already been placed, and these will be ready for distribution on November 1st. An entirely new design has been used for the stamps this year. In a competition in which twelve hundred designs were submitted, Mr. Carl Wingate, of New York, was awarded the first prize. Mr. Wingate's design shows a large red cross in the centre; above it the legend, "American Red Cross, 1909," with a decoration of holly leaves and berries, and below the cross some scroll work containing the words "Merry Christmas" and "Happy New Year." The lettering will all be white. The cross in the centre, the little crosses in the border, and the holly berries will be red, and the other prominent features of the design will be green. The proceeds from the sale of the Christmas stamps last year amounted to \$138,244.51. Two thirds of this amount was used in the campaign against tuberculosis all over the country, the remaining third being turned over to the Red Cross Society to pay for making and distributing the stamps.

The Health of Chicago.—During the week ending August 14, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 48 cases, 4 deaths; scarlet fever, 43 cases, 4 deaths; measles, 42 cases, 3 deaths; whooping cough, 78 cases, 6 deaths; tuberculosis, 89 cases, 71 deaths; pneumonia, 15 cases, 37 deaths; typhoid fever, 25 cases, 4 deaths; chickenpox, 9 cases, 0 deaths; mumps, 4 cases, 0 deaths; erysipelas, 1 case, 0 deaths. The deaths from other important causes were: Cancer, 24 deaths; nervous diseases, 16 deaths; heart diseases, 43 deaths; apoplexy, 8 deaths; Bright's disease, 36 deaths; diarrheal diseases, under two years of age, 167 deaths; diarrheal diseases over two years of age, 18 deaths. There was one death from sunstroke, 13 suicides, and 30 deaths due to accidents. The total number of deaths during the week was 595, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.95 in a thousand of population. The total infant mortality was 255; 194 under one year of age, and 61 between one and five years of age.

The Health of Philadelphia.—During the week ending August 14, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 79 cases, 7 deaths; scarlet fever, 24 cases, 0 deaths; chickenpox, 2 cases, 0 deaths; diphtheria, 54 cases, 1 death; measles, 16 cases, 2 deaths; whooping cough, 20 cases, 3 deaths; tuberculosis of the lungs, 137 cases, 42 deaths; pneumonia, 22 cases, 11 deaths; erysipelas, 4 cases, 0 deaths; tetanus, 1 case, 1 death; mumps, 2 cases, 0 deaths; malaria, 1 case, 0 deaths; puerperal fever, 1 case, 1 death; septicæmia, 5 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 9 deaths; diarrhœa and enteritis, under two years of age, 71 deaths; dysentery, 2 deaths; cholera morbus, 1 death. The total deaths numbered 413, in an estimated population of 1,565,599, corresponding to an annual death rate of 13.71 in a thousand population. The total infant mortality was 117; 100 under one year of age, and 17 between one and two years of age. There were 33 stillbirths; 18 males and 15 females. The total precipitation was .02 inch. There were 2 deaths from heat and sunstroke.

Army Medical Corps Examinations.—The Surgeon General of the Army announces that the War Department has appointed a permanent board to meet at Washington, D. C., for the preliminary examination of applicants for appointment in the Medical Corps of the Army, in addition to the usual preliminary examination boards that are assembled at various Army posts throughout the United States from time to time. The board at Washington will probably hold its first session about September 7, 1909, and on such other dates thereafter as may be designated by the Surgeon General. This should be welcome news to a number of young physicians who are desirous of entering the Medical Corps and who do not wish to wait until the usual examinations are authorized; also to those who are near the maximum limit of age. Physicians who are successful in the examinations by the Washington board will be given employment at Army posts, as their services are needed, as first lieutenants in the Medical Reserve Corps, with a salary of \$2,000 per annum, until the next session of the Army Medical School, when they will be ordered to attend the school as student candidates. Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The medical service of the Army permits of a great variety of general medical and surgical practice, besides affording opportunities for those specially qualified to engage in special work, such as sanitation, chemistry, pathology, microscopy, and bacteriology. Applications for permission to take the examination may be filed with the War Department at any time. Unless the statement is made that the candidate desires to appear before the Washington board at or about a certain time, arrangements will be made to have him examined before the next board assembled in his vicinity.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 12, 1909.

1. The Problem of Cancer Considered from the Standpoint of Immunity, By FREDERICK T. GAY.
2. The Importance of Active Muscular Exercise in the Restoration of Function, By C. HERMAN BUCHOLZ.
3. Acute Postoperative Dilatation of the Stomach, By JAMES R. TORBERT.
4. Congenital Imperforation of the (Esophagus with Tracheoesophageal Fistula, By A. ROCHE ROBERTSON.

2. **The Importance of Active Muscular Exercise in the Restoration of Function.**—Bucholz speaks of mechano therapy in muscles, nervous system, joint and bones, and the circulatory system. It is an experience of daily life, he says, that muscles become bigger, firmer, and stronger by training. The enlargement of the muscle is due to an increase in number and size of the fibres, although we cannot always distinguish microscopically between fibres taken from a strong or a weak muscle. Prescribing proper exercises may require a thorough understanding of the pathological conditions and mechanical factors. This is particularly true in the so called corrective exercises, as we use them in the treatment of lateral curvature, flat foot, and other orthopedic deformities. The indication is to restore the normal balance of the antagonistic muscles by strengthening certain groups. In the complicated mechanism of the spine, careless exercise may do a harm which is greater in degree than any improvement which may be gained by correct exercise. This is perhaps the reason why the functional treatment of lateral curvature is not so generally adopted as it should be. As to the nerves, he gives the following most useful methods: 1. Associated movements; we use them in hemiplegia, where we instruct the patient to make the same motion at the same time with the healthy and affected limb. 2. The imitation method; the operator demonstrates a certain motion; then, by the aid of passive motion, he makes the patient repeat, until the patient is able to do it himself. 3. Another method is to make use of the galvanic current. The electrode is placed on the paralyzed muscle and the patient asked to contract the muscle coincidentally with the make and break of the current. At first the current must be strong enough to cause a real contraction of the muscle, and later it can be diminished as the muscle begins to take up work for itself. 4. The kinethoerapeutic method, which consists in active and active passive exercise while the patient is lying in the water. The lessened weight of the limbs will allow motion to be made more easily and more correctly in the water than outside. Of the joint and bones, he states that active movements are valuable in restoring the function by preventing much of the loss of function which results from long use of fixation methods. For the circulatory system he points out some theoretical principles considered in the application of active gymnastics. The dilatation of the bloodvessels over a large area should cause theoretically a lowering of the general blood pressure. But our observations on man and dog show that in strenuous work the pressure is lowered only for a few minutes and

afterward is raised to often a remarkably high degree. This compensation is explained: 1. By reactive contraction of the vessels in other parts, especially of the intestinal arteries and veins. 2. By the increased respiration produced by the necessity for more oxygen. The forced expiration directly aids in the emptying of the ventricles. 3. The circulating chemical products of muscle work stimulate respiration and also the heart directly.

3. Acute Postoperative Dilatation of the Stomach.—Torbert states that acute postoperative dilatation of the stomach is not so rare as the literature would lead one to believe. The diagnosis can usually be made by having the subject in mind, especially where we have the presence of distention, vomiting of large amounts of brownish green fluid, no necessary rise in temperature, rapid pulse, and a rapidly increasing collapse. The passage of the stomach tube will usually establish the diagnosis. According to reported cases, the condition is very fatal, Laffer stating that 63.5 per cent. of the patients die. Recognized early, however, most of the patients respond well to treatment, the high mortality figures being probably due either to a late diagnosis or to a complete failure in recognizing the condition. The importance of the stomach tube as a part of an operation outfit is emphasized by the existence of this comparatively recently recognized condition.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

August 21, 1909.

1. The Part Sanitation is Playing in the Construction of the Panama Canal. By WILLIAM C. GORGAS.
2. The Treatment of Infantile Diarrhœas Due to Intestinal Fermentation with Lactic Acid Bacilli. By CHARLES HUNTER DUNN.
3. Adenoid Hypertrophy during the First Year of Life and Its Treatment. By ROWLAND GODFREY FREEMAN.
4. Suppurative Conditions in the Joint Regions in Infants and Young Children. By L. E. LA FETRA.
5. Primary Hæmorrhage Glaucoma, with Probable Sympathetic Inflammation. A Clinical and Microscopic Study of a Case. By MORTIMER FRANK.
6. Hair Ball or Hair Cast of the Stomach and Its Occurrence in Children. Report of Two Instances, with Bibliography and Synopsis of Cases Reported to Date. By W. W. BUTTERWORTH.
7. Emulsion of Radium Abdominal and Retained by Cocoonut Charcoal: An Advance in Radium Therapy. By JOHN D. SHOBER.

1. The Part Sanitation is Playing in the Construction of the Panama Canal.—Gorgas, in speaking of yellow fever, states that for the most favorable development of yellow fever three things are essential: 1, A hot climate all the year round; 2, an abundant supply of fresh water stored near human habitations; and 3, a steady influx of foreigners who have not had the disease. All three things are found in Panama. About 1849, and for many years after, the rush of gold seekers to California took place. These suffered severely, and still further added to the unfortunate reputation of the Isthmus among English speaking nations. From 1850 to 1855 the Panama Railroad was under construction. The considerable force engaged in this work suffered so severely from the disease that work had to be stopped several times. By the authorities, the unfavorable health conditions were looked on as the principal obstacle to be overcome. From 1855 to 1880 the French had a large working force working on the canal. These also suffered very

severely from disease, and this was considered one of the chief elements in their failure. The French experience on the Isthmus settled the reputation of Panama as to health conditions. When the United States took possession in 1904 the Isthmus was generally looked on as probably the most unhealthy locality known. This was due, not so much to local conditions, as to the fact that no other tropical city has had for the same length of time such a steady supply of nonimmunes. Many other tropical cities are just as well adapted to the development of yellow fever as is Panama, as far as the first and second conditions (temperature and water supply) are concerned, but none have had for anything like so long a time the third condition, namely, a steady inflow of foreigners. The author compares the death roll from yellow fever at Panama under French contractors and under American rule. He estimates that the French lost eleven sixteenths of their white force in five years, or 2,082 deaths, while the Americans lost only nineteen white Americans. A great testimony to the sanitary work done at the Isthmus.

2. The Treatment of Infant Diarrhœas with Lactic Acid Bacilli.—Dunn concludes from his investigation on the action of living lactic acid bacilli that it is of great value in the class of infantile diarrhœas designated as fermental. The numerous variations in the series show that it is not absolutely a specific treatment. It is possible that these failures may be attributed to the fact that the particular strain of lactic acid bacillus used is not effective against the particular strain of fermenting organisms concerned. It is probable that there are also many other elements tending toward failure of which we know nothing. He believes, however, that this treatment is an extremely valuable resource, and one which is applicable to a very difficult class of cases, and that it should be tried in every case of infantile diarrhœa characterized by saprophytic fermentation, and in every case of chronic intestinal indigestion and atrophy in which the movements are characterized by evidences of fermentation. He thinks that a ripened milk containing living bacilli to be the best food with which to begin feeding in cases of fermental diarrhœa after the initial period of starvation.

3. Operations for Adenoid Hypertrophy during the First Year of Life.—Freeman states that adenoids, if they are to be removed at all, should be removed as soon as they produce symptoms, and especially during the first year of life, for it must be remembered that children with lymphatic hyperplasia have one of the indications of lymphatic constitution and may not be good subjects for anesthesia, while adenoids may be removed during the first year without anesthesia. Attention should be directed to this abnormality of early infancy, as the persistence of this trouble interferes with the proper development of the child, by reflex action, by the irritation produced by its presence, and by the obstruction it causes.

4. Joint Suppuration.—La Fetra remarks that cases of arthritis and of what might be called "near arthritis" are quite common in infants and young children. In all cases a careful history of the infant from birth should be obtained. The inquiry should be directed particularly toward obtaining a

history of umbilical infection, of early ophthalmia, of vaginitis, of pneumonia, typhoid, and influenza. The feeding history, especially the use of sterilized, carbohydrate, or proprietary foods, should be carefully scrutinized. An inspection of the gums may save an incision into the thigh. It goes without saying that the patient should be undressed entirely for examination. Men frequently fail in diagnosis, not because they do not know, but because they do not see the patient and do not make use of what they know. The diagnosis of tuberculosis and rheumatism should be made by exclusion. The earlier proper treatment is instituted the fewer the number of joints involved and the greater the chance of complete recovery of function.

6. **Hair Ball of Stomach.**—Butterworth reports a case in his own practice of hair ball of the stomach in a child, eight years of age, and adds forty-one more cases, which he has found in the literature after a thorough search; thirty-nine of all the patients were females, the youngest was his own case, eight years, while the oldest person was an insane man, aged forty-three. It is remarkable how little the general health suffers, considering the duration of the habit; eventually the limit of toleration is reached, and Nature protests. Pain is a fairly constant symptom; vomiting at some time or other is usual, and yet, considering the spongelike and absorbent character of the hair cast, it need occasion no wonder if vomiting should not occur. This happened in his case, and, after seeing the character of the foreign body, he could readily understand that she could not have vomited even had she wished to. *Hæmatemesis* is comparatively rare, while *dyspepsia* and an abdominal tumor are usually the earliest and most constant of symptoms. Alternating attacks of constipation and diarrhea are the usual rule; eventually the breath becomes exceedingly offensive and malodorous; anæmia grows more pronounced, ingestion of food more difficult, emaciation and weakness more noticeable, and, unless surgical measures are instituted, with rare exceptions death occurs from inanition or perforation. Cancer of the stomach was the most frequent diagnosis; then followed a displaced spleen, floating kidney, fecal impaction in transverse colon, and omental tumors.

7. **Radioactive Charcoal.**—Shober finds that cocoanut charcoal is an inert substance and can be administered freely internally. It will absorb and retain the emanation of radium and, when treated by his method, can be raised to a very high degree of radioactivity compared to water—namely, from 200 to 300 times the radioactivity of the most radioactive water. It can be prepared with but small expense. The same radium can be used over and over again indefinitely; none of the radium need be lost. The charcoal will retain its radioactivity for at least two weeks, and the method of administration is simple. The beneficial effects of radioactive spring waters in many diseases and the results obtained abroad by the administration of weak emanation preparation warrant the belief that in this highly radioactive charcoal we have an agent the use of which will be followed by the same if not better results. The local application of emanation cocoanut charcoal in tubes or capsules or incorporated in ointments or solutions is worthy of trial.

MEDICAL RECORD

August 21, 1909.

1. Life Insurance in Its Relation to the Prevention of Tuberculosis. By S. ADOLPHUS KNOPF.
2. Pellagra, with Report of Nine Cases, By EUGENE D. BONDURANT.
3. The Value of Microscopical Examination of the Prostatovesicular Secretion in the Diagnosis and Prognosis of Gonococcus Infection, By ABRAHAM L. WOLBARST.
4. A Case of Multiple Sclerosis, By CHARLES D. FOX.
5. Malformations of the Nasal Septum, By JAMES P. LEWIS.
6. Remarks on Flat Feet, By MAX STRUNSKY.
7. Conservatism in the Use of Flat Foot Plates, By ROLAND O. MEISENBACH.

1. **Life Insurance in Its Relation to the Prevention of Tuberculosis.**—Knopf remarks that the time has come for active cooperation between life insurance companies and existing antituberculosis agencies. The only question concerning which there seems to be some doubt is as to how this cooperation can be effected and be of mutual advantage to the companies and to the policy holders. Some authors hold that compulsory insurance against tuberculosis, as it is practised in Germany, is a political impossibility in the United States, and voluntary insurance against tuberculosis would result in business failure, while others, among them our author, think that such an association which would insure against sickness, with particular reference to tuberculosis, could become an accomplished fact. Knopf is convinced that with the life insurance companies to help in the prevention and cure of tuberculosis not only in the adult, but particularly in the child, the time for the eradication of the disease may be brought much nearer. He does not believe in the hue and cry against soulless corporations. Insurance companies are corporations. They are in the business for whatever money they can make; but by helping to educate and awaken the masses to the danger of tuberculosis, by using their agencies to prevent the spread of the disease, and eventually also by creating sanatoria and aiding existing ones, curing thus a goodly number, they are doing the greatest humanitarian work. If in addition they will use their surplus earnings for the building of model tenements in cities, or individual model homes in suburbs or country for laboring men, they will be one of the greatest factors in the reduction of other diseases as well as tuberculosis, and in improving the social conditions of thousands of honest workers, thus doing away with much of the social misery and social discontent of our times.

2. **Pellagra, with Report of Nine Cases.**—Bondurant reports nine cases of pellagra. In all of his cases there is the history of the liberal use of corn meal as food, and most often it is stated that a "good Western meal" is used, or "meal ground from Western corn." At the Mount Vernon Hospital, where the largest number of cases has occurred, Western corn is used exclusively. This corn is shipped in bulk, sometimes becomes "heated" and the meal is in some instances quickly mould infected and sours readily. He has no evidence to offer as to whether or not the eating of damaged meal is the cause, or the only cause, of pellagra. All of his cases occurred among white persons, but as he has practically no negro patients this fact does not indi-

cate any special susceptibility among whites. He believes that the disease has prevailed in the South only a few years.

3. **The Value of Microscopical Examination of the Prostatovesicular Secretion in the Diagnosis and Prognosis of Gonococcus Infection.**—Wolbarst observes that a man may be "cured" of his gonorrhoea, as far as symptoms are concerned, and his prostate and annexa may contain gonococci; gonococci may be found in clear urine; they may persist in the prostate for many years, and show no symptoms of any kind; they may not be infectious necessarily; we cannot tell whether or not any given prostate contains gonococci, except by making a large number of examinations of the massaged secretion after stimulation and irritation by silver nitrate, etc.; though it is conceded that cultures are more certain, when successful, than microscopical examinations, the army of practising physicians must rely upon the microscope for their results. Besides, a negative finding in a culture tube is no more enlightening as to the absence of gonococci in the prostate than is a negative finding on a microscopical slide. In either case the thing sought for has merely not been found, which is a different thing from saying that it is not there. The gonococcus should be sought for until every means is exhausted.

5. **Malformation of the Nasal Septum.**—Lewis says that while many septal deformities exist with no symptoms and are not detrimental to the health, they are often the cause of severe local and general complications, in which case they are obstructive or irritative in character. The symptoms most generally met with are: (1) A sense of stiffness in the nose. (2) Pain is frequently complained of, the frontal region, bridge of the nose, and inner angle of the orbit being the usual seats. (3) Irritation of the ethmoidal and frontal sinuses is sometimes accompanied by dizziness, which is brought on or increased by sudden movements of the head and jarring of the body, and is present when the eyes are closed, which serves to distinguish it from that of ocular origin. (4) Asthma is sometimes due to irritation caused by the deformity. (5) An increased nasal secretion is usually present, the secretion being thick and mucoid in character when the mucous membrane is inflamed low down, or sometimes thin and acrid and may become purulent when the sinuses are affected. (6) Postnasal catarrhal inflammation is present when the nasal obstruction prevents the drainage of the secretions and they flow back to the epipharynx. (7) When the obstruction is well forward or low down nasal respiration is usually obstructed. The amount of obstruction will vary from time to time, but its secondary symptoms persist, as dry pharyngitis, laryngitis, and tracheitis, disturbed sleep, nasal voice, and mental sluggishness. Besides the appearance of the septum itself, some of the more common objective symptoms are: (1) External deformity of the nose; (2) epistaxis, due to the formation and separation of crusts which collect where the dust laden air impinges on the prominent part of the deformity; (3) the presence of pus in the olfactory fissure between the deviated septum and middle turbinate and (4) middle dry rhinitis on the middle

structed side. The more important diseases which may be caused or aided in their development by septal deformities are all of the inflammatory conditions of the nasal mucous membrane, acute and chronic inflammation of the sinuses, acute and chronic otitis media, chronic catarrh of pharynx and larynx, trachea, or bronchi, nasal neuroses, and polypoid degeneration of the nasal mucosa. In practice we find that various obscure symptoms may disappear following the restoration to normal of the nasal passages.

BRITISH MEDICAL JOURNAL.

August 7, 1909.

1. Address in Obstetrics, By Sir JOHN W. BYERS.
2. A Plea for a Rational Puerperium, with a Record of a Hundred Cases, By F. W. N. HAULTAIN.
3. Three Demonstrations on Congenital Malformations of the Palate, Face, and Neck, By Professor ARTHUR KEITH.
4. Two Cases of Head Nodding in Infants, By CAMERON GIBSON.
5. Clonic Spasm of the Diaphragm Associated with a Cervical Rib, By G. BERTRAM HUNT.

2. **A Plea for a Rational Puerperium.**—Haultain remarks that for many years he has thought that the conduct of the puerperium simulated more that of the convalescence from a severe illness than the management of the sequel of a normal function. He found the same views expressed in a paper by von Alvensleben, *Das Aufstehn der Wöchnerinnen in den ersten Tagen des Wochenbettes*, and publishes now his statistics. The puerpera, if willing, was encouraged to sit up in bed to meals on the second day. As early as she felt inclined thereafter she was allowed to leave her bed and walk to the fireside, where she sat for an hour. On the following day this was repeated morning and evening. The next day two hours, morning and evening, were spent out of bed, the patient sitting and walking a little if she so desired. The fifth day after rising was practically spent out of bed with the exception of a few hours' rest in the afternoon, and on the tenth day the patient left the hospital. The number of patients who followed this line of treatment was one hundred, all of whom sat up in bed on the second day; forty rose on the third day; thirty-five rose on the fourth day; twenty-five rose on the fifth day. Of the one hundred cases, forty-seven were primiparæ and fifty-three multiparæ. Each was carefully examined before leaving the hospital, and as many as possible six weeks later. The morbidity in these cases—that is, a temperature over 100° F. or pulse over 90 for twelve consecutive hours—was represented by three cases. In two infective temperatures developed on the third day. One of these patients left the hospital well on the sixteenth, the other on the twenty-eighth day. Pelvic examination on the day of leaving the hospital (tenth to twelfth day) showed the pelvic organs to be normal, except in two cases, where a slight retroversion of the uterus was present. In one there was considerable varicosity of the veins of the legs, but the woman remarked that it was not nearly so bad as after previous confinements—this being her seventh. All the patients examined six weeks and more after confinement showed involution to be thorough, and the position of the uterus normal, with the exception of two, being those previously noted as having retroversion. It was most inter-

esting to hear the uniformly eulogistic terms in which, without exception, the women described their so called convalescence while the favorable comparisons made by multiparæ with their former confinements was most convincing. Many voluntarily expressed the opinion that they had never felt so well previously, and from the others when asked there was no dissentient voice. The author remarks that it is difficult to understand why woman has been condemned for thousands of years to so much enforced idleness. In consulting ancient literature there is no evidence that the prescription was founded on a physiological or even a physical basis. In primitive races immediate exercise was the usual custom, the woman, to cleanse herself, at once after the birth of the child plunged into the lake or stream near which the confinements were usually conducted. In what might be termed "the religious epoch," when priests assigned to themselves the position of obstetrical specialists, this practice seems to have been discontinued, and woman subjected to the ordeal of purification, which varied in detail amongst different authorities, but mainly consisted in enforced solitude for from ten days to three weeks, which was chiefly spent in the recumbent posture, doubtless from want of anything better to do. From this probably arises the term "confinement," so generally used for the act of child bearing.

3. Three Demonstrations on Congenital Malformations of the Palate, Face, and Neck.—Keith has made a study of the specimens of the various forms of cleft found in the palate and upper lip of children at birth, as represented in the various metropolitan medical museums. It is a very interesting article but too long to be abstracted and should be read in the original.

THE LANCET.

August 7, 1909.

1. Address in Obstetrics, By Sir JOHN W. BYERS.
2. Malformations of the Heart, By ARTHUR KEITH.
3. A Method of Giving Ether by Means of Nasal Tubes, By H. M. PAGE.
4. (I). Pressor Bases in Normal Urine and their Diminished Excretion in Gouty Urine; (II). the Excretion of Chlorides in Gout, By WILLIAM BAIN.
5. The Relative Toxicity of Chloroform (CHCl_3) and of Carbon Tetrachloride (CCl_4), By AUGUSTUS D. WALKER, with a Note on the Danger of Carbon Tetrachloride as a Dry Shampoo, By V. H. VELEY.
6. Medical Relief and Public Assistance, By C. S. LOCH.
7. Ameliorative Measures Indicated by School Medical Inspections, By JAMES ROBERT KAYE.

2. Malformations of the Heart.—Keith, in his first Hunterian lecture, remarks that our knowledge of the heart has advanced since Peacock's time, who in 1866 published his last edition of *Malformations of the Human Heart*, still the standard English work on this subject. One of the greatest discoveries since that time is now only dawning, but every year increases our assurances of its truth—viz., that there is a fourth part or chamber in the mammalian heart which hitherto we have taken no cognizance of. The three parts of the mammalian heart at present recognized are (1) the sinus venosus, (2) the auricles, and (3) the ventricles. The fourth part is the bulbus cordis, which is so well seen in the shark's heart. It is usually supposed that the bulbus cordis has completely disappeared from the

mammalian heart, but now we have good reason for believing that, in the same manner as the sinus venosus has become incorporated in the right auricle, the bulbus has become included in the right ventricle, forming that part loosely termed its infundibulum. The credit of this discovery belongs to Alfred Greil, professor in the University of Innsbruck. He traced the fate of the bulbus by a prolonged study of the hearts of developing vertebrates. Independently of him Keith has reached the same conclusion from an investigation of malformed human hearts and of the hearts of vertebrate animals. Professor Peter Thompson has recently identified and described the development of the bulbus in an early human embryo. A large number of the very commonest malformations of the human heart are due to an arrest of the process which ends in the incorporation of the bulbus cordis in the right ventricle. The great majority of cases of congenital stenosis of the pulmonary artery are of this nature. Our author makes 270 specimens of malformed hearts the subject of his lecture in reference to the bulbus cordis, and says that applying our present knowledge of the development and comparative anatomy of the heart to the explanation of these abnormalities, we find ourselves hampered at the very outset by a complete ignorance of the functional nature of the bulbus cordis. It is especially large in the shark tribe, and is often lined with valves and thickened endocardium throughout. Its musculature is striated, but the fibres are more fusiform and less branched than in the other chambers. The nerve supply is abundant. Systole occurs in it subsequent to contraction in the ventricles. Somehow its function is connected with the gill or respiratory system; it is with the respiratory system that it is correlated. When the gills become replaced with lungs and the aortic stem divided into systemic and pulmonary trunks as in the amphibia, the part of the bulbus at the origin of the aorta atrophies more than the part connected with the pulmonary artery. In reptiles a part of the bulbus musculature persists and can be distinguished from the proper ventricular muscle; our author has also seen it well marked in an abnormal human heart. In the hearts of birds and mammals the bulbus musculature completely disappears, but its cavity persists, undergoes a great expansion, and forms the infundibulum of the right ventricle. How far the infundibulum is formed by a downward expansion of the bulbus cavity into the right ventricle and how far it is formed by an upgrowth over it of the ventricular muscle is difficult at present to decide, but the evidence of malformed hearts points to the former process being the true one. What the exact function of the infundibulum of the mammalian right ventricle may be is difficult at present to say, but its origin, its comparative anatomy, and the arrangement of its musculature make it certain that it has something to do with the regulation of the blood supply to the lungs. There are many clinical phenomena connected with this part of the heart which need further observation and explanation.

3. A Method of Giving Ether by Means of Nasal Tubes.—Page describes his nasal tube for ether anaesthesia thus: It consists of two

rubber tubes sufficiently large to closely fit the nares; these nasal tubes are coupled to a much larger rubber tube by means of a Y shaped piece of glass tubing; this larger rubber tube is connected with a large glass funnel which is covered with a single layer of thin flannel, and it is interrupted in its course by a glass trap to prevent any excess of ether running down the nasal tubes. An injection of morphine and atropine is given an hour before the operation. He has used $\frac{1}{4}$ grain and $\frac{1}{75}$ grain respectively. Ether anaesthesia is induced by the open drop method, the mouth is then opened, and the pharynx and pharyngeal aspect of the epiglottis and larynx are brushed over with a 2 per cent. solution of cocaine, and the closely fitting rubber tubes are pushed down the nares till the lower ends are opposite the epiglottis. The pharynx is then packed with a roll of sterilized gauze whilst the tongue is being pulled forward. In packing, care must be taken not to compress the tubes, though it must be done thoroughly, and the lateral parts of the pharynx to the outer sides of the tubes must not be neglected. Ether anaesthesia is now maintained by the drop method on the flannel covering the glass funnel. It is a help to get some one to begin dropping ether on the flannel as soon as the nasal tubes are passed, and so prevent to some extent the lessening of anaesthesia which must occur while the packing, etc., of the throat is being done. A sterilized towel is thrown over the head of the patient, completely covering it. The anaesthetist stands about two feet behind the patient. The breathing and the color of the blood at the site of the operation are watched, and an occasional look at the patient can be taken by raising the towel without interfering with the operator.

4. **Pressor Bases in Normal Urine.**—Bain says that normal urine contains two bases which produce a rise of blood pressure. The first of these was originally discovered by Abelous and termed by him "urohypertensine." It can be obtained as an oxalate from an ethereal extract of the urine. It is volatile with steam and is probably identical with isoamylamine, a base which is formed from leucine. The second base remains behind after extraction of the first base with ether, and it can then be obtained by extracting with amylic alcohol the urine made alkaline with sodium carbonate. Its reactions indicate that it is identical with, or allied to, hydroxyphenylethylamine, a base which is formed from tyrosine. Both bases are obtained during the putrefaction of proteins. The existence of pressor basic material during the putrefaction of flesh was discovered by Abelous. The identification of the bases is the result of Rosenheim's work on putrefying placenta and of Barger and Walpole's on putrid meat. Their presence in the urine is explicable on the hypothesis that they are formed by putrefactive processes in the alimentary tract; they are then absorbed and excreted in the urine. In the gouty urines so far examined by the methods of Abelous and steam distillation the first base is entirely absent. By the "direct method," however, a pressor base was present, but the rise in blood pressure caused by it was much less than that produced by a similar extract from normal urine. The amount of the second base in gouty urine was smaller than

in normal urine. The decrease in the elimination of these bases will possibly explain the rise in arterial blood pressure frequently observed in gouty patients.

LA PRESSE MEDICALE.

June 19, 1909.

Experimental Contribution to the Surgery of the Stomach,
By ALBERT FROUIN.

Experimental Contribution to the Surgery of the Stomach.—Frouin demonstrates by experimental researches that in operations on the stomach following resection of the pylorus, the motor as well as the digestive function of the stomach and the intestine is retained by direct anastomosis of the two ends of the section. Following a latero-lateral gastroenterostomy or after a Y shaped operation as proposed by Romme, complications will be observed in evacuation, the stomach voids its contents by an inverted mechanism, that is during the time of rest, while the motor and secretive power of the intestine is disturbed.

June 23, 1909.

Oospora,
By PROFESSOR H. ROGER.

June 26, 1909.

1. Tubercular Erythema and Tuberculosis,
By A. B. MARFAN.
2. A New Syndrome: Bronze Diabetes with Pseudoscler-
osis in Patches, and Hæmochromatosis of the Cor-
nea,
By R. ROMME.

1. **Tubercular Erythema and Tuberculosis.**—Marfan observes that nodular erythema develops very often—not always—in tuberculous infection. In a case of this erythema, even if no sign of tuberculosis can be found, we must always think of tuberculosis and treat the patient accordingly: Rest, open air, life in the country, moderate partaking of raw meat, tonics, rubbing with a mixture of alcohol and oil of turpentine. This treatment has proved successful in the author's practice.

June 30, 1909.

Infantile Paralysis of the Muscles of the Foot: Treatment
by Partial Arthrodesis,

By C. DUCROQUET and PAUL LAUNAY.

Infantile Paralysis of the Muscles of the Foot.—Ducroquet and Launay remark that we should pay special attention in infantile paralysis of the muscles of the foot to direct extension and flexion. Paralysis of one or more groups of muscles becomes functionally severe as talipes varus or talipes valgus. It is very difficult to reestablish the equilibrium of the foot through transplantations of the tendons. Arthrodesis of the twisted articulation solves the problem without touching the muscles.

LA SEMAINE MEDICALE

June 23, 1909.

Hæmorrhagic Complications of Influenza.

By L. CHEINISSE.

Hæmorrhagic Complications of Influenza.—Cheinisse reports eight cases of severe hæmorrhages of the brain or stomach as complications to influenza. All of the patients but one were females. He believes that the bleeding occurs as a result of the general running down of the system attacked by influenza, and emphasizes the necessity of paying special attention to the after treatment, which should consist in rest and tonics.

June 30, 1909.

Hysteric Aphasia,
By PROFESSOR G. MARINESCO.

BERLINER KLINISCHE WOCHENSCHRIFT.

July 5, 1909.

1. Pathological Anatomy of the Bilharzia Disease,
By GÖBEL.
2. A Tumor of the Frontal Portion of the Brain Presenting the Clinical Picture of a Tumor of the Posterior Cranial Fossa,
By A. RUCKERT.
3. Studies Concerning the Hemolysis in Paroxysmal Hemoglobinuria, By A. A. HIJMAN VAN DEN BERGH.
4. Pathology of the Secretion of Gastric Mucus,
By E. SCHÜTZ.
5. Etiology of Hypertrophy of the Prostate,
By ALFRED ROTHSCCHILD.
6. Epididymitis Erotica and Sympathica,
By LUDWIG WÄLSCH.
7. Reform Midwifery in the Clinic and the Home,
By PUPPEL.
8. Report Concerning the Collective Investigation of the Berlin Medical Society Concerning the Inflammations of the Cæcum in 1907 in Berlin (Concluded),
By A. ALBU and J. ROTTER.
9. The Method of Presentation of Medicolegal Opinions,
By HUGO MARX.

1. **Bilharzia Disease.**—Göbel describes the deposits of eggs of the *Schistosomum hamatobium*, formerly called the *Bilharzia hamatobia*, in various tissues of the body, such as the pancreas, spleen, liver, and lungs, generally in the uropoietic and intestinal systems, and gives illustrations that represent the eggs, either singly or in groups, surrounded by a capsule of connective tissue, forming little tumors.

4. **Secretion of Gastric Mucus.**—Schütz asserts that only a more abundant chymus mucus is pathological; absence of chymus mucus is no proof of faulty secretion of gastric mucus. At any rate it is premature to consider suppression of the secretion of gastric mucus as a frequent or important symptom accompanying various diseases of the stomach and to draw therapeutic conclusions therefrom.

5. **Hypertrophy of the Prostate.**—Rothschild ascribes hypertrophy of the prostate to first a chronic inflammatory focus about the excretory gland ducts of the prostate, which are narrowed or totally occluded thereby, and second the effect of this narrowing or occlusion of the gland ducts, retention, dilatation, and cystic degeneration.

8. **Appendicitis.**—Albu and Rotter presents the results of the collective investigations made in Berlin concerning the medical and surgical treatment of appendicitis, which may perhaps be summed up as stating that many patients, including such with mild attacks, recover under medical treatment without operation, but that the advice to wait carries with it more responsibility than that to be operated upon at once as it must depend on very accurate diagnosis of the condition present.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 6, 1909.

1. Contribution to the Question of the Clinical Importance of the Estimation of the Antitrypsin in the Blood,
By JACOB.
2. The Antitrypsin Contained in the Blood in Gynecology,
By BECKER.
3. A Special Reaction in the Blood of the Umbilical Cord in Infants,
By BAUER.
4. Etiology of Hemispheric Ophthalmia,
By SCHNEIDER.
5. A Contribution to the Neuralgia of the Trigeminal of Dental Origin,
By PREISWERK.

6. Diagnosis of Lead Poisoning from the Blood,
By TRAUTMANN.
7. How Can a Physician Estimate the Salts and Urea in the Urine in the Consulting Room?
By WUNDER.
8. Colloid and Colloidal Silver, Particularly Collargol,
By WOLFROM.
9. The Operative Treatment of Broken Bones,
By MENDEL.
10. A Case of Bilateral Fissure of the Hand Associated with Syndactylia,
By HERWIG.
11. Investigation of the Blood by Means of the Turpentine Guaiac Test,
By DREYER.
12. An Instrument for the Exact Measurement and Mixture of Extremely Small Quantities of Fluids,
By HÖRDER.
13. A New Pleximeter,
By FRANCKE.
14. Warm Vaginal Applications with the Aid of a New Thermophore,
By STEBLIK.

1. **Clinical Importance of the Estimation of the Antitrypsin in the Blood.**—Jacob concludes from the results of his investigations that an increase of the antitryptic ferment of the blood serum is met with in a relatively large number of very different pathological conditions. It seems to be constant in severe cachexia, is particularly frequent in all diseases associated with changes in the white blood corpuscles, and occurs in a number of cases in which these conditions cannot be made out. The nature of the reaction and the cause of its appearance are too obscure, and its positive occurrence in the most various pathological conditions is too frequent for it to be used as a diagnostic aid.

2. **Antitrypsin in the Blood.**—Becker says that in the blood of the carcinomatous a marked increase of the antitryptic power is met with fairly constantly, but that this reaction is not specific to carcinoma as it is met with in other diseases such as anemia, chronic septicemic processes, and cachexia. In connection with other clinical symptoms the increase of the antitrypsin can be used for diagnosis, but it has no great significance in distinctive diagnosis because the reaction is often positive with anatomically benign, clinically malignant tumors. During labor there is a great increase of the antitrypsin, while during pregnancy it remains of the normal quantity, or is only slightly increased.

6. **Diagnosis of Lead Poisoning from the Blood.**—Trautmann summarizes the results of his investigations as follows: 1, Red blood corpuscles with basophilic nuclei are to be found in both healthy and anemic persons. Only in two per cent. of the cases did the number of erythrocytes with basophilic nuclei exceed 100 to the million. 2, Erythrocytes with basophilic nuclei are most numerous among people who work in lead. The number of elements with basophilic nuclei varies in a person suffering from lead poisoning, so that in doubtful or important cases a second or even a third examination of the blood may be desirable. 4, For the purpose of prophylaxis in the lead trades, and for the clinic, a condition in which the number of erythrocytes with basophilic nuclei exceed 100 to the million, other conditions, such as malaria, being excluded, is diagnostically valuable. For forensic cases the limit may be raised to 300 to the million. 5, It would be desirable to require blood examinations to be made for the demonstration of lead poisoning. 6, It is possible to detect lead poisoning in an early stage by means of the blood examination and so to forestall the onset of the severer

forms of the disease by timely removal of the patient from his trade and other proper care.

7. **Examination of the Urine.**—Wunder describes a method of examining urine for salts and urea by the constant electric current.

AMERICAN JOURNAL OF SURGERY.

August, 1909.

1. Observations in Pruritus Ani. By G. A. HUMPHREYS.
2. Some Accidents and Complications of Gynecological Operations. By SAMUEL M. BRICKNER.
3. The Utility of the Vaginal Douche. By BYRON ROBINSON.
4. Surgical Treatment of Retrodisplacements of the Uterus. By C. A. STEWART.
5. Fractures of the Radial Shaft. Rotation Deformity (Occurrence and Diagnosis) and Aluminum Plates. By WILLIAM S. THOMAS.

3. **The Utility of the Vaginal Douche.**—Byron Robinson remarks that the utility of the vaginal douche depends on the axiom that living, flowing blood cures disease. The apparatus through which the vaginal douche accomplishes the hyperæmia or its result is the genital inosculature circle. The method of applying the therapy through the vaginal douche is by excessive or exaggerated physiology, i. e., by congestion of the genitals. The utility of the inosculature circle consists in controlling maximum blood volume for the purpose of engorging peripheral viscera. The stimulation of the genital inosculature circle by the hot vaginal douche increases the quantity of blood flowing through the genitals. Maximum engorgement of the peripheral viscus results in maximum visceral elimination, drainage. During the vigorous employment of the vaginal douche its stimulation produces premature appearance of menstruation. The vaginal douche may be safely employed during the first months of pregnancy to enhance the blood supply of the uterus and nourishment of the fœtus. The fountain syringe reservoir for the vaginal douche should be of twelve quart capacity. The simplest and most economical vaginal syringe is a twelve quart wooden pail. The location of the syringe should be four feet above the patient. The quantity of fluid administered in the beginning should be two quarts for patients unaccustomed to its use, and four quarts for those accustomed to its use. The quantity should be increased a pint at each administration to twelve quarts. The temperature of the douche should be 105° F. in the beginning and increased one degree at each administration until it is as hot as it can be borne (115 to 120° F.). The duration of the douche should be ten minutes for each gallon. The time to administer the douche is in the evening immediately before retiring and in the morning (after which the patient should lie horizontally for forty-five minutes). The position of the patient should be on the dorsum. As to ingredients a handful of sodium chloride and a half teaspoonful of alum should be added to each gallon, the sodium chloride to dissolve the mucus and pus, to act as a natural antiseptic, and to prevent reaction. The alum is to astringe, check waste secretions, and indurate tissue. The vaginal tube employed in administering the douche should be sterilized, boiled, and every patient should possess one. The most useful vaginal tube is the largest that can be introduced or the one that distends the vaginal fornices the

greatest, so that the hot fluids will bathe the widest surface area of the proximal or upper end of the vagina—the most adjacent to the uterine vessels (arteries, veins, lymphatics). The utility of the vaginal douche is: (a) It stimulates contraction of tissue (muscle, elastic, and connective); (b) it stimulates the contraction of vessels (lymphatics, veins, and arteries); (c) it absorbs exudates; (d) it checks secretion; (e) it is a stimulant; (f) it relieves pain; (g) it cleanses; (h) it checks hæmorrhage; (i) it curtails inflammation; (j) it drains the tractus genitalis.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

August, 1909.

1. A Study of Achylia Gastrica. By CHARLES G. STOCKTON.
2. Duodenal Ulcer and Its Treatment. By MAX EINHORN.
3. Clinical Experiments with Homologous Vaccines in the Treatment of Septic Endocarditis and Pyæmia. By W. GILMAN THOMPSON.
4. Acute Gangrenous Pancreatitis. By LOUIS JURIST.
5. The Typhoid Cutaneous Reaction. By CLEVELAND FLOYD and WILLISTON W. BARKER.
6. Sarcoma of the Stomach. By LOGAN CLENDENNING.
7. Endemic Amœbic Dysentery in New York, with a Review of its Distribution in North America. By HENRY S. PATTERSON.
8. Blood Cultures in Human Glanders. By BURRELL B. CROHN.
9. A Simple Method of Estimating the Common Variations and Deformities of the Foot. By HENRY O. FEISS.
10. A Further Consideration to My "Simple" Method for the Quantitative Determination of Pepsin in a Given Gastric Juice. By H. ILLOWAY.
11. Adenofibroma of the Male Breast. By R. T. WOODVATT.
12. Oculomotor Paralysis Accompanied by Facial Palsy, Neuroparalytic Keratitis, and Hemiplegia. By BERNARD CHANCE.
13. Insanity, Responsibility, and Punishment for Crime. By JAMES J. WALSH.

1. **Achylia Gastrica.**—Stockton says that the various causes that result in achylia gastrica probably differ in nature: (a) Those that accompany pernicious anemia apparently result from a definite atrophy of glandular parenchyma of the stomach. (b) Others seem to follow gastritis. (c) Others appear to be secondary to general infection, possibly from gastritis, as is seen after typhoid fever, syphilis, etc. (d) There remains a large group in which, from unknown causes, the secretion becomes more and more depressed until complete achylia is established. It has been suggested that the trouble in the beginning is functional, and that subsequently gland structure disappears, similar to atrophy from lack of use in other regions. In attempting to follow the course of cases apparently about to become complete achylia gastrica, there is confessedly a source of possible error through misinterpretation. A case which shows a trace of combined chlorides or a faint biuret reaction may go on to complete loss of secretion; but, on the other hand, secretion may be found restored if the case is studied long enough. Nevertheless, these patients should be studied in relation to achylia gastrica, because in them only are we able to discover achylia gastrica in its process of development. The author reports 132 cases, of which number sixty-two were males, seventy females. Ages were from twenty-one to seventy-two years; but only five patients were

under thirty and only one beyond seventy. There were twenty-nine patients between the ages of thirty and forty; thirty-seven patients between forty and fifty; twenty-eight between fifty and sixty; and twenty-five between sixty and sixty-nine.

2. **Duodenal Ulcer and Its Treatment.**—Einhorn reports six such cases, and remarks that a marked hyperchlorhydria was present in all cases. In two cases there also was a slight continuous over-secretion of gastric juice. Slight peristaltic restlessness of the stomach was found in only one case. Pains are generally present two to three hours after meals, and are alleviated by the ingestion of food. Moynihan calls this symptom "hunger pain." In nearly all the patients, periods of suffering alternate with periods of perfect euphoria. Hæmorrhages (hæmatemesis or melæna) were found in two of the cases. Usually constipation is present, but a tendency to diarrhœa was found in two. Pain on pressure was absent in nearly all the cases. The symptoms just enumerated (except hæmorrhages) are all caused by hyperchlorhydria and frequently occur without the presence of duodenal ulcer. If, however, in association with these symptoms hæmorrhages in the digestive tract occur, the diagnosis of duodenal ulcer is justified—for the real gastric ulcers generally act differently, pains immediately after meals, pressure pains in the epigastrium, etc. The diagnosis appears to become more positive if the thread test shows a distinct blood spot at a distance of 58 to 66 cm. from the teeth. The treatment should at first be medical. In the mild cases regulation of the diet (frequent meals, abstinence from highly seasoned substances, acids, and too fatty foods), improving the general condition by means of iron, arsenic, cold sponging, good air, avoidance of bodily exercise, and the use of alkalies are sufficient to effect a considerable amelioration, if not a cure. In several cases olive oil (two table-spoonful morning and evening) seemed to be of service. In graver cases of duodenal ulcer (hæmorrhages, severe pain, etc.) a strict ulcer cure with rest in bed and rectal alimentation, and afterward fluid diet, must be instituted. In these cases large doses of magnesia and bismuth are of benefit; calcined magnesia, 0.5 (8 grains), bismuth subnitrate, 2 (30 grains), in powders—one powder three times a day, a half hour before meals. If a strict rest cure has been unsuccessful, or if we have to deal with severe hæmorrhages endangering life, and returning frequently, or if obstinate spasm of the pylorus occurs, associated with severe pains in the pyloric region and slight peristaltic restlessness of the stomach, an operation (usually gastroenterostomy) is indicated. In duodenal ulcer the clinician must advise surgical treatment sooner than in gastric ulcer, as the former, through its complications (hæmorrhages, perforations, stenosis of the pylorus), endangers life much more readily than the latter. Gastroenterostomy in these cases is fortunately attended with good results. The ulcer will then soon heal, as the gastric juice does not longer flow over the ulcerated surface in the duodenum or irritate it. At all events, the dangers of hæmorrhage, perforation, and pyloric stenosis are thereby prevented.

13. **Insanity, Responsibility, and Punishment for Crime.**—Walsh remarks that the term insanity is so vague that its use as a plea to enable the criminal to escape punishment is not justifiable in the present state of our knowledge. Responsibility differs in different individuals, but it is never quite eliminated except in the absolute idiot. For those of lowered mentality, even the animals, punishment has a good effect. Punishment is not revenge, but is meant to deter the individual criminal, and above all to deter others tempted to criminal acts; it is more needed for those of lowered mentality, of whom the expert may well declare that they are insane, than it is for the normal. Subrational individuals with the cunning of the insane will take advantage of our leniency if present conditions are allowed to continue, and we shall have a riot of crime by personal violence.

ANNALS OF SURGERY.

August, 1900.

1. Jejunal and Gastrojejunal Ulcer following Gastrojejunostomy, By HERBERT J. PATERSON.
2. Surgical Procedures Designed for the Relief of Pulmonary Tuberculosis, By CHARLES A. POWERS.
3. A Case of Pistol Shot Wound of the Axillary Artery, By FRANK W. MURRAY.
4. The Treatment of Diffuse Septic Peritonitis, By ROBERT G. LE CONTE.
5. Volvulus of Giant Sigmoid Colon, By WILLIAM B. COLEY and I. S. CHAFFEE.
6. Large Sliding Hernias of the Sigmoid, By LUCIUS W. HOTCHKISS.
7. The Fat Appendix, By HOWARD A. KELLY.

1. **Jejunal and Gastrojejunal Ulcer Following Gastrojejunostomy.**—Paterson says that the risk of jejunal ulcer following gastrojejunostomy is probably under two per cent. At the present time, this complication apparently occurs less frequently than formerly. Clinically, there are two groups of cases: (1) Those in which perforation into the general peritoneal cavity ensues; (2) those in which general peritonitis is prevented by the formation of adhesions. Pathologically the cases may be classified as follows: (1) Ulcers of the jejunum; (2) gastrojejunal ulcers, or ulcers at the site of the anastomosis. Jejunal ulcers in some instances are of infective origin. In these cases ulceration commences within a very short interval after gastrojejunostomy, and usually the ulcers are multiple. In a large proportion of cases the ulcer is single, and is probably the result of the toxic action of hydrochloric acid, which injures the cells of the mucous membrane so that they are digested by the intestinal juice. Possibly other agents than hydrochloric acid may play a part in injuring the mucous membrane. Gastrojejunal ulcers are a direct consequence of the wound made in effecting the anastomosis, and their persistence is probably the result of hyperacidity of the gastric juice. Closure of a gastrojejunostomy opening is the consequence of cicatrization of a gastrojejunal ulcer. It is more likely to occur when the pylorus is patent, not because of the patency of the pylorus, but because in such cases hyperacidity is usually markedly present. Any procedure or disease which diminishes the amount of bile and pancreatic juice in the jejunum, favors the occurrence of jejunal and gastrojejunal ulcer. For this reason operations of the "Y" type and entero-

anastomosis are inadvisable, at any rate in cases in which free hydrochloric acid is present in the gastric contents, as after these procedures the anastomosis and a portion of the jejunum are deprived of the protective influence of the alkaline bile and pancreatic juice. The reason that ulceration has followed the anterior operation more frequently than the posterior operation with a loop, is probably that in former times the anterior operation was more frequently performed. As no instance of ulcer after the posterior no loop operation has yet been recorded, we must for the present assume that its occurrence after this type of operation is less likely. It is possible, however, that this immunity is partly the result of improvements in technique, and in the after treatment of gastric operations in general. In cases in which perforation into the general peritoneal cavity occurs, immediate laparotomy offers the only chance of saving the patient's life. Inasmuch as there is some evidence that jejunal and gastrojejunal ulcers may heal, an operation should not be performed in the chronic cases, until after a thorough trial of medical treatment. Even when surgical intervention is necessary, an attempt should first be made to diminish excess of acidity, if this is present. Our aim should be to prevent the occurrence of this complication of gastrojejunostomy. Preventive treatment consists in (1) careful and appropriate surgical technique, and (2) prolonged after treatment.

AMERICAN JOURNAL OF OBSTETRICS

August, 1909.

1. The Mechanism of Occlusion of the Tube, By E. RIES.
2. Constipation in Women, By A. D. KOHN.
3. Puerperal Sepsis, By H. M. STOWE.
4. Gynæcology in the Young, By J. V. D. YOUNG.
5. The Operative Treatment of Pelvic Infection, By G. H. MALLETT.
6. The Prevention of Perineal Lacerations, By E. K. MACOMBER.
7. Induction of Labor at Term as a Matter of Routine, By A. H. WRIGHT.
8. Inversion of the Uterus of Two Years and Four Months Duration Cured by Posterior Colpotomy and Posterior Section of the Uterus, By E. SEALY.
9. Report of Six Successful Cesarean Sections with some Remarks on the Repeated Operation, By G. M. BOYD.
10. A New Hydrostatic Dilator, By C. B. REYNOLDS.
11. Cesarean Section at Term for a Tumor of the Recto-vaginal Septum, By R. CROXSON.

1. **The Mechanism of Occlusion of the Tube.**—Ries states that the infectious contents of an inflamed tube escape through the abdominal end with consequent chronic thickening of the peritoneum making a peritonitic ring around the ostium. This ring may not be complete, and part of it may be formed by any organ that the contraction of the peritonitic scars brings together. As the scars contract the escape of fluid from the tube is impeded, the tube becomes dilated and its walls are stretched. The muscular coat and its serosa are stretched more than the ring around the ostium. As the inflammation subsides the contents of the tube are absorbed or discharged, the swelling of the folds subsides, and the walls enlarge and loosen. The peritonitic ring gains in mobility and contracts further over the fimbriæ. The fimbriæ then escape inward without inversion. The ring then closes completely. The union of the peritonitic ring is serous, and

by squeezing it, when recent, it can be forced open and the fimbriæ be seen inside. The septic contents of the tube lie between the mucous surfaces of the fimbriæ. The peritoneal portions being inflamed can fuse with each other, but the mucous portions being covered with epithelium do not fuse.

4. **Gynæcology in the Young.**—Young refers to those who have reached the period of menstruation but are unmarried. The symptoms must warrant an examination and may be considered as follows: Leucorrhœa is the symptom which is most common but its importance cannot be determined from the character, duration, or quantity of the discharge. Irregularity of the menstrual flow is an important symptom, and if the interval between the periods is too short there is probably grave cause of pelvic congestion. If the interval is too long one suspects undeveloped uterus or sclerotic ovaries. The pain in these cases is classified as pelvic pain and reflex pain. Irritable bladder may be due to pressure or drag from a displaced uterus. Constipation as a suggestive symptom may be due to relaxation of the muscles of the perineum with tight sphincter ani or to mechanical obstruction from a displaced uterus or a tumor. Backache, headache, and neurasthenia are also suggestive symptoms. The examination of such patients should first be under anæsthesia, if possible, and the question of treatment or operation carefully considered.

7. **Induction of Labor at Term as a Matter of Routine.**—Wright offers the following recommendations and explanations: Labor should be induced in all cases within two or three days of the expected date of confinement without waiting for any of the signs of labor. The vagina should first be plugged by the Schauta method, the vault being packed as tightly as possible. After the vagina has been packed the patient may go about freely, if she so desires. The tampon should be removed in twenty-four hours, a new one introduced, and the patient again allowed to go about. The second tampon should be removed at the end of another twenty-four hours. If labor has not begun it will then be desirable to pass a bougie into the uterine cavity before placing a third tampon. In the author's experience labor has always begun after this treatment. In many of the cases the use of the bougie will not be required.

Proceedings of Societies.

THE AMERICAN MEDICAL ASSOCIATION.

Sixtieth Annual Meeting Held in Atlantic City, June 8, 9, 10, 11, 1909.

SECTION IN PRACTICE IN MEDICINE.

(Continued from page 380.)

The Association of Aortic Insufficiency with Syphilitic Aortitis.—Dr. WARFIELD T. LONGCOPE, of Philadelphia, said that in endarteritis deformans, particularly the intima was affected. Of twenty-two cases over fifty years of age, thirteen showed a systolic murmur and only three signs of aortic insufficiency. In twenty cases of chronic aortic

endocarditis, sixteen patients were under fifty years of age, eleven under forty years, and six between twenty and thirty years.

Fourteen were males and fourteen negroes. In these cases the media showed degeneration, and the disease extended to the aortic valves. Macroscopically, the thickening in the intima was much less marked than that in the media. In older patients there were scars in the media. This type was probably due to syphilis.

Dr. RICHARD C. CABOT, of Boston, said that certain of these cases responded to antisiphilitic treatment. We should use it in all primary cases.

Dr. ALLEN A. JONES, of Buffalo, said that a positive syphilitic case with aortic disease showed anginoid pains.

Dr. LONGCOPE said that in the necrotic areas of the media were organisms indistinguishable from the *Spirocheta pallida*. In one half of the number of cases cited there was a history of syphilis. Many of these patients had anginoid pains due to involvement of the coronary arteries.

The Clinical Value of Recent Studies in Experimental Nephritis.—Dr. HENRY A. CHRISTIAN, of Boston, said that all casts were formed from degenerated epithelium. There was a close association between the change of the epithelium and cast formation, as shown by experiments at Harvard. Hyaline casts were formed early and excreted late. There were a number of theories of the production of uræmia. The condition was a toxic one associated with renal lesion. Salt free diet was a means of controlling nephritic œdema. Peripheral vascular lesions were concerned in the production of œdema. Irritation might produce it.

Hypertension in Nephritis; its Cause and Treatment.—Dr. JOHN H. MUSSER, of Philadelphia, said that of the causes of hypertension in nephritis there was no exact knowledge. Hypertension was evidence of renal insufficiency. True uræmia without hypertension seldom occurred. All this meant the retention of nitrogenous material.

Heart hypertrophy occurred only in those forms of nephritis in which the glomeruli were affected. Hypertension was a conservative process, having for its object to preserve the maximum functional power of the kidney. The greatest good was accomplished by restricting salt in the food of pre-nephritics.

The Management of Uræmia.—Dr. EDWARD F. WELLS, of Chicago, said that uræmia was an auto-intoxication. Upon diagnosing chronic interstitial nephritis, the diet should be regulated, also liquids given to carry off the excretions, to avoid uræmia. The blood pressure was high in these cases. Ordinarily high tension was conservative, but at times, when there was danger of rupture, lowering of the tension was indicated—blood-letting or one of the minor measures. When dropsy was prominent, it was due to cardiac insufficiency. The urine was increased, not only in quantity, but in the urea output.

In hypertension there was intoxication. It might be the result of perversion of internal secretions. Causes such as chronic diseases should be removed, especially frontal sinus disease, etc. If one could not get at the cause, he should remove

the poison through the skin. Elimination and hygienic treatment were very important. Bleeding was of benefit because of its secondary effect on metabolism.

The Value and Limitations of Salt Free Diet and Restriction of Fluid in Nephritis.—Dr. VICTOR C. VAUGHAN, of Ann Arbor, Mich., said that he could not name all the poisonous constituents in the urine. Urea and uric acid could not be regarded as active toxic agents. The most active toxic agent was potassium chloride. In withholding salts we were not withholding the cause of uræmia. Any organic salt not necessary to metabolism was not of benefit to the body. The ash of urine was more toxic than the whole urine, because of the conversion of chlorides into more poisonous carbonates. It was impossible to reduce the amount of salt below a certain minimum.

Dr. DAVID EDSALL, of Philadelphia, said that the chloride free diet had a kernel of important truth in it. There was often an inability of the kidney to excrete the salt. The amount of sodium chloride proper for a normal person to take might cause failure of the function of the kidney in people with damaged kidneys. The retention of chlorides was an important protective measure in some cases. Hypertension and cardiac failure were means to relieve intoxication. We should put such patients on starvation diet, using dilute skim milk. We should not put them on a full milk diet in uræmia.

Dr. ROBIN, of Wilmington, Del., said that uræmic attacks usually followed exposure to cold. Gastric attacks from nephritis were relieved by morphine.

Dr. ROCHESTER, of Buffalo, said that in uræmic attacks the skin should be used as an eliminative agent. There were just as good results produced by sweating as by purging. A minute dose of pilocarpine in conjunction with the hot air bath was very beneficial.

Dr. JAMES TYSON, of Philadelphia, said that hyaline casts were the ones found first, and then the granular, which became more and more granular with the destruction of the renal cells. Apoplexy was one of the modes of termination of nephritis. As little food should be given as possible—milk in very small quantities.

Dr. UPSHUR, of Richmond, said that opiates should not be used in nephritis.

Dr. SMITH, of Boston, said that numerous cases of œdema cleared up from two days of actual starvation alone.

Dr. FREUND, of Detroit, said that by a systematic reading of the blood pressure an oncoming uræmia could be diagnosed.

Dr. JOHN H. MUSSER, of Philadelphia, said that hypertension was a conservative process. Iron was good, not only for the hypertension, but for the degenerative changes that went along. In its prolonged use blood pressure was gradually lowered. Small doses of opium were often most satisfactory.

Dr. EDWARD F. WELLS, of Chicago, said that the patient should be given the most nourishment on the least amount of food, with the least amount of carbohydrate and proteid.

The Talma-Morrison Operation in the Treatment of Cirrhosis of the Liver.—Dr. GEORGE

DOCK, of New Orleans, said that many patients were operated on too late to do good. The benefit was due to the lessening of the venous pressure. Improvement of ascitis was due to the effect on the serous membranes. The operation should be done early. Compound jalap powder would take down the ascites better than other cathartics.

Dr. ROUSSELL, of Philadelphia, said that his Talma cases had been unsuccessful, but simple tapping would help and prolong life very considerably.

Dr. DOCK said that many cases diagnosed as cirrhosis of the liver were in reality tuberculous peritonitis. The improvement in the circulation of the liver was the main point.

Rocky Mountain Spotted Fever.—Dr. H. T. RICKETTS, of Chicago, said that Rocky Mountain spotted fever was an acute, endemic, noncontagious disease with a petechial rash. The disease was limited to the spring months and occurred in those that had occupations that took them into the foot hills. It was common in Oregon, Idaho, Montana, and Colorado. The eruption might first appear as macules. Gangrene of the scrotum, tonsil, etc., might occur. There were sometimes hæmorrhagic areas. The pulse ran low throughout, except in the fatal cases. In Montana the mortality was eighty per cent.; in Idaho it was five per cent. In Idaho patients were immune to the Montana infection.

Algid Forms of Malaria.—Dr. THOMAS D. COLEMAN, of Augusta, Ga., said that progressive pernicious malaria was a very serious form and often fatal. The varieties were the comatose, hæmorrhagic, and algid. The pernicious form was due to the æstivoautumnal parasite. Either the parasite possessed unusual virulence or the patient's resistance was very low. The algid form was due to the æstivoautumnal parasite. There were marked prostration, clouded intellect, and a cold, clammy skin. There was strong presumption that this form was preceded by other forms of malaria. The attacks were ushered in with chills, which were not so decisive as in other forms of malaria. The rise of temperature was not so great. The tongue was dry, thirst was great, and prostration was extremely profound. The brain remained clear until the end. There were choleralike diarrhœa, nausea, and vomiting, small and thready pulse, and scanty and high colored urine. The prognosis was very grave. In my cases the mortality was one hundred per cent. The treatment consisted in giving quinine hypodermically with supportive measures.

Dr. JOHN A. WITHERSPOON, of Nashville, said that the person who had never had malaria was very susceptible to it, and if he came into an intensely malarial district he was the only one likely to take algid malaria. Malaria could not be eradicated under four or five months' persistent treatment. Latent cases could not be cured while the patient was walking around the streets. In the algid form the patient was overwhelmed with toxæmia. Quinine hypodermically was useless. The only treatment was by intravenous injections of quinine. In giving quinine hypodermically we should give it deep. Malaria all over the southern country was growing less and less. The people that had latent malaria and lived in swampy districts were apt to get pernicious malaria.

Dr. JAMES B. McELROY, of Memphis, said that he had saved three or four patients with algid malaria by giving a hypodermoclysis of quinine.

The Value of Alimentary Lævulose in the Diagnosis of Hepatic Cirrhosis.—Dr. EDWIN H. GOODMAN, of Philadelphia, said that there was no test to aid us in diagnosing functional disturbances of the liver. Alimentary lævulose was constant in hepatic cirrhosis. It was useful in making the diagnosis between hepatic cirrhosis and passive congestion.

The Nature and Treatment of Anæmia.—Dr. S. P. BEEBE, of New York, said that in the idiopathic form of progressive pernicious anæmia the nitrogen metabolism was not in any way altered. As his patients improved the nitrogen metabolism was not altered. In the idiopathic form the patient should have good hygiene, fresh air, and an abundance of good food. These patients secreted very little hydrochloric acid, and this should be administered in large doses. Arsenic was useful. Iron had not been of any benefit. Arsenic should be given as Fowler's solution or hypodermically; more benefit was derived by giving it hypodermically.

Dr. ROCHESTER, of Buffalo, said that some patients improved and then had a relapse. One had five relapses and died in the sixth. Open air and beef juice had helped him. Arsenic was of benefit in some instances. Colonic irrigations, glycerin, and lemonade had no effect on the disease.

Dr. BEEBE said that arsenic and hydrochloric acid were not specifics, but some of these patients would improve with them in conjunction with fresh air. The patients did relapse, but the use of these drugs, if they needed them, aided very materially. It was possible to tide over some patients for a few months by the aid of transfusion.

The Work of a Cooperative Hydrotherapeutic Establishment.—Dr. JOSEPH H. PRATT, of Boston, said that we were trying to raise the standard of hydrotherapy. Most of our patients had been neurasthenics. Patients often left after the first or second treatment. The weakness and headache following the treatment were usually psychic. The treatments were regulated as to the pressure. After a number of treatments the weakness disappeared. A short stimulating treatment was given to warm the skin, followed by a cold application. In all neurasthenics he used general tonic measures. A gain in weight, with daily improvement, generally followed. Suggestion was a large element in the treatment.

Dr. LIGHTY, of Pittsburgh, said that this was a very useful aid to the physician, especially since trained physicians had taken it up. These patients could take the treatment better in an institution. Our watering places were not equipped.

SECTION IN SURGERY AND ANATOMY.

(Concluded from LXXXIX, p. 1222.)

Joint Infections.—Dr. JOHN B. MURPHY, of Chicago, said that diseases of the joints were so intimately connected with diseases of the bones that they should be considered together. The infection of joints was due to seropurulent or purulent fluid. The retention of products of infection under pressure caused rapid destruction of tissue, as of the endothelial lining in an inelastic capsule. Ankylosis was prevented by aspiration, extension, or render-

ing the joint sterile, and ankylosis could be prevented by not allowing the articular surfaces to rub together.

The Transperitoneal Operation for the Removal of Bladder Neoplasms.—Dr. E. S. JUDD, of Rochester, Minn., said that the first thing was to find out the location and extent of the neoplasm by cystoscopic examination. Every papilloma would in time become malignant.

A Radical Operation for Certain Forms of Hydrocele.—Dr. WILLARD BARTLETT, of St. Louis, said that in the treatment of hydrocele every particle of the excreting surface should be removed. The sac should be removed by blunt dissection, the small vessels ligated, and metal clips placed along the edges for four days. This operation took time, but seemed to guarantee against a return.

The Dilatation Treatment of Urethral Stricture.—Dr. V. C. PEDERSON, of New York, said that no patient with gonorrhoea should be discharged until dilatation of the urethra had been done and the urethra examined; and there was no one method of operation for stricture, as cases differed, and after cutting a stricture we should fill the bladder full of water, and its discharge would wash out the urethra. Whalebone guides were dangerous when they were old, as they chipped.

Surgery of the Spleen.—Dr. W. J. MAYO, of Rochester, Minn., said that splenectomy had not been performed to any great extent. The spleen was an organ of internal secretion, associated with the adrenals and the pituitary body. The functions of the spleen was blood formation, with the bone marrow, and it was a destroyer of red blood cells and a filter in aiding the liver in metabolism. Removing the spleen left no serious surgical results. The spleen was the largest of the ductless glands, weighing about 200 grammes, the splenic border being at the lower margin of the ribs. Splenectomy was done in cases of leucæmia and splenic anæmia, and in splenectomy the pedicle should be grasped near the pancreas. The danger in this operation was from hæmorrhage.

Dr. A. J. OCHSNER, of Chicago, said that when there was no marked splenic leucæmia it was as safe to operate as for a fibroid of the uterus. Excessive hæmorrhage showed a tendency to splenic leucæmia.

Some Therapeutic Possibilities of Cholecystostomy.—Dr. L. L. MCARTHUR, of Chicago, said that he washed the duodenum out with a normal salt solution in cases of duodenal and gastric ulcers.

Dr. A. F. JONAS, of Omaha, said that the products of disease were carried from the lymph channels, bile ducts, or duodenum, and the bile must be returned to its normal fluidity by the use of the normal salt solution.

Dr. W. L. RODMAN, of Philadelphia, said that he would not make temporary drainage, but would keep up the drainage as in appendicostomy in cases of diarrhoea and dysentery.

The Treatment of the Appendix Stump.—Dr. VAN BUREN KNOTT, of Sioux City, Iowa, said that in operations on the appendix stump we should ligate the mesoappendix with No. 1 catgut and ligate the appendix with No. 2 chromicized catgut.

The Mortality of Appendicitis.—Dr. LE GRAND GUERRY, of Colombia, S. C., said that, in 545 ap-

pendectomies, only two patients had died, a mortality of only 0.3 per cent. In cases not seen until the third or fourth day we should wait until a localized abscess had formed and then open and drain, and later do a secondary operation. The method used should be governed by the condition of the patient.

Causes of Death in Acute Intestinal Obstruction and Kindred Conditions.—Dr. J. W. D. MAURY said that experiments should be done by the surgeons themselves instead of depending on others. Intestinal obstruction caused death when it occurred in the upper part of the gut, when it was unable to perform its physiological function. Biliary and pancreatic conditions were identical and found their origin in the duodenum. Death had been prevented (in dogs) by opening the duodenum, introducing a stomach tube and cleaning out the tract.

Sarcoma of the Tonsil.—Dr. JOHN E. SUMMERS, Jr., of Omaha, said that sarcoma of the tonsil was rare, and that he had had a case affecting the left tonsil, which had extended to the pharynx. The patient was etherized, and the external carotid artery ligated, and a prophylactic tracheotomy performed, and the tumor excised. This patient was operated upon twice, and was not cured. Operations on the tonsil could be done through the mouth or by an incision into the neck. The prognosis depended on an early diagnosis, on complete removal of the lobes of the tonsil affected, and on whether or not the neoplasm had spread to the palate or fauces.

The Radical Treatment of Epithelioma of the Lip.—Dr. J. C. STEWART, of Minneapolis, said that an epithelioma of the lip should be removed before the involvement of the lymphatics of the neck had taken place, and the incision should be made well into the new tissue to prevent recurrence. Nine tenths of the operations for epithelioma of the lip were performed by the old V shaped incision, and there was about twenty-five per cent. of recurrences. The textbooks stated that when the glands of the neck were involved they must be dissected out; and every epithelioma of the lip should be subjected to a radical operation, and then the percentage of recurrences would be less than ten per cent. He made a plea that these patients be operated upon before there was lymphatic involvement. In operating on epithelioma he made a skin incision from one angle of the jaw to the other, and reflected the skin back to the thyroid, and then dissected out the submaxillary and other glands and lymphatics of the neck. The incision was made three eighths of an inch on either side of the cancer, so as to be in healthy tissue. The wound was sewed up with silk-worm gut, a flap being carried over from the cheek when necessary. If a complete operation was done there should be no recurrence. Local removal of the cancer by the V shaped incision should not be done, for the radical operation was the only way to get good results surgically, and in recurrent cases the patient should be operated upon again and given the benefit of a probable cure.

Method of Procedure in Mammary Neoplasms of Doubtful Nature.—Dr. W. L. RODMAN, of Philadelphia, said that the exploratory incision in mammary neoplasms should be condemned. If an exploratory incision was made, and a section was

taken for examination, the wound should be seared with a hot iron; a report by the frozen section method could be had in ten minutes; and when an incision had been made, followed by a complete operation, no bad results occurred. Frozen section work was not accurate.

The Radical Operation in Mammary Cancer.—Dr. J. N. JACKSON, of Kansas City, Mo., said that in operating on cancer of the breast the flap should always be wrapped in normal salt solution to prevent an implantation of the germ. By making the skin flap so that it could be drawn to the axilla, we did away with the axillary fossæ and protected the nerves and arteries. The pectoralis major and minor muscles were both removed. This method produced no œdema of the arm, no restraining band, and gave better function. The flap made a protection for the chest wall, requiring no skin grafting. There was no compromise in the removal of the cancerous tissue. All the vessels were ligated at their origin, preventing hæmorrhage, and the annoyance of the use of so many hæmostats. The lymphatics and the glands of the axilla were removed. As soon as the breast was removed the wound was ready to be closed.

Letters to the Editor.

DOUBLE UTERUS.

2011 N. Sixth Street,
HARRISBURG, Pa., August 16, 1909.

To the Editor:

Reading Dr. J. A. Campbell's report of An Interesting Case of Double Uterus in last week's issue of the *Journal*, it may be of some interest to report my "find" in an obstetrical case. The patient was thirty-five and primipara. In making a vaginal examination I found a septum. Introducing my fingers on the left side, I was unable to feel the presenting head, but by introducing my fingers on the right side of the septum I easily felt the child's head. I was obliged to use instruments. The placenta was adherent. Introducing my hand into the uterus, I was unable to find any placenta, being able to freely sweep my hand around the fundus. Withdrawing my hand and introducing it on the left side of the septum, I found the placenta in the uterus, and easily extracted it. The mother and child did well.

FRANK D. KILGORE.

Book Notices

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Sanitation and Sanitary Engineering. By WILLIAM PAUL GERHARD, C. E., Consulting Engineer for Hydraulic and Sanitary Works; Member of the American Public Health Association, etc. Second Revised and Enlarged Edition of *Sanitary Engineering*. New York: Published by the Author, 1909. Pp. vi-174.

The subject discussed in these pages was, remarks the author, up to within a few years comparatively unknown. It is one of the recent

branches of civil engineering, which profession has been defined as the art of directing the great source of power in nature for the use and convenience of man. The author speaks of the profession and its practice, the work of the sanitary engineer in time of epidemics, war, and certain calamities in civic life. He then gives a review of sanitation during the last half century, describes sanitation in New York, and as a contrast sanitation in Russia. It is a very interesting and instructive book.

Sammlung klinischer Abhandlungen über Pathologie und Therapie der Stoffwechsel und Ernährungsstörungen. Herausgegeben von Professor Dr. CARL VON NOORDEN. 7. und 8. Heft. Ueber die Behandlung einiger wichtigen Stoffwechselstörungen (Hungerzustand, Mastkuren, Entfettungskuren, Gicht). Von Professor Dr. CARL VON NOORDEN. Berlin: August Hirschwald, 1909. Pp. viii-106.

This book contains four lectures which von Noorden read at a postgraduate course in Vienna in May, 1908. In the first lecture the author speaks of changes in metabolism during hunger or underfeeding; the second lecture takes up forced feeding (*Mastkur*); the third, the reduction of obesity; and the fourth, gout, uric acid deposits, and their treatment. Professor von Noorden has been an authority on these questions for a number of years. His views will therefore be read with a great deal of attention.

Pure Milk and the Public Health. A Manual of Milk and Dairy Inspection. By ACHIBALD ROBINSON WARD, B. S. A., D. V. M., Assistant Professor of Bacteriology and Director of the State Hygienic Laboratory, University of California, Berkeley, California. With Two Chapters by MYER EDWARD JAFFA, M. S., Professor of Nutrition and Director of the State Food and Drug Laboratory, University of California. With Seventeen Illustrations. Ithaca: Taylor & Carpenter, 1909. Pp. xii-218. (Price, \$2.)

This is a very timely book. The relation of milk to the public health, remarks the author, and the means employed to insure a safe milk supply, are subjects of varied aspects. The proper control of the milk supply requires the services of the bacteriologist, chemist, physician, veterinarian, health officer, and dairyman. The book will be therefore of interest to all these men.

It is divided into eleven chapters, to each of which is added a bibliography, and the subjects treated are the contamination of milk, changes in milk caused by bacteria, epidemic diseases transmitted by milk, bovine tuberculosis and other cattle diseases, municipal sanitary control of milk, pasteurization of milk, microscopical tests of milk, bacteriological examination of milk, certified milk, the analysis of milk, and adulteration of milk. An appendix contains the dairy ordinance of Berkeley, Cal., the Chicago tuberculin test ordinance, the Duluth milk ordinance, a blank for reporting the existence of infectious diseases, and a poster for dairy barns. The index is well arranged.

In Chapter VI the author speaks of pasteurization of milk. He defines it as "a generic term referring to various processes of heating milk, followed by cooling. The temperatures involved vary from 140° to 185° F., and the length of time of exposure to these temperatures varies from a few seconds to thirty minutes;" while sterilization he defines as "a term frequently used in the discussion of the subject of heated milk, which properly refers to a process by which all bacteria and their

spores are killed by heat. This in connection with the preservation of milk involves an exposure to heat above the boiling point. It is employed in the preservation of canned milk and never in connection with ordinary market milk." The author then cites the sanitary code of the boards of health of New York and of Chicago referring to pasteurization. The impression the reader will receive from this chapter is that the question of sterilization and pasteurization is still an unsettled one.

L'Évolution psychique de l'enfant. Par le Docteur HENRI BOUQUET. Paris: Bloud & Cie., 1909. Pp. iv-109.

The study of the psychology of the child is beset with peculiar difficulty. While in the adult the invaluable assistance afforded by introspection, by self observation, is at the command of the investigator, no such resource is available in the case of the child, from whom, indeed, data thus derived from consciousness are entirely lacking. Psychology, in so far as it concerns the child, is evidently largely if not entirely beholden to observation and deduction, these being supplemented as far as may be by adroit experimentation. In the brief memoirs of Dr. Bouquet the psychical evolution of the child is very well elucidated. Birth, the development of the senses, locomotion, and language are gone over in the first four chapters; while infantile psychology, comprising memory, habit, pain and pleasure, fear, imitation, imagination, the true and the beautiful, and the rise of the moral sentiments, are discussed in a thoroughly satisfactory manner in the fifth and concluding chapter, which includes within its scope more than half the volume. This is a book which may be read with entertainment and profit, not only by physicians, but by pedagogues who are bent upon acquiring something better than a superficial acquaintance with the minds of the children with whose upbringing they are so vitally concerned.

The Theory and Practice of Infant Feeding, with Notes on Development. By HENRY DWIGHT CHAPIN, A. M., M. D., Professor of Diseases of Children at the New York Postgraduate Medical School and Hospital; Attending Physician to the Postgraduate, Willard Parker, and Riverside Hospitals; Consulting Physician to Randall's Island Hospital and to St. Agnes's Hospital, White Plains. Third Edition, Revised. With numerous illustrations. New York: William Wood & Co., 1909. Pp. xiii-350.

Previous editions of this admirable work have been reviewed in these pages. Since the second edition appeared, five years ago, great advances have been made in both the science and art of infant feeding. Dr. Chapin's book is unique in that it was the first extended work which did not make the superficial chemical composition of mother's milk the starting point. In the first edition he recognized the fact that there was vastly more to artificial feeding than in making up for the quantitative difference between cow's milk and breast milk. It assumed, what is becoming to be seen more and more clearly, that the infant was subject to the general laws of animal life. Biology must be considered as well as chemistry in the preparation of the infant's food. The successful feeding of any animal must be based upon the natural principle that its food must be adapted to its own digestive apparatus. Dr. Chapin was among the first to point out that one function of the milk of each animal was to

develop the digestive tract of the young so that it might be adapted to the particular type of food upon which it was to subsist in adult life.

In the present edition the chapters upon practical feeding have been revised. Sections on the principle of top milks and the standardizing of gruels have been added. Since the first edition of this book, the importance of treating the subject of infant feeding from the standpoint of biology has become more and more apparent. Much is due to Dr. Chapin for his clear presentation of these principles in the three editions of his book. Although radical in some of its teaching, it has been from the first a work which could not be ignored, and it has had a marked influence upon the method of presenting the subject of infant feeding both in literature and in the class room. It is a book which no student of infant feeding can safely leave unread.

Maladies du crâne et de l'encéphale. XIII. Par M. AUVRAY, professeur agrégé à la Faculté de médecine de Paris, chirurgien des hôpitaux. Avec 130 figures intercalées dans le texte. Paris: J. B. Baillière et fils, 1909. Pp. 508.

In this volume by Professor Auvery there are treated in great detail the many important problems in cerebral disease and lesions of the cranium. The marked advances made in recent years in this department of surgery have made necessary a restatement, and the author has performed his task well, evincing a wide familiarity with the literature of his subject. The American reader will be gratified to note the recognition accorded in an authoritative French treatise to the work of Starr, of New York, and Cushing, of Baltimore. There are comprehensive chapters on cerebral localization, the different types of fracture, solid and vascular neoplasms, abscess, osteomyelitis, meningitis, the important complications incident to mastoid and middle ear disease, and the congenital anomalies of the brain and skull. The illustrations have been carefully prepared and add much interest to the text.

Traité de l'artério-sclérose. Par le Docteur O. JOSUÉ, médecin des hôpitaux de Paris. Préface de M. le Professeur à la Faculté de Médecine de Paris. Avec 20 figures noires et coloriées. Paris: J. B. Baillière et fils, 1909. Pp. xii-404.

Publications on the subject of arteriosclerosis have been numerous in the last few years. Professional interest has doubtless been stimulated by the improvement in instruments of precision such as the sphygmomanometer and by the recognition of the fact that arterial degeneration is preeminently a disease of modern life. While much is being done to cope successfully with infectious diseases and lessen mortality in the earlier years of life, it is very generally felt that the high pressure conditions of city life, the immoderate use of alcoholic stimulants and tobacco, and impure foods, combined with worry and the increased demands which are everywhere made upon the individual to-day are factors which are producing earlier arterial degeneration and consequent premature senility. It is no uncommon thing to meet with well marked cases of atheromatous arteries in New York in men who are nearer the fourth than the fifth decade of life. This is in marked contrast to countries like Norway, where simple, patriarchal living is still practised, and where men in the

seventies and eighties not infrequently preserve the soft, elastic arteries of youth.

For the philosophical clinician arteriosclerosis is of the greatest interest on account of its vital relations to cardiac, renal, pulmonary, and cerebral disease. These relations have all been fully considered by Dr. Josué in his comprehensive treatise, along with the pathology, etiology, symptoms, diagnosis, and treatment of the various phases of arterial disease. Judicious advice is given on hygiene, diet, exercise, and hydrotherapeutics for the arteriosclerotic. More might have been added to advantage, perhaps, on the prophylaxis of a condition which, after all, is so little amenable to curative treatment. For the person past forty, one of the best measures for the prevention of arteriosclerosis is the habit of taking a sufficient annual vacation from his routine business or profession.

Neurasthénie et névroses. Leur guérison définitive en cure libre. Par Dr. PAUL ÉMILIE LEVY, ancien interne des hôpitaux de Paris. Paris: Felix Alcan, 1909. Pp. xxii-403.

The purpose of the author of this book would seem to be the airing of his views touching the value of educative methods in the treatment of certain nervous affections, and particularly neurasthenia. Incidentally, he has various criticisms to offer on the attempts of his scientific forbears to systematically deal with nervous derangements. Among those who are thus honored is Weir Mitchell, whose "rest cure" evokes from the author quite a volley of strictures. Another American neurologist, Leonard Corning, who has contributed copiously and with originality to the literature dealing with the practical management of these affections, seems to have escaped the author's critical attention. Marred by a certain repetitiousness and bearing in places not a few the dialectic evidence of the incorrigible theoretician, Dr. Levy's book may, nevertheless, be read with profit.

Le Hachich. Essai sur la psychologie des Paradis éphémères. Avec trois planches hors texte. Par RAYMOND MEUNIER, préparateur au laboratoire de psychologie pathologique de l'École des hautes-études (Asile de Villejuif). Paris: Bloud & Cie, 1909. Pp. 217.

Among the various toxic substances that have gained a foothold in therapeutics, there is, perhaps, not one around which tradition and imagination have woven such a gossamer of fable as the drug that forms the subject of this brochure. While not a little of the marvelous has shrunk away at the touch of investigation, enough of interest still remains to merit the attention of physicians, and alienists more especially, who, in western countries occasionally, and in the East more frequently, may be confronted by the pathological conditions arising from abuse of the drug. In the monograph before us the various preparations of cannabis indica, as well those empirically compounded in the Orient as those owing their being to the more sophisticated methods of modern chemistry, are thoroughly discussed. So far as therapeutics is concerned, the author confesses that the Oriental drugs have given him more satisfactory results than could be had from preparations obtainable in France. In any event, the well known capriciousness of the drug when applied in the management of mental affec-

tions, great or small, is always to be reckoned with.

Not the least interesting part of the book is that dealing with the insanity caused by abuse of the drug. Depictive force is given to this phase of the subject by several excellent illustrations.

Medicoliterary Notes.

The August *Red Book* is a remarkable number in containing no mention of a physician; there is no advice from any of our growing army of popular medical writers, nothing advising women how to become—we beg pardon, remain—beautiful. There is good reason to believe this issue unique in these respects.

The September *Cosmopolitan* contains an article, "prepared under the advice and suggestions" of Dr. Henry Koplik, on The Sacrifice of the Innocents. It cites some appalling cases of ignorance, superstition, and sullen indifference among the newly landed parents dwelling on the lower East Side of New York. In the serial *Virginia of the Air* Lanes, there is some fine descriptive writing of the aerial scenery viewed from the "aeronef." That is a better word than "psychotherapy" that now confronts us everywhere.

Charles Miller, in the August *National Magazine*, concludes his attack on his man of straw, The Doctor's Trust. The principal industry of this nefarious trust lies in diagnosing "appendicitis" and in removing the offending organ at outrageous prices. In Iowa, particularly, are the "slashing surgeons plentiful and well organized." Mr. Miller has dark suspicions as to the reasons for the silence of the newspapers, a large number of which are permitted to be used as "immunity bathtubs for surgical blunderers."

In *The Creevey Papers*, an amusing book of considerable historical interest, there is a letter from Dr. J. Currie, of Liverpool, to Thomas Creevey, under date of December 17, 1792, in which the following occurs: "I am, I assure you, deeply concerned to hear that you think so poorly of Dr. Tennant's health; and perfectly disturbed to think that he has had any trouble about my thermometers. The truth is, I wished to avail myself of his intuitive skill in framing an instrument free of all exception for taking heat in contagious diseases, where approach is hazardous. But since he left us . . . I have so far succeeded in constructing a sensible (? sensitive) instrument with Six's iron index as to answer my purpose." This is one of the earliest mentions of the clinical thermometer.

Miscellany.

An Italian Doctor's Impression of Surgeons and Surgery in the United States.—Dr. Andrea Majocchi, of Milan, passed some interesting remarks, reported in the *Corriere Sanitario*, May 30, 1909, on the impressions he had received during a visit to the United States, undertaken for the purpose of studying American surgical methods:

In his opinion the American surgeon lays more weight on being a skilled operator than on posing as a scientist,

and is a mediocre clinician. This does not apply to the leaders of the profession, such as Murphy, Ochsner, Cushing, and others. University training in the United States leaves much to be desired and requires reforming in many points. In the schools physics and chemistry are not taught, but literature, philosophy, and history are not represented. The medical schools are of all grades, and the teaching is done more by practical work in the laboratories and in the form of exercises, less theoretical lectures. It is an "intensive" education, and this exaggerated preference given to the practical side of the work has a damaging effect on scientific culture. Four years' training are too little, as in that time the mind has not had time to form that degree of mental education or that aptitude for research work that are required for a scientific career. He had never seen so many explorative laparotomies performed as in the United States. In one morning at the Presbyterian Hospital in Chicago no less than four were performed. This resorting to abdominal exploration is really a confession of ignorance, says Dr. Majocchi, on the part of the surgeon; the operator does not exhaust all the diagnostic resources at his disposal but finds it more convenient to stretch out his hand for the bistoury. The patient is here largely to blame, he is too impatient. The American has a great faith in modern surgery, and what he wants is to be quickly cured, and is ready to submit himself to an operation rather than undergo a tedious and long period of diagnostic measures. If the American surgeon is not a great scientist, he is at any rate a brilliant operator. He possesses audacity, an accomplished technique, great accuracy, an admirable precision in performing intestinal sutures. Dr. Majocchi then proceeds to give a full account of the brothers Mayo in Rochester and their institute, as well as methods of conducting the "business." He says: "The Mayos became the kings of surgery just as the Rockefellerers are the petroleum kings. This little township represents the Mecca of American surgeons. America is without doubt the country of strange things, the land of surprises, and amongst the wonders to be seen, for the surgeon the city of Rochester is the most interesting. Touching the question of hospitals, Majocchi does not consider that those of the United States embody the modern ideal of such an establishment, but in view of the very high value of land and local conditions they represent the best possible that is accomplishable. He remarks on the absence of separate wards, and instead of spreading laterally the American hospital is forced to extend upward, but there are plenty of verandas for fresh air and real hanging gardens on the roof. He explains the financial side of hospital work, the absence of State subsidies, and on the contrary the lavish charity displayed, and admirable spirit of organization. The American hospitals are magnificent buildings, he continues, and resemble those of the leading New York hotels, and the whole is beautifully appointed. Personally he is not in favor of this splendor in hospitals—operation rooms all in marble—as he holds it to strike a false note in a charitable institution. With what one patient costs to maintain daily in an American hospital (he quotes Mount Sinai Hospital, \$2.38) six patients can be maintained in the Ospedale Maggiore of Milan. The American is a megalomaniac, he does not wish to have little things, and as he exaggerates in the construction of his skyscrapers, so does he overstep all bounds in the fitting up of his hospitals. Such is his character. . . . My object has been to draw your attention to a country, which although still youthful, still full of defects, contains, however, new energies and stores of boldness and activity."

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the surgeon general, Public Health and Marine Hospital Service during the week ending August 20, 1909:

Places.	Date.	Cases. Deaths.
<i>Smallpox—United States.</i>		
Louisiana—New Orleans.....	July 31-Aug. 7.....	7.....
Montana—Butte.....	July 31-Aug. 7.....	7.....
Oklahoma—Oklahoma City.....	July 31-Aug. 7.....	7.....

Places.	Date.	Cases. Deaths.
<i>Smallpox Foreign.</i>		
Brazil—Bahia.....	June 11-25.....	8.....
Brazil—Rio de Janeiro.....	June 26-July 11.....	9.....
China—Amoy.....	July 3-10.....	79.....
China—Hongkong.....	June 19-July 3.....	7.....
Ecuador—Guayaquil.....	June 10-17.....	3.....
India—General.....	June 26-July 3.....	553.....
India—Bombay.....	June 29-July 6.....	23.....
India—Calcutta.....	June 19-26.....	48.....
India—Rangoon.....	June 19-29.....	33.....
Japan—Kobe.....	July 10-17.....	3.....
Siam—Bangkok.....	June 1-30.....	12.....
Venezuela—Caracas.....	July 17.....	2.....
Venezuela—Caracas.....	July 31.....	1.....
<i>Yellow Fever Foreign.</i>		
Brazil—Bahia.....	June 11-25.....	9.....
British Guiana—Suddie.....	July 23.....	1.....
<i>Cholera—Insular.</i>		
Philippine Islands—Manila.....	June 19-26.....	76.....
<i>Cholera—Foreign.</i>		
China—Amoy.....	July 3-10.....	25.....
India—Bombay.....	July 3-10.....	55.....
India—Calcutta.....	June 19-26.....	21.....
India—Rangoon.....	June 19-26.....	2.....
Russia—General, exclusive of St. Petersburg.....	July 23-30.....	349.....
Russia—St. Petersburg.....	July 23-30.....	390.....
<i>Plague—Foreign.</i>		
Brazil—Bahia.....	June 11-25.....	8.....
Brazil—Rio de Janeiro.....	July 4-11.....	1.....
China—Amoy.....	July 3-10.....	79.....
Ecuador—Guayaquil.....	June 10-17.....	3.....
India—General.....	June 26-July 3.....	553.....
India—Bombay.....	June 29-July 6.....	23.....
India—Calcutta.....	June 19-26.....	48.....
India—Rangoon.....	June 19-29.....	33.....
Japan—Kobe.....	July 10-17.....	3.....
Siam—Bangkok.....	June 1-30.....	12.....
Venezuela—Caracas.....	July 17.....	2.....
Venezuela—Caracas.....	July 31.....	1.....

Public Health and Marine Hospital Service

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 21, 1909:

DUNN, H. A., Passed Assistant Surgeon. Ordered to the Naval Proving Ground, Indian Head, Md.
 HENRY, R. B., Assistant Surgeon. Detached from the Naval Magazine, Iona Island, N. Y., and ordered to the Third Squadron of the Pacific Fleet.
 LEDBETTER, R. E., Surgeon. Detached from the Naval Academy and ordered to the Naval Station, Cavite, P. I.
 NOBLE, D. H., Assistant Surgeon. Detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the Third Squadron, Pacific Fleet, via the Maryland.
 ROBERTSON, G. E., Acting Assistant Surgeon. Ordered to duty at the Naval Hospital, Boston, Mass.
 SHAW, WILLIAM B., Pharmacist. Appointed a pharmacist from August 17, 1909.
 SINCLAIR, J. A. B., Assistant Surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and granted leave for two weeks.
 WEBB, U. R., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, Mare Island, Cal.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 21, 1909:

DRAKE, PERCY G., First Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Ethan Allen, Vermont, to Fort Leavenworth, Kansas, for temporary duty.
 EKWURZEL, George M., Captain, Medical Corps. Granted leave of absence for three months, to take effect upon his relief from duty in the Philippines Division.
 HOWARD, DEANE C., Major, Medical Corps. Granted two months' leave of absence, to take effect upon his arrival in the United States.
 JUENEMANN, GEORGE P., Captain, Medical Corps. Granted ten days' leave of absence.
 MORSE, ARTHUR W., Major, Medical Corps. Relieved from duty at the Presidio of Monterey, Cal., and ordered to the Philippine Islands for duty on October 5, 1909.

PARCE, ALEXANDER D., First Lieutenant, Medical Corps. Relieved from duty with Company C, Hospital Corps, Fort Niagara, N. Y., and ordered to the Philippine Islands for duty on October 5, 1909.

REYNOLDS, CHARLES R., Major, Medical Corps. Granted leave of absence for ten days.

ROBBINS, CHANDLER F., Major, Medical Corps. Granted leave of absence for one month.

RUSSELL, F. F., Major, Medical Corps. Ordered to proceed from Washington, D. C., to Fort Sill, Oklahoma, and return, on business connected with the Medical Department.

SCHMITTER, FERDINAND, First Lieutenant, Medical Corps. Granted leave of absence for four months, with permission to go beyond the sea.

SHILLOCK, PAUL, Major, Medical Corps. Relieved from treatment at the Army and Navy General Hospital, Hot Springs, Arkansas, and will return to his proper station.

SILER, JOSEPH F., Captain, Medical Department. Ordered to proceed from New York City to Peoria, Ill., and return, on business connected with the Medical Department.

TROTTER-TYLER, GEORGE, First Lieutenant, Medical Reserve Corps. Relieved from duty at Vancouver Barracks, Washington, and ordered to the Philippine Islands, on October 5, 1909.

WICKLINE, WILLIAM A., Captain, Medical Corps. Granted thirty days' leave of absence.

WILSON, JAMES A., First Lieutenant, Medical Corps. Relieved from duty with Company G, Hospital Corps, Fort Niagara, N. Y., and ordered to the Philippine Islands for duty on October 5, 1909.

The following named medical officers have been appointed members of a board of officers of the Medical Corps, to meet at the Army Medical Museum Building in Washington, D. C., at the call of the senior member of the board, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Corps of the Army: Major Francis A. Winter, Major Carl R. Darnall, and Captain Henry F. Pipes.

Navy Intelligence:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 18, 1909:

BANKS, CHARLES E., Surgeon. Granted five days' leave en route to station.

BEAN, L. C., Acting Assistant Surgeon. Granted five days' leave of absence from August 15, 1909.

BELL, J. M., Pharmacist. Granted seven days' leave of absence from August 7, 1909, under paragraph 210, Service Regulations.

CHAPIN, C. W., Assistant Surgeon. Directed to proceed to Portland, Ore., upon special temporary duty.

COBB, J. O., Surgeon. Granted ten days' leave of absence from August 15, 1909.

CROSS, I. J., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 9, 1909, with pay, and thirteen days from October 9, 1909, without pay.

EEERSLOPE, R. E., Passed Assistant Surgeon. Granted two months' leave of absence from August 12, 1909.

FABIAN, J. J., Acting Assistant Surgeon. Granted six days' leave of absence from August 2, 1909, under paragraph 210, Service Regulations.

GAHN, HENRY, Pharmacist. Granted one day's leave of absence, August 6, 1909, under paragraph 210, Service Regulations.

GAHN, HENRY, Pharmacist. Granted three days' leave of absence from August 16, 1909, under paragraph 210, Service Regulations.

GLENNAN, A. H., Assistant Surgeon General. Leave granted July 17, 1909, for twenty-eight days from July 20, 1909, amended to read twenty-five days from July 20, 1909.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Granted one day's leave of absence en route to station.

HAMILTON, H. J., Acting Assistant Surgeon. Granted two days' leave of absence from August 16, 1909.

LAVINDER, C. H., Passed Assistant Surgeon. Directed to proceed to Peoria, Ill., upon special temporary duty.

McCoy, G. W., Passed Assistant Surgeon. Directed to make certain inspection trips in Contra Costa and adjacent counties in California upon special temporary duty.

McKEON, F. H., Passed Assistant Surgeon. Granted four days' leave of absence from June 29, 1909, under paragraph 191, Service Regulations.

PARKER, HERMAN B., Passed Assistant Surgeon. Granted fifteen days' leave of absence from August 16, 1909.

RAMUS, CARL, Passed Assistant Surgeon. Granted one day's leave of absence, July 11, 1909, under paragraph 191, Service Regulations.

STONER, GEORGE W., Surgeon. Granted eleven days' leave of absence from August 17, 1909.

TOWNSEND, W., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 8, 1909.

WALKLEY, W. S., Acting Assistant Surgeon. Granted four days' leave of absence from August 25, 1909.

WERTENBAKER, C. P., Surgeon. Granted one month's leave of absence from August 16, 1909.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., August 16, 1909, for the purpose of making a physical examination of two officers of the Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwyn, recorder.

Births, Marriages, and Deaths.

Born.

HOLCOMB.—In Norfolk, Virginia, on Wednesday, August 18th, to Surgeon Richmond C. Holcomb, United States Navy, and Mrs. Holcomb, a son.

Married.

DANE—COOKSEY.—In Mill Brook, New York, on Thursday, August 12th, Dr. John Dane, of Boston, and Miss Eunice Cooksey.

MCGRATH—DONAHUE.—In Philadelphia, on Wednesday, August 18th, Dr. Frank A. McGrath and Miss Margaret M. Donahue.

O'CROWLEY—FURMAN.—In Newark, New Jersey, on Saturday, August 14th, Dr. C. R. O'Crowley and Miss Mary A. Furman.

Died.

BACCUS.—In Chicago, on Tuesday, August 10th, Dr. Victor J. Baccus, aged thirty-eight years.

BURNS.—In Cleveland, Ohio, on Tuesday, August 17th, Dr. J. Emmet Burns, aged sixty years.

FORRESTER.—In Louisville, Kentucky, on Sunday, August 15th, Dr. William Forrester, aged seventy-two years.

FULK.—In New Kingston, Pennsylvania, on Monday, August 9th, Dr. Levi Fulk.

GUMAER.—In Santa Monica, California, on Sunday, August 1st, Dr. Adelbert G. Gumaer, of Buffalo, New York, aged fifty-nine years.

HAMILL.—In Baltimore, Maryland, on Friday, August 13th, Dr. George W. Hamill.

MARTIN.—In New York, on Sunday, August 15th, Dr. Benjamin E. Martin, aged seventy years.

MORAN.—In Detroit, Michigan, on Thursday, August 12th, Dr. George Moran, aged forty-one years.

OLDHAM.—In New Castle, Kentucky, on Thursday, August 12th, Dr. Samuel P. Oldham, aged fifty-three years.

ROBINSON.—In Auburn, New York, on Saturday, August 21st, Dr. Robert Walker Robinson, aged forty-nine years.

ROYSTER.—In Smith Mills, Kentucky, on Saturday, August 14th, Dr. L. C. Royster.

SHAW.—In Salem, Oregon, on Friday, August 6th, Dr. John Shaw.

STEVENSON.—In Carnegie, Pennsylvania, on Friday, August 6th, Dr. T. Charles Stevenson, aged forty-two years.

STEVENSON.—In Chicago, on Saturday, August 14th, Dr. Sarah H. Stevenson, aged sixty-six years.

SWEENEY.—In Newark, New Jersey, on Friday, August 20th, Dr. Daniel L. Sweeney, aged sixty-one years.

WHERRELL.—In Kansas City, Kansas, on Thursday, August 12th, Dr. John W. Wherrell, aged sixty-six years.

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WHOLE NO. 1605.

Original Communications.

THE VALUE OF THE TEST MEAL IN GASTRIC DIAGNOSIS.

By CHRISTOPHER GRAHAM, M. D.,
Rochester, Minn.,

and DONALD GUTHRIE, M. D.,
Rochester, Minn.

Stomach analyses have misled, and may be misleading, trusting and otherwise trusty physicians. The presence or absence of hydrochloric acid in the stomach contents has been often considered too significant. This special phase of gastric analysis has had, or should have had, its day of security. It is certainly misleading if interpreted independently of the symptoms resting on a carefully developed history. We do not gainsay that the amount of free hydrochloric acid has pointings. It varies at different times and with different test meals; so also will it vary at different ages. Other conditions equal, the older the patient the less will be the supply or need of hydrochloric acid; therefore our older patients who come to operation show naturally a lessened free hydrochloric acid test, not perhaps because of great area involved in the ulcerous process, not because of pathological situation, neither by reason of great obstruction nor malignant change, but partly, at least, the natural outcome of age or dissipated fibrosis.

General systemic or local disease of the stomach does modify both the quantity and quality of gastric acid secretions, and we must not overlook wholly this varying acid state as an aid in diagnosis.

In pernicious anemia we have emaciation, pallor, weakness, loss of appetite, perhaps severe vomiting accompanied by blood, gas and distress following food, and at test meal very low, and usually no free hydrochloric acid. Shall we diagnose malignant disease of the stomach?

In Bright's disease when the heart has lost its compensation in a measure, and the retarded circulation reacts on the stomach; or again in those more chronic cases when the pathology of the kidney and the condition of the circulation are more difficult to define, when the stomach symptoms predominate and the test meal shows no free acids, shall we diagnose primary stomach trouble?

There are times when the patient with pulmonary tuberculosis gives only stomach symptoms, and the test meal yields no free hydrochloric acid, yet we would hardly pardon a diagnosis of stomach trouble.

In all general debilitating diseases we find this reduction of acids. In the drunkard we may find pernicious stomach symptoms and no free acids. In cardiospasm, in diverticuli, and in oesophageal obstruction we may be misled on examining fluid vomited or drawn from these dilated sacs, when supposedly from the stomach.

Hyperchlorhydria is seen in (1) oversecretion when the total acids reach one hundred and over. In some of these patients hydrochloric acid may be high, and in others just well above normal. Again the total acid runs slightly lower (seventy to ninety) while hydrochloric acid reaches sixty or more. There are these two conditions,—oversecretion and hyperchlorhydria and we rather often find them associated. The condition, when surgical, will be diagnosed when real epigastric pain is present and food remnants are found at test meal, thus showing loss of motor power, pyloric spasm, or ulcer areas. (2) Again we find hyperchlorhydria in stomach neurosis; and (3) in chronic appendicitis and gallstone disease which may cause stomach symptoms due to pyloric spasm.

In ulcer of the stomach and duodenum, we do find high hydrochloric acid contents, as a rule, early in the history—as true also, in advanced gastric carcinoma we rarely find free hydrochloric acid. In chronic ulcer we may find lessened or absent hydrochloric acid; especially is this found among older patients with marked chronic obstruction, or in advanced conditions with large areas of destruction and in hourglass stomachs. We may find, we do find, in carcinoma of the stomach acids quite normal associated with an advanced pathologic condition.

If we were to give in order of diagnostic value the findings at test meal the summary would run about like this: Division A. 1, Food remnants; 2, quantity of secretion rather than quality (with or without food remnants); 3, location of tumor; 4, size of stomach; 5, position of stomach. Division B. 1, Acid contents; 2, blood; 3, bacteria.

In Division A the findings relate more or less to the one great factor in gastric pathology—the motor power of the stomach. If the power of the stomach to empty itself holds good in spite of pathological conditions, nutrition does not fail and stomach symptoms are at a minimum. Quantity and quality of secretion may be functional, but if remnants are found at test meal we can justly look to obstruction only as the cause of the disturbed secretion. In division B, blood and bacterial findings are placed last. In the first place because three quarters of

all ulcers must be diagnosticated without blood findings and bacteria add little of value. In cancer the two are more important, yet here one third of the cancers show no blood findings and the bacterial acids are of much less value than blood.

The value of acid findings is not to be despised. It has its place and may be the deciding factor. We repeat that the gastrologist must be careful lest he place too much stress on gastric findings. First get an accurate history of the stomach symptoms and the development of the disease, and with this as a basis interpret the test meal findings.

Test meals are never given in cases of gastric ulcer with recent hæmorrhage, or where there is any serious heart embarrassment. A patient requiring a stomach examination is instructed to eat the night before as hearty a meal as possible, without causing too much distress, of meat, potatoes, rice, and a few dried raisins, and to report at the hospital at seven o'clock the next morning without breakfast. Here the usual Ewald test meal is given, and one hour later the contents are withdrawn. Male patients remove coat, vest, drop suspenders, and loosen up trousers. Female patients are prepared by a nurse who loosens all waist bands and removes the corset. All false teeth are removed and eye glasses taken off. The patient sits erect in a chair with a rubber apron on to protect the clothing. The tube is quickly inserted into the stomach without the use of any local anesthetic or lubricant, save warm water. The patient is then told to bend forward and to assist in obtaining the contents by upward pressure over the abdomen with both hands. When the contents are withdrawn the stomach is washed out with a pint or more of warm water, and it is in the contents and these washings that food remnants are looked for. The patient then rises with the tube still in the stomach, takes a few steps to an examining table and is placed in a recumbent position. The funnel of the stomach tube is then removed, and the end of a Davidson bulb syringe is inserted in the tube. The stomach is then outlined by auscultatory inflation, the examiner listening over the stomach area with a stethoscope, while an assistant inflates the stomach. The note heard directly over the stomach caused by each pump of the syringe is a sharp, clear, metallic click of high pitch, while that heard away from the stomach area is a muffled, distant note of lower pitch. In this way, with practice, it is easy to find the limits of the greater and lesser curvature. Inflation is never carried on to a point that causes pain. If the outline is indefinite to the examiner, the syringe is withdrawn and the air expelled from the stomach by direct pressure—the stomach is reinflated. This is one of the advantages of this method over others. While inflated the stomach is carefully palpated for tumors or ridges, and it sometimes happens that tumors missed in the primary examination are found on inflation. The inflated air is always expelled by pressure before the tube is withdrawn—another advantage of this over other methods. The outline of the stomach is then marked on the patient with an indelible pencil.

The contents are examined grossly for food remnants, then filtered, and tests are made for the acids and blood. For free hydrochloric acid we use Töpfer's (thioflavimide) test; for total acidity,

the phenolphthalein test; for combined acids, the alazarin test. Uffelmann's phenol and tincture of ferric chloride is used for lactic acid. Volatile fatty acids are tested for by heating some of the filtrate in a test tube in the presence of blue litmus paper. The guaiac test is made for blood. If there has been much gagging or straining and small amounts of gross blood appear in the washings it is designated as traumatic blood.

We have analyzed carefully the gastric findings in two hundred and fifty cases of ulcer of the stomach and duodenum and one hundred and fifty cases of carcinoma, which have all come to operation and the correctness of the diagnosis established. We have also included one hundred cases of pyloric spasm due to appendicitis or gallbladder disease—in another paper to follow this one, we hope to give the symptomatology and end results of operation in a large number of cases of pyloric spasm due to appendicitis. We have also included one hundred cases of stomach neurosis, and it is in this class alone that there is any question as to whether the diagnosis was correct or not. For comparison the stomach findings of twenty-five cases of pernicious anemia are also added.

ULCER OF STOMACH AND DUODENUM.

250 cases.

Free hydrochloric acid present in 237 cases; absent in 13 cases.

Total acidity—			
Below normal.	Normal. (40-60) 100 cases	Above normal.	(60-80) 67 cases
28 cases		113 cases	
		(85-100) 31 cases	
		(above 100) 5 cases	
		(40-60) 75 cases	
		(60-80) 26 cases	
		(above 80) 11 cases	
Blood present			49 cases
Lactic acid			53 cases
Food remnants			73 cases
Tumor			3 cases
Blood alone			10 cases
Blood and lactic acid			21 cases
Blood, lactic acid, and food remnants			12 cases
Blood and food			6 cases
Lactic acid alone			8 cases
Lactic acid and food remnants			12 cases
Food remnants without blood or lactic acid			43 cases
Pylorus or dilatation present			118 cases

We call attention to the fact that of three fourths of the cases of ulcer that come to the operating table the patients do not show the high acids as commonly thought to be the case. The average age of these patients was forty-five years, and the average duration of symptoms more than twelve years, both factors, age and chronicity tending to reduce the acidity. Young subjects with developing ulcers have high acid tests. We regard decided food remnants in the test meal as a surgical indication.

CANCER OF THE STOMACH.

70 cases.

Free hydrochloric acid present in	70 cases
Average age	48 years
Duration of symptom	4.5 years
Absent in	0 cases
Average age	54 years
Duration of symptom	9 years
Free hydrochloric acid present without blood, lactic acid, or food remnants in 24 cases	
Free hydrochloric acid present without blood, lactic acid, or food remnants in 46 cases; in 37 of these cases no palpable tumor present; 33 of these cases had palpable tumor present (blood alone 15 cases).	
Blood present in 80 cases; Blood and lactic acid, 26 cases; blood and food remnants, 15 cases; blood, lactic acid, and food remnants, 0 cases	
Lactic acid	11 cases
Lactic acid and food, 3 cases	
Food remnants present without blood or lactic acid in 15 cases.	
Palpable tumor present in 70 cases.	

From this summary it will be noted that a large number of cases of gastric cancer must be diagnosed

ticated independently of the test meal findings, yet, on the other hand, there are a few cases in which the subjective symptoms are indefinite, and where the test meal throws the first light upon the real pathological condition present.

The large percentage of free hydrochloric acid in this class of cases is explained by the fact that cancers of the stomach are diagnosed earlier and with less hesitation than in former years. We have been impressed with the frequency with which cancer develops upon old ulcer. The latest statistics from our laboratory show that seventy-one per cent. of the cancers of the stomach developed on an old ulcer base.

We now frequently send a patient to the operating table with a diagnosis of cancer on old ulcer, based solely on the history of chronic ulcer with recent exacerbation, loss of weight, weakness, etc. One should not wait for a palpable tumor, cachexia, and the typical textbook test meal.

PYLORIC SPASM.

(Due to appendicular or gallbladder disease, 100 cases.

Free hydrochloric acid present in 84 cases, absent in 16 cases.

Total acidity—

Below normal.	Normal.	Above normal.	
14 cases	35 cases	35 cases	(60-70) 18 cases
			(70-80) 10 cases
			(80-90) 6 cases
			(Above 90) 1 case

Free hydrochloric acid:

Below normal. Normal. Above normal.

7 cases 48 cases 29 cases
Blood alone, 15 cases.
Blood present in 32 cases: Blood and lactic acid, 8 cases; blood and food remnants, 3 cases; blood, lactic acid, and food remnants, 6 cases.

Lactic acid present in 24 cases: Lactic acid alone, 8 cases; lactic acid and food remnants, 2 cases.

Food remnants present alone in 20 cases.

Food remnants present alone in 4 cases.

Prolapse or dilatation present in 58 cases.

The tests in these cases taken independently of the clinical symptoms vary little from those in ulcer and do not help us much in drawing any definite conclusions.

FUNCTIONAL NEUROSIS.

100 cases.

Free hydrochloric acid present in 95 cases, absent in 5 cases.

Total acidity—

Below normal.	Normal.	Above normal.	
5 cases	34 cases	61 cases	(60-80) 39 cases
			(80-90) 10 cases
			(90-100) 8 cases
			(Above 100) 4 cases

Blood present in 11 cases.

Lactic acid present in 14 cases.

Food remnants present in 3 cases.

Prolapse or dilatation present in 68 cases.

This summary gives the greatest hydrochloric acid showing, but lacks the force of surgical argument especially in food remnants, blood, and lactic acid. In the three cases food remnants were found only in small amounts. Our attention has often been directed to the ease with which these dilated and prolapsed stomachs empty themselves.

PERNICIOUS ANÆMIA.

25 cases.

No free hydrochloric acid in 24 cases; free hydrochloric acid present in 1 case.

Total acidity, 12.

Blood present in 10 cases.

Lactic acid present in 8 cases.

Blood and lactic acid present in 6 cases.

No food remnants present in any case.

Dilatation of the stomach present in 2 cases.

Apart from the food remnants these cases show a test very analogous to cancer.

In conclusion, we regard the test meal as having a place in gastric diagnosis, but we caution against its too liberal interpretation independent of the clinical history

TUBERCULOSIS AND CONGESTION.*

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I have been asked to speak tonight on tuberculosis and congestion. It would almost seem that the very title is sufficient to cover the subject, for with the present widespread knowledge of the causes of tuberculosis even the layman will always associate congestion with tuberculosis and tuberculosis with congestion. All I can possibly do tonight is to demonstrate to you again the dangers of overcrowding.

The places where people are obliged to live in the closest proximity, where they have the least fresh air and the least freedom of movement, are of course the prisons. It is a sad comment on our present state of civilization that our prisons are the most congested centers of population now in existence, and as a result the mortality from tuberculosis among prisoners is three times as high as that of the general population. It would, of course, be unjust to blame congestion alone for this high mortality; enforced idleness, the psychic depression and unhappy state of mind of the prisoners in general, and not infrequently the mingling of healthy with tuberculous prisoners, have, of course, also a share in this deplorably high death rate.

It is gratifying to note the efforts now being made in many of our prisons to segregate the tuberculous prisoners, and pay more attention to ventilation of cells and workshops.

The next highest mortality rate we have to note is among our free and honorable working classes who live in the crowded tenement districts of this and other cities. Those of you who have never visited these districts have but a vague idea of what it means to live year in and year out in the same environment of dense congestion. There is a peculiar odor which often greets us in entering these streets and which is intensified in entering the houses. We do not know how to define this odor peculiar to badly housed humanity. It is evidently due to the products of exhalation as yet undefined, and these products are toxic, that is to say poisonous. While the inmates of such houses may gradually have become accustomed to it, to the casual visitor these odors become nauseating. Some very prosaic people call this odoriferous exhalation the "smell of humanity" or the "smell of poverty." I do not quite like these names, for I do not think them either appropriate or just. There can be humanity without bad odors, and amidst poverty there can be the sweet atmosphere of cleanliness and purity. If the odor we perceive in our wanderings through those dark, dreary rooms and halls of the filthy tenement must have a name, let us call it the smell of ignorance and greed. It is the result of ignorance on the part of the poor housed there, who do not know the value of fresh air, sunlight, and the cleansing property of water—the trinity which, in combination, are the best antitoxines against those poisonous products. It is the

*Read by invitation before the Conference on Congestion and City Planning, held in New York, June 24, 1909; Dr. Frederick W. Loughran, President of the Bronx Borough Medical Society, presiding.

result of greed on the part of the owner of these tenements, for only the heartless landlord could tolerate such a condition of filth, foul air, and darkness as is characteristic of some of these houses.

Our Tenement House Department and Health Department have done heroic work to ameliorate conditions; but the main features of congestion can not be done away with by these departments, and tuberculosis continues to decimate the homes of our laboring population who are obliged to live in such environments. There must be a radical change in the housing and modes of living of the masses, otherwise we will never, never become master of the situation, never be able to combat tuberculosis, this disease of the masses more than any other.

Let me describe to you a recent visit which I made to one of these tenements. It was by no means one of the worst tenements and the people were not at all in poor circumstances. It was a family consisting of father, mother, two grown up sons, and a widowed daughter with two children. One of the sons was afflicted with pulmonary tuberculosis and was treated by a physician who had honored me by calling me in consultation. I was told that until recently the two brothers had slept in one bed, the father and the mother in the other bed in the same room. The room being small, the beds were only a few inches apart. Since the patient had had a hæmorrhage he occupied a bed alone and the father and the other son slept in the other bed, while the mother had moved to the dark little bedroom occupied by the daughter and her two children. The physician had given directions for the patient to expectorate in a spittoon or cloths which was of course wise and judicious, but he had failed to call the attention of the family to that source of infection coming from the droplets expelled during the so called dry cough. This droplet infection is to my mind particularly dangerous when people live in close proximity. The drying of tuberculous sputum lessens to a certain degree the virulence of the tubercle bacilli while the freshly ejected bacillus in the droplets is in its full virulence. Even if the patient is cautioned to hold his hand before his mouth during attacks of cough to prevent infection, he may still be a source of infection at night when he coughs in his sleep. To breathe the air impregnated with these droplets, or to sleep or be near enough so that they can reach one directly, is certainly to my mind one of the most fruitful sources of tuberculous infection.

Thus, you will not be surprised if I tell you that when I suggested to the family physician in attendance to examine the father and the son who had slept in such close proximity to the tuberculous invalid, he found them both infected and already with distinct tuberculous lesions. Of course, the foul, vitiated air which these people breathe has just as much to do with the rapid development of tuberculosis as the droplet infection. But if each individual in that family had had his own bedroom, or at least his own bed three or four feet away from the other so that the droplets could have fallen to the ground instead of reaching the person directly, the contagion might not have been so easy. It was congestion primarily and secondarily which was here re-

sponsible for the two additional cases of tuberculosis. That the mother escaped was a miracle, and that the daughter and her two children were as yet spared was probably due to the fact that they slept in different bedrooms, and the doctor had cautioned the young woman against the danger of infection.

Tuberculosis infections, as in the case of the two brothers and father, arising from sleeping in too close proximity to a coughing consumptive, are known by the hundreds and thousands to all physicians who have carefully searched for the causes of the origin of the disease.

After this need I say any more in favor of a crusade against congestion? To teach the people to keep the air fresh and pure in their living as well as in their working quarters, to keep their bedroom windows open at night, and report to a physician if they feel the well known early symptoms of tuberculosis, such as cough, getting tired easily, feeling hot and feverish in the afternoon or chilly in the morning, loss of flesh or change in disposition, becoming irritable, etc., will all tend to diminish tuberculosis, but it will help only to a certain degree. What we must do is to improve the living conditions of the masses. The air which they get in the crowded tenement districts is not pure enough, even if they keep their windows open, to make them strong, vigorous, and resistant to tuberculosis. Not until we insist upon lower buildings and wider streets, permitting more sunlight to enter our habitations, not until all our old tenement houses and particularly our murderous lung blocks are replaced by model tenement houses with roof gardens on each of them, not until we have interspaced even these model tenement houses by multiple parks and playgrounds, not until this fearful congestion which is now the curse of our civilization has been done away with, not until the suburbs of our large cities are utilized for individual homes of the masses, not until the child, while a child, will have time and chance to play outdoors without being obliged to make a playground of the overcrowded streets, not until our traffic facilities will enable the laborer to travel in comfort and with rapidity to his sanitary home, not until we have given him the opportunity to live modestly but decently in a home somewhat closer to nature than the dark, dreary tenement houses of our overcongested cities, will tuberculosis be a thing of the past. Not until we have given every laborer fresh, pure air to breathe, not only once a week as we have done heretofore and for which he had to leave his home and his workshop, but all the time. Not until even the humblest of workers and his family has a place which he calls "home—sweet home"—in short, not until we give him in return for his labors all to which he is entitled—God's fresh, pure air, the sunlight and the skies, the trees and the flowers, and a home worthy of a man's habitation, will we be able to contradict the words of the poet who said:

"God lent his creatures light and air,
And waters open to the skies,
Man locks them in a stifling lair,
And wonders why his brother dies."

10 WEST NINETY-FIFTH STREET.

TRUE *versus* FALSE OPOTHERAPY.*

By CHARLES E. DE M. SAJOUS, M. D., LL. D.,
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If our object to place pharmacology on a scientific footing is ever to be realized, we should insist, whenever an agent is to be tried therapeutically, upon a preliminary determination of its identity as a chemical body. Thus only will it be possible for us to establish its physiological action on a sure footing. In drug therapy, this important feature has been carried out to a considerable extent, and what we know of the physiological action of most agents derived from plant life has been acquired since their active principles have been isolated and made the basis of experimental and clinical study. Just as opium contains various principles—morphine, apomorphine, codeine, etc., so do animal extracts contain a multiplicity of substances, cellular and plasmatic, and also products of cellular metabolism capable of provoking physiological effects; but here very little effort has been made to isolate the truly useful principles. Hence the confusion and empiricism which has always surrounded the use of these agents. The purpose of this paper is to urge that an effort be made to correct this state of things. It is unquestionably true that we have among the twenty and odd animal extracts that have been proposed, a few at least which are capable of affording relief where no other class of agent will act—thyroid preparations in myxœdema and cretinism, and adrenal extractives in Addison's disease and hæmorrhage, for example. The adoption of a systematic line of study in the direction proposed would seem to me to facilitate the discovery of additional useful applications of these agents, or, at least, to give their use in practice a more rational basis.

The title of this paper refers to true and pseudo-animal extracts. By the "true" agents I mean those which can be used intelligently, that is with knowledge of the physiological effects produced, because their active principles are known. Thyroid extract belongs to this class, since we know that its action is due to the iodine its secretion contains in organic combination; adrenal preparations likewise are included because their active principles, whether epinephrin, suprarenalin, or adrenalin, are also known. Conversely, by "pseudo" agents, I mean those animal extracts that are used blindly, without knowledge of their components, which may number from five to twenty or more, in almost any disease related directly or remotely with the organ from which the extract is obtained. Thymus and mammary extracts can be cited as examples of these agents. They are classed under the caption of "pseudo" until rendered fit, by their sponsors, through chemical, pharmacological, and clinical researches, to be taken up by the profession as legitimate pharmaceutical agents.

That so desirable a task is not impossible of accomplishment may readily be shown. The time at my disposal will only enable me to refer to a few of the organic preparations available. I will select, therefore, those which besides the thyroid, parathyroid, and adrenal products, whose active agents are familiar to every one, the four which have stood

out most prominently in the history of opotherapy, the testicular, ovarian, renal, and pituitary extracts.

I am obliged, of course, to treat the whole question from the standpoint of my own views concerning the functions of the thyroid, and adrenal glands and those of the pituitary body. But I have every reason to believe that it is proper to do so. The six years that have elapsed since I first formulated them have only served to emphasize their strength. Moreover, it must be borne in mind that no other functions have been attributed to these organs by other investigators, either in this country or in Europe. The adrenal secretion has been shown by Oliver and Schäfer to raise the blood pressure, and by Langlois to destroy poisons; the thyroid secretion is known to promote growth and development and also to destroy poisons; the pituitary body to cause acromegaly and influence metabolism in some undetermined way; but all these phenomena cannot be characterized as physiological functions: They are but individual manifestations of some general rôle fulfilled by each of these organs in the economy. The acceptance of my views does not, therefore, entail the sacrifice of any other. For the time being at least, they are the only scientifically sustained conceptions of the actual rôle of these organs.

Another important feature is the distinction of true ductless glands, whose mission is to elaborate a secretion of physiological use to the body at large, from organs which have been credited with such functions on insufficient grounds. Perhaps the habit of requiring considerable evidence from many sources and directions before reaching a conclusion—contrary to the prevailing tendency among experimenters to base a conclusion upon very few facts—has rendered me too exacting, but I must confess that so far, I have not been able to recognize *true* internal secretions in more than three sets of organs, the thyroid, including its glandules, the parathyroids, the adrenals, and the pancreas. In these organs alone, has the secretion been identified at the seat of its formation, traced to the blood stream, and, through the blood to all tissues. This might be said to apply to the liver, owing to its glycogenic function and to the broadcast distribution of glycogen; but in accord with Claude Bernard's original view, physiologists very properly consider the formation of glycogen as "a temporary reserve supply of carbohydrate material that is laid up in the liver during digestion and is gradually made use of in the intervals between meals" (1). Glycogen, therefore, cannot be classed as an internal secretion.

Many other organs have been regarded as sources of internal secretions. A close analysis of the question, however, suggests that while the evidence in favor of this view is very meager, many facts tend to disprove it. Investigators who have contended that these and other structures are ductless glands, have, almost without exception, based their contention on the fact that extracts of these structures produce physiological effects. This accounts for the fact that practically every tissue, including muscles, nerves, lymphatic glands, and even ciliary body, nasal mucous membrane, the placenta, have been thought to produce an internal secretion. The weakness of such a plea is self evident. Almost any organic substance will in some way or other affect

*Read before the American Therapeutic Society, May 7, 1909.

the blood pressure, and when we consider that all tissues contain more or less nuclein, intermediate waste products, red and white corpuscles and many other substances capable each in its own way of evoking some sort of reaction when injected into animals, the actual value of such experiments is reduced to nil. If ever therapeutics is to be raised from the field of empiricism—a level which has caused it to lose the confidence of many of our ablest men—it will not be by such misleading laboratory experiments.

Granting then, at least until proof to the contrary is available, that the only really demonstrated internal secretions are those of the thyroid, adrenals, and pancreas, and that their therapeutic products are the only legitimate ones, because their active principles are known, I will proceed to show that others can be raised to the same standard by a study of their properties. A striking feature brought to light by this analysis of the four animal products which have—besides thyroid and adrenal preparations—held their own, is that their main active principle proved to be that of the adrenals.

Testicular Extracts. Spermin, as is well known, is the purest of testicular preparations. Before I had given any attention whatever to these agents, I had pointed out (2) that the adrenal secretion was carried to the pulmonary air cells, to take up the oxygen of the air therein, and become the albuminous (previously unidentified) constituent of the hæmoglobin, which through the intermediary of the red corpuscles, supplies oxygen to all the tissues. The evidence showed that it was an oxidizing body acting catalytically; that it resisted all temperatures up to, and even, boiling; that it was insoluble in ether and practically insoluble in absolute alcohol, and gave the guaiac, Florence, and other hæmin tests. Now, spermin not only raises the blood pressure, slows the heart and produces all other physiological effects peculiar to the adrenal principles, but its solubilities are the same; it gives the same tests; it resists boiling. Moreover, it is regarded in Europe as a powerful "oxidizing tonic" and has been found equally useful in disorders in which adrenal preparations had given good results. The inference that spermin consists mainly of the adrenal product, suggests that it should not be regarded as specific to the testes, but instead, a constituent of the blood at large; not only did this prove to be the case, but it was found in the blood of females as well as in that of males.

Ovarian Extract. Although ovarian preparations have not been studied as thoroughly, their dependence upon the adrenal principle for their activity is no less evident. Ovarian extract has been found to contain "an oxidizing ferment comparable to spermin" (3). Just as castration causes a decline of the temperature, so does removal of the ovaries; while both thermin and ovarin restore the temperature to normal. This corresponds with the influence on general oxidation I ascribe to the adrenal secretion. As is the case with the latter, ovarian preparations enhance metabolism and the excretion of phosphoric acid. Finally, the resemblance of the physiological effects of ovarian extract to those of adrenal preparations is striking. "Fresh ovarian extract," writes Wilcox (4), "is said, when injected in rabbits, to

raise the blood pressure, diminish the heart's action, and slow the respiration; and when administered to the human female, also to increase the arterial tension. In the castrated animal it is found to increase oxidation to something above the normal degree."

Besides this mutual relationship between the testicular ovarian and adrenal products, two suggestive facts assert themselves: Not only have Schäfer and others found that a close analogy exists between the interstitial cells of the testicles and ovaries with the corresponding cells of the adrenals, but all three sets of organs are derived from the Wolffian body.

Renal Extracts. The kidneys have been credited with an internal secretion, but no experimental work so far recorded justifies such a conclusion. There is, on the other hand, indirect testimony to the effect that, as in the organs just referred to, the adrenal principle is the main active agent. Batty Shaw (5) remarking that the favorable effects obtained from renal extracts are similar to those that "have been reported as a result of treatment by means of spermin and testicular extract" suggests that "possibly nephrine and other renal preparations provide a means of stimulating oxidation in general, the kidney merely sharing in this oxidation." The concordance of this opinion with my own view (1903) that the adrenal secretion is the constituent of the hæmoglobin molecule which carries on oxidation is self evident. The influence of renal extracts on oxidation is further shown by the observations of Brown-Séquard, Teissier, and Fränkel (6) that they increased the output of urea, phosphates, and uric acid, and by those of Brown-Séquard, Dromain, and de Pradel Bra (7), Mois (8), Bitzou (9), Dubois (10), and others which showed that they possessed marked antitoxic power. This also harmonizes with my views, since I have shown, with ample evidence to sustain this assertion, that the adrenal secretion is a basal factor in all immunizing processes—as its rôle in oxidation would normally suggest. Even, the morbid effects of exaggerated antitoxic activity which I ascribed to excessive doses is exemplified by the results in a case recorded by Layral (11), in which renal extract caused death from pernicious anemia, i. e., from hæmolysis.

Pituitary Extracts are active according to which of the two lobes of the pituitary is used to prepare them. Howell, Silvestri, Thacon, and others have found that extracts of the anterior lobe were practically inert, while those of the posterior proved quite active. Howell (12), states in this connection that they "cause a marked rise of blood pressure and slowing of the heart beat," remarking, moreover, that "these effects resemble in general those obtained from adrenal extracts, but differ in some details." When we take into account the wealth of this organ in nervous elements, deviations in minor effects are readily accounted for.

As previously stated, the adrenal principle is not destroyed by boiling. This was also observed to be the case with extracts of the pituitary lobe, by Schäfer and Herring (13). These physiologists also noted that they produced dilatation of the renal vessels, but this is a normal result of the vasoconstriction produced by them in the body at large owing to the action of the adrenal principle upon the vascular muscles. The renal capillaries, in keeping

with all others, being deprived of muscular elements, they are passively dilated by the blood compressed out, as it were, of the larger vessels and the kidneys are dilated.

The so called depressor effects that have been credited to pituitary extracts are as plainly due to an excess of the adrenal principle. Herring (14) noted that pituitary extract caused constriction of the peripheral arterioles. Interpreted from my viewpoint this means that the arterioles of the heart are also inordinately constricted, hence the acceleration of heart beats and other phenomena which to the clinician mean heart failure, and the resulting general vasodilation. As shown by the experiments of Garnier and Thaon (15), Conti and Curti (16), and others, the pressor precede the depressor effects, a fact which indicates that the latter are merely due to excessive dosage. This applies as well to the inhibitory effects on the pancreas recently recorded by Pemberton and Sweet (17). Finally, the clinical effects recorded, especially those on the cardiac disorders by Cyon, Rénon, and Delille (18), clearly indicate that they are due to the adrenal principle pituitary extracts contain. The resemblance of their action to that of adrenal extracts, noted by Howell, is explained, therefore; it is to the adrenal principle in the pituitary that extracts of this organ owe their activity.

All these facts seem to me to justify the inclusion of testicular, ovarian, renal, and pituitary extracts in the adrenal group of organic extracts.

I would add that the presence of the adrenal principle throughout the organism is no longer to be doubted. Besides its now familiar effects on the blood pressure by a direct action on the blood vessels, which necessitates its distribution broadcast, we have the fact that Mulon found it in the red corpuscles. Even the placental blood contains it. As a conservative pharmacologist, Dixon, wrote recently (19), referring to investigations by F. Taylor and himself: "We have shown that the human placenta contains a considerable amount of a substance which is . . . unaffected by boiling. This body has the property of powerfully constricting bloodvessels, of contracting the uterine muscle, of raising the blood pressure. . . . So far as we have been able to determine, this body has all the properties of adrenalin."

The adrenal principle being common to the entire organism, it would seem as if all organic extracts should owe their therapeutic activity to this constituent. But many facts go to show that the proportion of adrenal principle in certain organs—those forming part of the chromaffine system, for example—is far greater than in others, and moreover that they contain cellular elements that are not only similar to the secreting elements of the adrenals, but which are capable of adding to that received from the latter through the blood. This accounts for the fact that removal of the testicles or ovaries lowers the activity of the oxidation processes, though without destroying life itself as is the case when the adrenals are removed.

This does not mean, however, that all organic preparations owe what therapeutic efficiency they have shown mainly to the adrenal principle they contain. The majority of them probably do not. The recent introduction of an oily extract of brain

matter seems to have placed the use of this agent on a firmer basis. The phosphorus laden nucleins derived from brain substance would probably account for what therapeutic value it seems to show. Again, thymus extract has some claim to recognition in disorders which other remedies do not seem to affect. Here again, we have a tissue rich in nuclein and therefore in phosphorus. May we not have in these and other organic preparations, a means of introducing into the body phosphorus so bound up in organic combination that it can be far more readily taken up by our tissues than any preparation that our laboratories can produce? We must not lose sight of the fact that organotherapy affords, precisely in this direction, possibilities that nothing else in the realm of therapeutics can offer—a statement which applies as well to the opportunity they offer of introducing immunizing bodies directly into the blood, or of compensating for organs whose functions have become inadequate through local disease. But these advantages will only become available when the prevailing empirical use of animal extracts will have been rendered impossible through proper identification of those of their constituents which bring about beneficial effects, the natural precursor to a clear conception of their mode of action.

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2043 WALNUT STREET.

A BRIEF CONSIDERATION OF THE CONTAGIOUS THEORY OF TUBERCULOSIS.*

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It has been said that "theories are the mighty soap bubbles with which the grown up men of science amuse themselves. They often glitter as they rise but they soon break and scatter irretrievably the efforts which formed them."

So much has been said and written about tuberculosis, especially the possible transmission from person to person, that the public mind has already reached the limit of apprehension.

*Read before the Richmond Borough Branch of the Medical Association of Greater New York, June 2, 1909.

We have seen these unfortunate invalids ruthlessly pursued and in many instances made so wretched, by what seems a cruel system of espionage, that they have been forced to abandon comfortable homes and friends, and seek new localities in which they may be permitted to live undisturbed. I have not been able to discover any practical benefit from such procedure, except when these invalids may have succeeded in finding better climates or more agreeable surroundings than they left behind them.

It has been said, not without good reason, that there are three kinds of lies: "Plain lies, adorned lies, and statistics." We all know very well the facility with which statistics are adjusted to confirm any proposition, and how often they can be made to appear most convincing. There is no limit to the use which is made of statistical records erroneously prepared to prove whatever may be proposed by prejudiced minds. And so, when language is not found adequate to overcome opposition of one sort or another, figures, twisted to suit the particular case, are brought forward in the attempt to close the argument. Statistics, therefore, established on premises that are false cannot be otherwise than unreliable. Nevertheless we have such as these, often I regret to say, presented for our acceptance, and there are unfortunately many of us who are actually led to believe them genuine. Those of us who do not take the trouble to investigate for themselves are naturally inclined to believe that the juggled figures which we see before us correctly prove the case, not realizing that the dispenser of statistics will, of course, be disposed to magnify the importance of all records on his side of the controversy.

The declaration has been made several times that the mortality of consumption in a certain city was much lower as a result of the recording of cases, and the publicity given to the subject by the tuberculosis congresses in the last few years, but it must be apparent to all of us, especially to those who have given much attention to the subject, and who view it from a large clinical standpoint, that this explanation does not entirely account for the diminution in the death rate. Another side of this subject not generally referred to, but one having a most important bearing on this subject, is to be found in the voluntary removal of a great many phthisical subjects from the cities to remote localities which are thought to possess more favorable climatic surroundings.

The exodus from cities, however, is not wholly attributable to the desire for a better climate, but, no doubt, to that system of registration adopted in some of the larger cities, with its attendant official and officious intrusion for the ostensible purpose of instructing the invalid how to live. In many instances this has been an unendurable annoyance, and one from which the unhappy sufferer endeavors to escape by a change of residence. While in former years only those who could afford to do so emigrated to places offering climatic advantages, this migration has continued to increase immensely within the past few years among all classes. I know that there are several other causes beside the ones mentioned for this migration, but I also have positive knowledge of instances where the sole impelling

motive to move was occasioned by the wish to get beyond the annoyance of official supervision. Many of those patients with their families settling in other communities naturally balance the topographical census on the side of the afflicted, and also serve to increase the mortality record in these localities, while at the same time lowering it in the cities from which they departed. The first condition is referred to by the statistician, who wishes to support the contagious theory, in order to prove that the affection has spread in these localities of the "finest climates where few cases were previously known to exist" as the result of contagion, rendering such places undesirable it is said on account of the prevalence of consumption there; and the second condition is offered to support the assertion that the registration of the cases and the sanitary rules formulated and designed to prevent contagion have resulted in the development of fewer cases, and also in a much lower death rate from tuberculosis in the places abandoned.

Both of these assertions are not free from criticism, and the statistics adduced to substantiate them have a very different significance to my mind than the one which has been advanced, serving rather to indicate an addition to the tuberculous colony elsewhere, by the new arrivals seeking with their families, better climatic surroundings, and a consequent proportionate decrease results in cases and in deaths in the localities of their first residence. The fact of such emigration changes, therefore, the balance of cases from one place to another.

Dr. Lawrence Flick, an ardent supporter of the theory of the contagiousness of consumption, has cited as a logical and most convincing proof, that consumptives did not exist in some countries and among some peoples until it was introduced from without, and brings history to his aid in the following words: "Prior to the advent of the white man and especially the Englishman among American Indians, consumption did not exist in America."

It will not require very long for the reflecting mind, or for a deep student of history to be reminded that history gives us pretty positive evidence that white men and Indians, in the early days, and for some time after, were far from safely enjoying such close and friendly association as would facilitate any very accurate or precise observations on this subject. Furthermore, there is no record, so far as I am informed, of the presence among Indians at the time referred to of any intelligent and astute diagnostician who could furnish any reliable data on this subject, and such information as was obtained, necessarily must have been secured by very superficial investigation. That fewer Indians suffered from consumption in those early days, compared with the number afflicted at the present time, I can quite readily understand, for their enforced method of living is now so diametrically opposite to the active nomadic life in the open country to which they were previously accustomed. The unnatural but the very necessary change in the character of their lives would account more for tuberculosis among them than any possible interchange of the disease through contagion. According to my recollection of Indian history, the white man had about as much as he could attend to in keeping Indians as far away from

his social environment as rifle balls and a steady aim would insure; under the circumstances, therefore, his eyes and head and hands were too preoccupied to permit of his digression into the paths of physical diagnosis, in making pathological records, or the noting of any physical defects or tendencies in the tribes surrounding him, which could possibly serve any future useful purpose.

The plan of instruction, how to carry out definite sanitary principles of living, is all very well when judiciously and kindly practised upon the very ignorant and those, who both from ignorance and wilful disregard of all rules of hygiene, neglect the most ordinary rules of healthful living; but the official who undertakes this duty is too often offensively aggressive, rendering the service one of harassment and oppression rather than of help and encouragement.

To impart the useful knowledge how to retain that vigor and resistance which the organism requires, in order to sustain the unceasing struggle of life, and point out the favorable conditions of mind and body under which proper nutrition of the tissues can be maintained, is a far more useful method of official beneficence than the spreading of the dogma of contagion, which is still *sub judice*, exciting a restless and meaningless fear among all classes of a community.

All authorities concur in the importance of sustaining the digestive functions and promoting by every means available a perfect state of assimilation in order to keep up that harmonious relation with all the organs of the body which spells the one word *Health*. All normal organic conditions depend upon the quality of the blood as well as upon its unimpeded circulation.

Overfatigue and insufficient restoration cause the whole body to suffer. The blood globules steadily depreciate, the various tissues depending upon the vital fluid for their nutrition are destroyed, and the natural result is manifested in atrophy, debility, and decay. Such a body with its lowered vitality, and its tissues poorly nourished cannot resist satisfactorily, the invasion of any harmful germs. That the bacillus of tuberculosis should, therefore, find in such weakened constitutions more receptive ground for development than among vigorous and well nourished individuals, is not by any means remarkable. "Physiological poverty" rather than contagion better describes the condition of body, which accounts for the degenerative changes that end in tuberculosis.

Attenuate, if you can, the effects of poverty, says one distinguished authority, and you have one of the fundamental means of overcoming tuberculosis, for its tendency has its origin in the very germ of life itself, giving practical demonstration of this every moment of our existence.

The fear of contagion, moreover, is so generally disseminated that the victims of tuberculosis are being constantly discriminated against in every direction. His own family is taught to consider him a dangerous nuisance, spreading infection all around him, threatening every one who might come in contact with him. He is barred from many sources of relief, and, therefore, destined to wear himself out in a most miserable existence, much intensified by

the public attitude against him. How inordinate and foolish this fear of the microbe of contagion is, appears quite obvious, when we reflect that it is not possible for any infection to occur without the presence of receptive soil. It is far from being scientifically proved as yet, that the bacillus is the primary source of the dissemination of the disease. To magnify the influence of the microbe and to attempt to prove what has been done in the effort to exterminate it, is one thing, but it is a very different and more important matter to save the patient.

We are confronted with a forced realization that tuberculosis is far more than an entity claiming our attention. The ailment consists of a series of pathological conditions, arising and continuing from a number of causes. There are varieties of the pulmonary form—constitutional, alcoholic, syphilitic, and others that need not be considered, all of which have been thrown into one type by the present day consideration of the subject. But this is not in accord with the facts of clinical experience or competent research. "Running water only is pure, stagnant nature of any sort is always dangerous, a veritable breeding place for disease."

Dr. Benjamin Ward Richardson* states that for fourteen years he has been physician to a hospital for diseases of the chest, and in the large public experience there gained, together with that obtained in private practice, he had treated over two or three thousand patients extending over a period of thirty years, and had given particular attention to the subject of contagion of phthisis, but that he did not recall a single instance in which he could trace, in a clear and satisfactory manner, that the affection was communicated from one person to another. He further said that he had known persons who were susceptible to the disease exposed to what would have been the extremest peril, if there had been any contagion, but never knew of the condition to develop under such circumstances. The evidence of the Brompton and Victoria Park Hospitals negatives the idea of contagion, for it has been demonstrated that the percentage of acquired phthisis that did occur among the resident staff of these institutions was less than that of most general hospitals, and when any defective ventilation or overcrowding resulted in any evil consequences, these have been in outbreaks rather of erysipelas and of sore throat than of tuberculosis. My own experience for many years, while connected with one of the largest general hospitals caring for innumerable cases of this affection fully corroborates this assertion. Such cases as did occur under my observation among any of the attendants developed in those who manifested clearly the characteristic tendency to the disease. Persons afflicted with any respiratory morbidity, I have found to be especially sensitive to every atmospheric change and condition, and though pure air is essential for improvement in lung disease, it should not be introduced in a manner to shock the delicate and excitable mucous surfaces of the respiratory tract.

It is very well understood that the phthisically inclined are usually not physically strong and have narrow pointed chests, while their respiration is superficial and feeble. This type of individual is at

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once recognized, and independent of exposure to special contagion, we consider such to be always in danger.

Those who support the theory of the contagious origin of the disease declare that both the susceptible and the nonsusceptible escape if they do not come within the zone of influence of the bacillus that causes the disease; but those of us who have watched the phenomena of the disease from its beginning are well informed of the fact that the general exciting cause of the first symptom is a catarrhal attack which is called a common cold, usually contracted when weakened by some depressing influence resulting from fatigue, anxiety or any physical or mental overstrain.² The question is clearly stated by Richardson, when he says that "confined and debilitated air acting as a depressing influence on vital action favors predisposition, and enables any disturbing cause to set up the first series of nutritive changes in the lung from which the rest proceeds."

No one will deny, then, that phthisis attacks, in the vast majority of instances, a distinctly characteristic type of individual, though it does frequently occur in those who have acquired the tendency, by development of persistent morbid states of the organs of respiration, superinduced by influenza, pneumonia³ and other catarrhal affections to which the respiratory mucous membranes are liable, and frequently occasioned by the perilous exposure to which the public has been subjected for many years in the several lines of our surface cars. The new style of "pay as you enter" cars are an important useful advance in construction and overcome in a great measure this abuse, affording far better protection by the hooded design and swinging door at each end of the cars; but a great menace to health continues even now to exist, by the unseasonable use of the open cars and the little intelligence shown in the matter of proper ventilation in the closed cars, though I must admit that the situation is vastly improved. Under the old plan of cars I have often observed passengers shiver from the cold draughts of air let in by the open front door that some thoughtless person had neglected to close on leaving the conveyance. From this unnecessary and harmful exposure I have seen far more serious illness follow than has ever resulted from any contagion or infection that might be attributed to expectorated matter in the streets or other public places, which are always reeking with as bad and worse filth constituting a far greater menace to the public health. The morbid state of the constantly irritated mucous membrane of the respiratory tract from filth laden dust of all sorts affords the most perfect medium for all forms of microbic germination.

Francine⁴ declares: "Tuberculosis is not contagious in the ordinary acceptance of the term; a prolonged exposure for successful implantation or inoculation with the tubercle bacillus is required, so there is little if any danger in transient association with consumptives or in transient exposure to supposed contaminated places. In the plague infected slums of great cities, however, the disease is kept alive not by contagion but by encouraging lack

of sanitation through overcrowding, squalor, and starvation which principally furnishes the fertile soil." Hirsch says: "Contagious transmission of phthisis plays but a subordinate part in the spread of the malady."

We find the microbes of suppuration always present in suppurating tissue, not, however, till that process is established—so in tuberculosis the bacilli are not the primary cause of the morbid process but the result of a particular form of degenerative change of tissue, the actual disease being that constitutional condition which furnishes a nidus for the reception and propagation of the specific form of microbe.

It is not possible to study the important subject of heredity and not be convinced that by this means, morbid tendencies are transmitted just as readily as peculiarities of temperament, which has never been disputed. The subject of transmitted predisposition is still a most vital one, and far from being satisfactorily settled. While this subtle influence is acknowledged in many physical conditions affecting all animal life, there is no reason why it should be denied in others.

Huber⁵ refers to a functional modification of metabolism in tuberculosis transmitted, which in many respects bears an identical relation to conditions of tuberculosis as it does in subjects predisposed to syphilis, insanity, and alcoholism. Supporters of the contagious theory completely ignore the overwhelming evidence of heredity to phthisis. If all were as susceptible to the disease as they make it appear, all would take it, and the fact of taking it by infection or contagion would be obvious to every observant mind. But it is a fact that few, if any, suffer from that most common form of consumption which attacks the young, unless they have the inherited taint and show the unmistakable type. When, in the same family, a succession of cases appear, some physicians at once attribute them to contagion, whereas my experience invariably shows that either faulty conditions of living, hereditary tendency, or both, conjointly, are so noticeable that the theory of contagion could not be fairly entertained.

The processes by which air, that is used for respiratory purposes, may become contaminated are not yet fully understood, but when we see the result in the physical depression, the anemia and debility resulting in the development of disease, we know that this must be due to something beyond the mere bacterial absorption that occasions the physical changes in the organism. The impossibility of a seed to grow in unproductive soil is too well known to be referred to—so in the human organism germs do not find hospitable reception unless the physical condition of the individual provides a centre for infection which is adapted to such germ life. Is it not then a question rather of providing the soil than the mere reception of the germ that supposedly originates these morbid processes, and is not the rational method of the management of all germ diseases rather that which alters the conditions in which the specific bacteria flourish than the mere directing of efforts primarily against the organism which is believed responsible for the consequences of disease?

We have before us constantly such strong evi-

²Parsons on Phthisis. *Transactions of the New York State Medical Association*, 1892 and 1893.

³London, 1893, and 1895.

⁴Francine's Consumption. *La Merveille des Spécimens*. Treatment.

Sarcel and Edouard.

Medical News, December 2, 1905.

dences of predisposition to certain maladies in some families that hereditary influences cannot be overlooked. A few may here be mentioned. We see this tendency strongly present in the gouty diathesis, the hæmorrhagic, in pseudohypertrophic paralysis, in epilepsy, and in many affecting the gastrointestinal organs, and also diseases of neuropathic origin handed down from generation to generation. The various forms of insanity are very striking examples of heredity. Under such circumstances no particular physical condition can be considered as alone exempt from all the natural laws governing every other condition which affects the human organism. The tendencies resulting from the sum of forces acting through innumerable generations of the past should have more attention from biologists than the subject has received, especially as inheritance is supposed to lie in the tissues themselves; in other words, that there is a something in the tissue elements which predisposes to certain diseases in certain families and which by closer investigation it will be possible to discover.

Weismann believes that in each individual produced by sexual generation a portion of germ plasma derived from both parents is not employed in the construction of the nuclei of the cells and tissues of the soma or personal structure of the individual, but is set aside without change for the formation of the germ cell of the succeeding generation. According to his theory, then, which is very plausible, there is a direct continuity of germ plasma from one generation to another, acting as the conveyor of hereditary effect.

In placental mammals there is abundant experimental evidence to demonstrate that an interchange of material takes place during pregnancy in both directions, from fœtus to mother, as well as from mother to fœtus. Singularly it is possible for a distinct quality derived by a fœtus through descent from the male parent to be acquired by the mother from the fœtus and so influence the germ plasma of her reproductive cells, that it may be transmitted to her future offspring, though they may not have the same male parent. Therefore, it is an axiom with those who are engaged in the breeding of particular kinds of stock, when they wish to maintain the purity of the strain, they do not permit the female at any time to beget offspring by sires of a different or lower blood.

This is not without very positive proof in the human of different races. The racial characteristics of the male derived from the first conception will appear in the offspring of subsequent pregnancies. The peculiarities of temperament, character, and mental proclivities which children derive from their parents are matters of every day observation, and are accepted procreative possibilities. I have not yet heard of any specific microbe accountable for these phenomena.

The jackass impresses upon his progeny such unmistakable evidences of his breed that they are never obliterated in the female he once sires, although she bear progeny of the best quality of her stock in subsequent gestation, the character of the first will continue to manifest itself in her later offspring.

In the human the pronucleus is also so modified by the physical impress of either or both parents at the time of conception that it will remain long after

and tend to direct the production of perfect physical and mental development or the reverse.

Friedmann⁴ has collected from the literature twenty-two instances of undoubted placental infection of tuberculosis in human beings, proved through anatomical study, and one hundred instances in the case of animals. Of two subjects showing suggested transmission from the father, one was cited by Sarney, and the other by Landouzy. Klebs maintains that tuberculosis of the father is ten times more dangerous for the child than of the mother. Friedmann concludes from his experiments that they are conclusive of tubercle bacilli with its fertilizing media passing into the fertilized ovum which is not destroyed by the bacillary invasion, but develops in the fœtus. The bacilli, he states, may be transmitted by conception and remain present in the embryonal organs. This will not prevent, however, the full growth of the embryo, and tuberculosis may not develop for a short period after, but if the disease germ is present there is no reason why it should not develop whenever aroused to activity by conditions favoring development at any time during the life of the animal subsequent to its birth. Pétrie also supports the possibility of congenital tuberculosis as do Loncope and Robinson.

In a very interesting paper by Dr. H. G. Piffard, recently read before the Academy of Medicine, among some of the Problems of Tuberculosis⁵ he states that in purely local tuberculous affections of the glands, for instance the cervical, and in tuberculous abscesses, search may be made in vain for tubercle bacilli, and yet the purulent or cheesy matter is fully as pathogenic to laboratory animals as the type form. Very naturally he asks, to what is the infection due? The infective principle, he answers, is either in the glands or due to some other morphological element not apparent.

A careful investigation of spermatozoa from infected males with sufficiently powerful lenses, I believe, might unfold some morphological quality which would explain certain alterations of its vital tendencies and perhaps disclose some characteristic of its tubercle infecting principle when this constitutional condition exists. The bacilli have been found in the testicle, why not in the germinal fluid?

The tubercle bacillus has been found in the circulating blood by no less an authority than Rosenberger; and Comant and Chalié found the bacilli in a fœtus from a tuberculous mother, furnishing indisputable evidence of the possible direct transmission of the diathesis from parent to offspring.

There are manifestations of tuberculosis other than pulmonary which it would be an impossible task to prove was the result of contagion. It is only necessary to refer to the meningial variety to announce one of the many important instances of the noncontagious variety of tuberculous invasion. I have frequently observed this form of tuberculosis in infants never exposed to the possibility of contagion, having been surrounded by the most perfect safeguards against it from the hour of birth.

Diseases which depend on peculiar disposition of the body or mind called diathetic, are known to descend from parent to offspring without the chance of an extraneous infection. Tuberculosis is as much

⁴*Virchow's Archiv*, 1905.

⁵*New York Medical Journal*, June 15, 1906.

a constitutional disease as syphilis, both are due to characteristic and individual morbid processes, and both are capable of transmission in the manner of a constitutional diathesis.

Physical characteristics which are normal and physiological, and of service in the perpetuation of the species are acknowledged to be within the limits of scientific proof through inheritance, why then should not the same transmission of characteristics be accepted as possible which are of no benefit but rather detrimental, nevertheless also capable of scientific proof?

Numerous illustrations of variations from the normal are furnished by those defective changes in the structure of the body which are designated by pathologists as congenital malformations. We should not imagine that only those modifications or variations in structure which are apparent to the eye, can alone be transmitted. Imperfections in character and constitution as well, are sometimes so slight that it is not possible to recognize them except by the changes occasioned in the functions of organic life. Daltonism (color blindness) which occurs in certain families has been distinctly shown to be hereditary, due to a minute structural defect involving the optic nerve, the retina, or possibly the development of the brain itself. Because there is a certain indefiniteness in the term, or there is lacking a scientific precision in describing what heredity is, there is no reason, with all the demonstrable evidence we possess of its actualness, why we should entirely ignore its real importance and its potency in the production of procreative results.

Though to bacteriology we may look for much assistance in corroborative diagnosis, our methods of investigation have not yet reached that stage of perfection which enables us to discover bacterial presence at the earliest useful period when we may more successfully combat the invasion of tuberculosis, or by such means alone recognize the approach of disease. Those of us who have had large clinical experience in the care of tuberculous subjects realize how frequently cases are met with, which offer no opportunity for the establishment of a diagnosis through bacteriological investigation until the disease has so far progressed that the merest tyro could hardly fail to recognize it. This is not what the scientific physician should be satisfied with. He must have recourse to other more certain means of ascertaining the approach of tuberculous disease. I would rely rather upon a repeated and careful auscultation to discover early persistent deviations of the normal respiration in a subject possessing the diathesis, believing with Niemeyer that the occurrence of tubercle will often follow pneumonia, acute or subacute, in minute areas, which terminate in caseous infiltration of pulmonary tissue. The occurrence of tubercle more frequently in the lungs than in other organs is due to the fact, that in no other organ diseases terminate so frequently in caseous degeneration. Why the pneumonic product should undergo fatty metamorphosis and disappear in certain cases and take on the retrograde caseous metamorphosis in others is only explained by that lack of vitality to which we have already alluded, and is either transmitted or is acquired by those conditions of life that tend to debase constitutional integrity.

What I have said may seem a little extraneous to

the subject under discussion, as having reference more to ætiology, but the pertinence of my remarks appears in calling attention to the preexistence of a morbid process in the lungs and pleuræ often associated with inherent general enfeeblement which invariably constitute the early stages of tuberculosis and prepares the soil for the reception and growth of tubercle bacilli, establishing thereby, the condition, when early recognized, which is not of contagious acquirement, but may yield to that judicious management which helps to promote healthy cell life.

That there is a wave of conservative opinion slowly rising in medical circles regarding direct microbic infection is very apparent, and there is some evidence that the very radical views hitherto held will in time be decidedly modified.

That all forms of tuberculosis are curable I have no manner of doubt, but that any form is preventable by the modern extreme measures adopted to curtail the activity of the bacillus by registration of the victims and the creation of a public panic against the microbe, I have very positive doubts that anything effectual can or will be accomplished.

A very useful advance, however, in the direction of its prevention can be very emphatically realized by effecting natural habits of healthful living; obtaining an abundance of pure air and exercise, wholesome and sufficient food to maintain constitutional vigor, securing freedom from the anxieties and the cares attendant on the exigencies of life, which is not always possible, and finally giving early attention to the avoidance of all things which tend to develop the disease in those who show a natural predisposition to the affection. These are the practical and the useful means of prophylaxis and not the attempted avoidance of microscopical germs which constantly surround us and never can become active against a defensive armor constructed of such constitutional barriers as have been described. A physical basis established on these lines will so affect metabolic processes that the products of germ activity can be effectually neutralized and antagonized.

1013 MADISON AVENUE.

THE SO CALLED THYMUS DEATH.

*With an Account of Seven Cases of Sudden Death in One Family.**

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The following history is one of the most interesting and unusual instances of the so called thymus death of which I have read or heard;—certainly the strangest which has been in any way under my observation. One other somewhat similar account in medical literature has come to my notice;—that given by Hedinger (22) in which five children of one family had died suddenly with symptoms alike in all; one autopsy showing an enlarged thymus gland.

I was called early in April, 1907, in consultation to see a child of three months, born of Italian parents. Nothing ailed the infant at the time except a slight bronchitis, and

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Dr. Theodore Sprissler, the attending physician, had asked for the consultation in order to discuss means for the prevention, if possible, of the fate which had occurred to the majority of the preceding children. The notes kindly furnished me by Dr. Sprissler, combined with my own questions and observations, and the autopsy report by Dr. Howard Childs Carpenter, constitute the basis for the following history:

The antecedents on the paternal side, as far back as the grandfather, exhibited nothing which could explain the later events in any way, and the same was true of the maternal antecedents. The father and mother of the patient were apparently perfectly healthy individuals. The first child was born prematurely at seven months, and died after twenty-four hours. The second child was stillborn. The third child died at three months with symptoms said to resemble entirely those seen in the later coming children. The diagnosis of "pneumonia and heart failure" was given by the attending physician, but the cause of death was evidently very obscure. The fourth child died at six months with the same symptoms as those seen in my patient. Here, too, the exact cause of death was certainly unknown, although the diagnosis of "pneumonia and weak heart" was made. In neither case was there an autopsy. The fifth child was living and well at the age of eight years. The sixth child died at five and a half months. It had had a slight bronchitis from which it had recovered. A tonic was then prescribed by the physician, an able man well known in Philadelphia, but the child died suddenly while the first dose of medicine was being given to it. The seventh child died at eight months from "pneumonia and bronchitis." The symptoms were the same as those to be described in the case of the ninth child. The eighth child died at one month; and here, too, the symptoms were identical with those seen in the other children. The cause of death was, as in the others, evidently obscure. The consultant who was called in thought, it is stated, that the bronchial tubes were too small to allow the air to enter the lungs. Some degree of bronchitis preceded death. The ninth child is the case now to be reported. Its symptoms are said to have been exactly like those of the others. A tenth child has since been born but died at the age of ten weeks with the same symptoms as seen in the others.

The ninth child, Albert S., was born December 31, 1906, in normal labor, without unusual symptoms, except for a slight degree of asphyxia, traces of which lasted a few hours. He continued in good health after this period and was hearty and well nourished, but on account of the dread of the fate which had befallen the others, the parents requested Dr. Sprissler to make weekly examinations. This he did, finding nothing wrong at any time except a few rales in the chest. The child was breast fed for the first three weeks and was then weaned gradually. About the end of March, being then three months old, he experienced a slight increase in the bronchitis, and I was asked to see the case in consultation, as I have already stated, not because the infant was really ill, but to aid in preventing, if possible, a repetition of past experiences.

I found the infant well nourished, with no evidence of illness except for a few scattered, coarse rales in the chest and a slight cough. The diagnosis of bronchitis of a mild degree was made, with a secondary diagnosis of a possible status lymphaticus, based entirely on the family history, and not upon the appearance of the patient. The use of atropine was advised, together with counter irritation of the chest with mustard plasters.

I never saw the baby again. He continued in good condition until April 13th, on which date the cough increased. On the morning of the 14th his lips and extremities were livid, and auscultation showed harsh respiration on both sides of the chest, with coarse rales. Percussion showed nothing abnormal. By evening the cyanosis had become widespread and intense and there was dyspnea. These symptoms increased until the child died at 9 a. m. on April 15th, the severe symptoms having lasted twenty-four hours. There were at no time any manifestations which suggested tracheal stenosis.

I condense from the notes of the autopsy.

The thymus gland was large and thick, extending downward as far as the auriculoventricular septum. It appeared to press upon the great vessels. Its dimensions were 7 cm. in length; 4 cm. in width; and 2.5 cm. in thickness, and its weight 27.5 grammes. On section it showed a simple hyperplasia with no evidence of excessive secretion, edema, or unusual congestion. There was a slight beading of the

costochondral articulations. Both lungs showed hypostatic congestion of the lower lobes, but were otherwise normal and were crepitant throughout. The heart was large, dilated, hypertrophied, without evidence of valvular lesions; the aorta normal; the bronchial and mesenteric lymph glands enlarged; the spleen moderately enlarged and congested on section.

We have here, then, a strange family history:—eight children, omitting the stillbirth and the premature birth, all but the ninth breast fed, and only one of them alive at the time of writing. The other seven died between the ages of one month and eight months, all well nourished, with uncertain diagnoses, and all with clinical histories nearly identical; namely, slight bronchitis followed in one instance by extremely sudden death, in the remainder by the rapid development of cyanosis and dyspnea lasting some hours or a day, but without any symptoms suggesting stenosis; the condition in the ninth child being proved by autopsy not to depend upon pulmonary involvement. In the last case, too, a very large thymus gland was found. It is a supposition only, but a warrantable one, that with the clinical symptoms the same, and in view of the family relationship, the lesions also in the other children were the same as in the ninth one.

As to the cause of death in these cases there is, I think no evidence that tracheal compression existed in any of them. Not only was there no appearance of this at the autopsy upon the ninth child, but the symptoms in no instance were those of stenosis of the trachea. The autopsy excluded, too, the influence of bronchitis and pneumonia in the ninth infant, and presumably in the others, as their symptoms were the same and certainly not those usually seen in these diseases. The sixth child suffered an absolutely sudden death suggestive of sudden cardiac inhibition. In the others the failing circulation, which appeared to have been the cause, came on more gradually. The thymus gland in the ninth case seemed at autopsy, as stated, to compress the great vessels, but no positive proof of such compression was present. That there was actually any such compression exercised I doubt, for reasons which will be spoken of later.

The subject of the condition to which the title "thymus death" has often been applied has been so much discussed in the last few years that I would hesitate to approach it again were it not that some recent writers, notably Warthin (48) and Rehn (39), take the ground that it is now definitely proved that the majority, if not, indeed, all such cases, are undoubtedly due to pressure by the enlarged thymus gland, and that the older theories of status lymphaticus, or other conditions, as a cause of death, are practically exploded. This is so far from my own views and those of many others who have studied the subject, that a brief discussion of it may perhaps be of value.

As far back as 1614 Plater (36) noted the frequent presence of enlargement of the thymus gland in cases of sudden death, and the association was frequently observed after this date. Finally in 1830 Kopp (30) exploited the theory of "thymic asthma" as a result of thymic enlargement. The belief in this association became wide spread, although still much disputed, until in 1858 Friedleben (17), as a result of extensive studies, discredited Kopp's theory and denied the existence of any relationship what-

ever between enlargement of the thymus and asthma or sudden death. This view found general acceptance for thirty years, until in 1888 Grawitz (20) advanced the belief in death from compression of the trachea by a large thymus gland, based upon autopsies in a couple of cases, although in neither of them was compression of the trachea found post mortem. The weight of his authority was great and convinced many. A year later, however, in 1889, Paltauf (34), as a result of many autopsies, proposed the theory of the "status lymphaticus," which found a ready acceptance. In 1896 Escherich (10) adopted this theory in a modified form, believing that with the gross anatomical lesions of this condition there was developed a "neurosis," the result of an autointoxication, upon which death depended, the fatal ending being caused by inhibition of the heart's action. Since this time the subject has been one of enormous dispute, chiefly because it is one in which it seems impossible positively to prove anything in many instances. The several theories advanced may be classified as follows:

(A). *Nonmechanical, or Convulsive.* 1. A hyperthymization of the blood, the result of overproduction of the thymic secretion, a toxic condition resulting.

2. Defective secretion of the thymus with consequent constitutional disturbances.

3. A toxic action of some other nature not definitely known.

4. A neurosis of some sort through which the nervous system is rendered extremely sensitive, and cardiac inhibition follows from slight and often undiscoverable causes, and which has thymic enlargement and the other lesions of the status lymphaticus as its anatomical manifestations.

5. A neurosis of this nature, *independent* of any so called status lymphaticus.

(B). *Mechanical.* 6. Pressure upon the trachea, producing reflex inhibition of the heart's action through irritation of tracheal nerve filaments.

7. Pressure upon cardiac nerve trunks or the great vessels.

8. Direct compression of the trachea with consequent strangulation.

As to the method by which the thymus exerts pressure, under the heading "mechanical," there are various opinions, viz., The pressure may be produced: 1, By swelling due to retention of its own secretion; 2, by oedema; 3, by congestion; 4, by bending back of the head and consequent sudden narrowing of the space occupied by the trachea and the enlarged thymus; 5, by sudden shifting of the position of an already enlarged thymus into the "critical space" of Grawitz, and consequent pressure on the trachea.

Only two views have received acceptance at all universally. First, that there is a neurosis of some sort, toxic or otherwise, and that death is a cardiac death. Second, that there is compression of the trachea, and that death is due to strangulation.

Death from pressure on the large vessels is not believed in by many observers and has much against it; chiefly, that the vessels, especially the venous trunks, are situated rather low to receive injurious pressure, and that it is more likely that the soft

thymus would be indented by the pressure of the aorta than that the gland itself would exert compression. So, too, there are not many who accept the theory that death is due to pinching of the nerve trunks leading to the heart.

The subject has been one of much interest to me, and I have kept a fairly careful watch on its literature, and have myself discussed it in an earlier publication (21). There is no question that death by pressure of the enlarged thymus gland upon the trachea can and does occur. Autopsies showing this compression and indicating the possibility of death being produced by it have been reported by Beneke (4), Marfan (32), Barack (3), Clessin (7), Lange (31), Jessen (27), Farret (11), Hedinger (23), Flügel (14), Tailleur (45), Feer (12), Penkert (35), Baginsky (2), Gluck (19), Birch-Hirschfeld (6), Somma (44), Paltauf (34), Biedert (5), Abelin (1), and Wiegert (49). There are probably others which I have overlooked. Abstracts of the pathological findings of most of these cases are given by Hotz (25). As to the clinical conditions present, it is to be noted that, whereas in some of the cases, as far as I have been able to consult the original publications, there was during life decided evidence of tracheal stenosis, in a large number there was not satisfactory evidence that compression had been the actual cause of death.

More important is the fact that operation has been performed in a number of cases with more or less complete excision of the thymus, sometimes with anchoring of the remainder, and prompt relief has followed. Such cases have been published by Siegel (42), König (29) (two cases), Purrocker (37), Ehrhardt (8), Hinrichs (24), Rehn (39), and Schwinn (41); and one case, that of Friedlander (16), was relieved by treatment with the x ray. Perhaps here should be placed one of Abelin's (1) cases in which tracheotomy afforded prompt relief. A sudden subsequent attack was fatal, and a very large thymus was found at autopsy. Nothing, however, is said of the discovery of compression of the trachea by it having been observed.

This makes twenty reports showing evidence of pressure post mortem, and ten other cases relieved by treatment. There we stop, leaving the large number of other published cases not satisfactorily accounted for on this theory, as, indeed, is true of many of those in the list of cases with compression found post mortem.

As to the majority of the numerous reports of "thymus death," or with other headings indicating death from pressure, I am forced to the conclusion that many of them are merely instances of imperfect logic; a child dies suddenly, autopsy shows an enlarged thymus gland; conclusion, death is due to enlargement of the thymus. We observe, however, that no satisfactory post mortem evidence is offered that the thymus had anything to do with the death, and the numerous cases in which sudden death has occurred and no thymic enlargement been found are ignored, as are the equally numerous ones in which a much enlarged thymus has been discovered in infants dead from known causes of some other nature. From the major premise that "some enlarged thymus glands cause death" the reporter concludes

that all deaths where enlargement of the thymus is present, are due to this cause. He does not offer proof of this.

In all the ten cases relieved by operation or in other ways, it is noteworthy that symptoms of tracheal stenosis, gradually increasing, had lasted for weeks or months. The matter is very different in the majority of cases of "thymus death" reported. Here the child dies suddenly or after a few hours only, with evidences of failing circulation. The death in some instances appears to be from spasm of the larynx, but is, in reality, as generally admitted, cardiac, the heart's action ceasing first. Moreover, autopsies show, as Targhetta (46) has pointed out, a striking absence in many of these cases of any evidence of asphyxia. Indeed, no satisfactory cause of death is discovered either in the symptoms or in the post mortem lesions.

In fact, to any one reading the literature of the subject carefully, it seems to me, it must be evident that there are at least two classes of cases.—those infants dying from mechanical obstruction to respiration and those dying from nervous or other influence with entirely different symptoms indicating cardiac failure, and with no evidence of tracheal stenosis.

Those who oppose this view are forced to advance the theory that the thymus is capable of undergoing extremely sudden alteration in size. As to the possibility of such sudden enlargement, it is chiefly theory with little anatomical or physiological support, and much which is directly opposed to it. Anatomists are agreed that the arterial and venous supply of the thymus is comparatively small, and this makes it difficult to admit the possibility of a congestion more sudden than in any other organ. Although congestion of the thymus gland has repeatedly been found at autopsies it has never been proved to have arisen suddenly or to have been excessive, and it has also repeatedly occurred that no such hyperæmia has been present in cases of sudden death associated with thymic enlargement. Moreover, Clessin (7) attempted to produce such congestion experimentally in dogs, without result. The possibility of death being due to the bending of the head backward, and the consequent compression of the trachea by an enlarged thymus gland, as urged by Beneke (4), is negated by the fact that bending the head forward again does not relieve the trouble; as also by the fact pointed out by Tailleur (45) that children sometimes die suddenly without any changing of the position of the head. Then, too, Simon and d'Elsnitz (43) injected melted paraffin into the trachea of dead children, placed an enlarged thymus gland in position and then attempted to produce indentation by bending the head backward, but without result sufficient to warrant the belief that interference with respiration could be produced in this manner. There has, as far as I know, been no proof advanced of the existence of sudden decided enlargement by retained secretion or from oedema, with consequent tracheal compression. Even if we were to admit the possibility of more or less sudden swelling from some cause we should still fail of explanation for death with symptoms of sudden heart failure, which is so characteristic of many of these cases, or for the absence of progressively

increasing dyspnoea as the gland grew larger. With these facts, in view, the assumption that the thymus suddenly swells to an extent capable of causing death, seems to me lacking of satisfactory proof.

Certainly as far as my own experience and reading of the literature goes, I feel convinced that, whereas there are cases in which death results from pressure of the thymus gland upon the trachea, these are exceptional, and warning in such cases is given by symptoms of strangulation gradually increasing in severity. The cases of actually sudden, or at least rapid, death, I think depend upon a neurosis which may be associated with lymphatic and thymic enlargement as its anatomical manifestation, but is not necessarily so. It is only on the supposition of some such neurosis as a result of which cardiac inhibition takes place from insignificant causes, that a reasonable explanation is to be found for the sudden death sometimes occurring in eczema, as especially studied by Feer (12), following plunging into cold water, as reported by Nordmann (33) and others; the giving of hypodermic injections; the puncture test of the pleural cavity, and the like.

As an indication that the opinion expressed is one shared by many who have studied the subject, let me quote further, briefly, from some well known, comparatively recent writers.

Friedjung (15) in 1900 made a most extensive and much quoted critical study of the subject with 116 references to its literature. As a result he concluded that undoubted cases of pressure of the thymus upon the trachea do exist, although whether upon other organs cannot yet be determined; and he believed further, that the bending back of the head was without influence. He admitted the existence of the status lymphaticus and the tendency to sudden death depending upon this. In his recent article in Pfaundler and Schlossmann's *Handbuch* he reiterates this opinion, which the publications of others since his earlier contribution have not changed; emphasizes the necessity of the symptoms coming on gradually in cases of compression; and asserts that there is no proof of the occurrence of sudden swelling of the thymus gland.

Thiemich (47), in 1901, carefully analyzed the various causes of sudden death in children, admits that a large thymus can compress the trachea, but says that in all such cases there are symptoms of gradually increasing dyspnoea, the death never being sudden. He thinks that the cases of truly sudden death are due to a neurosis which influences the heart. He denies the possibility of sudden venous congestion of the thymus gland.

Targhetta (46), in an extremely able thesis, in 1902, analyzes forty-one published cases, including one of his own. He concludes that death occurs under different conditions and with a different mechanism in different cases. He believes in the existence of pressure, but thinks this is only an irritant to the nerves in the trachea, through which a reflex inhibition of the cardiac action results.

Howland (26), in a valuable discussion of the subject in 1907, expresses the belief that we have no evidence of the existence of pressure, except in the rare cases in which operation has relieved the patient.

Finally, I may refer to a very interesting discus-

sion in the Section for Diseases of Children of the Versammlung der Deutschen Naturforscher und Aerzte in 1902. Ganghofer (18), the referee, insists on the existence of one class of cases, small in number, which exhibit dyspnea for a longer or shorter time and die of tracheal compression, not suddenly. Another class, however, dies suddenly a cardiac death, not from laryngospasm. He thinks the death depends upon a constitutional disturbance independent of the status lymphaticus. Richter (40), a coreferee, reported 1707 cases of sudden death in children up to the age of fifteen years. Of these 1555 were under one year. Only one child showed the status lymphaticus with an unusually large thymus. He is skeptical regarding the association of sudden death and thymic enlargement. In the general discussion which followed, Kassowitz (28) expressed disbelief in any connection of thymic enlargement with sudden death; Ranke (38) had observed sixteen cases of sudden death in the last five years, and in five of these there was no thymic enlargement present; Fischl (13), likewise spoke against the influence of the thymus in these cases; and Epstein (9), using very forcible language, called thymus death only "eine Hinterthür für diagnostische Impotenz."

Whether or not we accept these views, the names I have quoted are sufficiently widely known to make the statements worth considering, and to warn us against drawing a hasty conclusion, in any instance, that an enlarged thymus and a sudden death have really any ætiological relationship.

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1810 SPRUCE STREET.

REPORT OF A CASE OF PROLAPSE OF THE UTERUS, VAGINA, AND RECTUM.

With Multiple Adenoma of Rectum and Sigmoid and Diverticula of the Sigmoid.

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This interesting case is reported for the especially unusual complications presented, the age of the patient, and the results obtained.

CASE.—The patient, C. L., a widow, aged seventy-one years, houseworker, was admitted to St. Mary's Hospital, Hoboken, N. J., May 7, 1909.

Family history, negative.

Previous personal history.—Patient had three children, two born living, one born dead; all of whom were delivered with forceps under chloroform anesthesia. Her first child was born forty-two years ago, when the mother was twenty-nine years old. Her last child was born thirty-seven years ago, when she was thirty-four. At the birth of the first child she received a severe laceration of the perineum which was followed by a partial prolapse of the uterus.

Each succeeding delivery increased the laceration of the perineum and at her last delivery it extended into the rectum. As time passed, the degree of the prolapse increased until about ten years ago it was complete as far as the uterus was concerned, and the rectum was then just beginning to descend.

She was admitted to St. Mary's Hospital March 19, 1904. At that time the diagnosis was complete laceration of the

She stated that about nine months before, the prolapse of the rectum became very pronounced and gradually increased up to the date of admission. For the last few weeks prior to May 7th her life had become almost unbearable, as she could not move around and suffered intensely from tenesmus, hemorrhage, and itching.

On May 7th I was called to see the case by Dr. Livingstone Lewis, and found her suffering severely. Examination revealed complete prolapse of uterus, vagina, and about twelve inches of the rectum. All could be replaced with difficulty, but would immediately return on removing the support. The vaginal wall was much thickened, but not



FIG. 1.—Shows condition of patient immediately before the operation. *a*, Prolapsed rectum. *b*, Prolapsed uterus and vagina.

perineum which resulted in complete prolapse of uterus and rectum. The rectal prolapse then measured about six inches.

On April 4, 1904, she was operated upon by Dr. G. Bozeman for repair of the perineum and sphincter ani. It was suggested, after she recovered from the operation, that she submit later to a colopexy and a ventral fixation; this she



FIG. 2.—Shows condition of patient about four weeks after the operation. *a*, Shows broken down perineum; stitches had to be removed owing to infection. *b*, Shows anus; primary union with mucous membrane followed operation in this region.

refused. However, she seemed much benefited at the time. Shortly after she returned home though, both uterine and rectal conditions began to annoy her again, but she managed to get along fairly well and attend to her work until a short time before she was admitted to the hospital this last time.



FIG. 3.—Shows final result six weeks after the second operation for repairs of perineum. Here we got primary union.

ulcerated, and there was a complete absence of perineal body. A very thin sphincter ani could be found, but it had lost its elasticity, and was so attenuated that it was practically worthless. The rectal mucous membrane was thickened and bled very easily. Examination with finger revealed numerous polypi, probably of the adenomatous type. The case did not appear favorable for operation on account of the age and apparent feeble condition of the patient. In

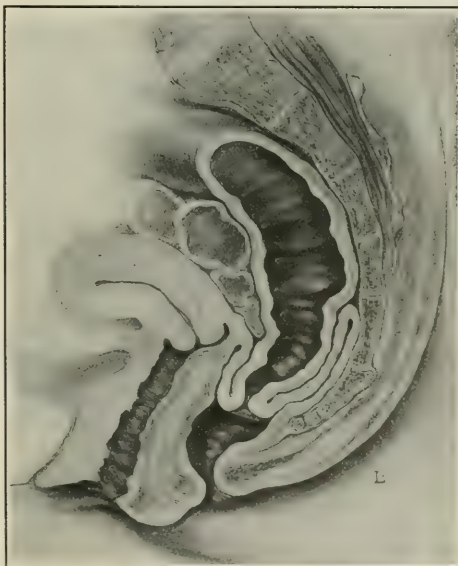


FIG. 4.—Shows relation of uterus to the sigmoid and rectum. It also shows the sigmoid descending into the rectum (probable of sigmoid).

appearance she looked to be eighty years of age rather than seventy-one. My conclusion was that if the patient wishes the operation, with full understanding of the danger and was willing to take the risk, I would undertake to do what I could.

After full explanation to the patient, she insisted upon

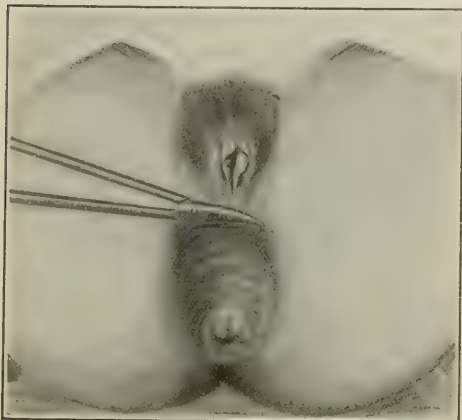


FIG. 5.—Shows the incision three quarters of an inch from the anal margin. The scissors are in position to continue the incision around the full circumference of the mass.

the undertaking, assumed for herself all responsibility of result, and was prepared for the operation, said preparation being carefully attended to for two days. In the operation, I was assisted by Dr. Lewis and Dr. Von Deesten, of St. Mary's, Hoboken.

Operation, May 9, 1909. A median incision was made and

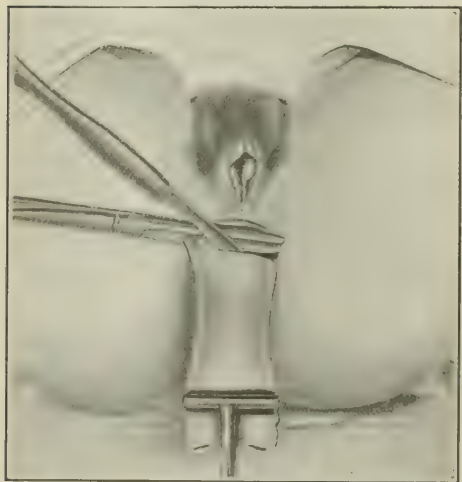


FIG. 6.—Shows clamp applied to the gut as high as possible after gut has been drawn down. The knife is cutting off the gut one-half inch beyond the clamp.

the abdomen opened. The recti muscles were found atrophied with much separation so much so that post operative hernia was feared. The uterus and annexa were next removed and the broad ligaments and round ligaments sewed

together in order to strengthen the pelvic floor. The sigmoid was next pulled up out of the pelvis and examined. It was extremely long, very flabby, and covered by diverticuli of varying sizes. Inside of the sigmoid a number of polypoid tumors could be felt.

It was not deemed wise to resect the bowel on account of the age of the patient. The sigmoid was therefore suspended to the abdominal wall after the method of Professor Tuttle. The abdomen was now closed very carefully by bringing the muscles together and afterward overlapping the fascia. The patient was next put in lithotomy position, and as the rectal prolapse was apparently not influenced by suspension of the sigmoid, it was decided to excise the rectum after the method of Mikulicz as modified and given by Tuttle in his *Diseases of the Anus, Rectum, and Pelvic Colon* (p. 699) with some slight changes.

Technique. The patient being in the lithotomy position, with hips well elevated, the prolapse was dragged down as far as possible with traction forceps. It was then clamped by two volsella and held in this position by assistants. The elevated position of the hips allowed any coil of small intestines to slip out of the peritoneal pouch and thus avoid the danger of wounding them. After the intestine was dragged down it was surgically cleansed and dried by sterile gauze. Sterilized gauze was now used to pack the gut in order to avoid soiling the wound. After these preparations, an incision was made through the mucous membrane, about an inch from the skin (Fig. 5), upon the interior surface of

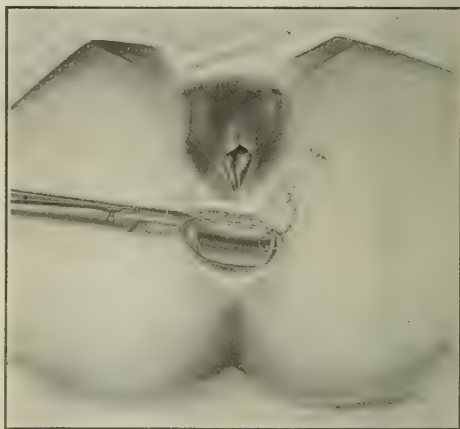


FIG. 7.—Shows the position of the gut distal to the clamp being sutured by a buttonhole suture of No. 2 chronic catgut to the border of gut surrounding the anal margin. The end of the suture at the first knot is left long to be tied to the other end of the suture when the anastomosis is complete.

the gut. Dissection was carefully carried through the entire thickness of the intestine (Fig. 6), all bleeding being checked as it occurred, until the peritoneal cavity was opened. Here Cunningham uses a clamp, which is an improvement on Mikulicz's method. When this was done, the serous membrane of the intussuscepted portion of the gut was brought into view. This membrane was cut through and its upper edge sutured to the peritoneal edge of the wound in the anterior layer of the prolapse. Thus, step by step, the peritoneal pouch was closed. This having been accomplished, the entire thickness of the intussuscepted gut was cut through, little by little, and its muscular and mucous layers sutured by chromicized catgut to the mucous membrane surrounding the margin of the anus at the site of the original incision.

In this manner the entire prolapse was excised, and end to end union of the gut accomplished.

The ends of the sutures in the muscular and mucous layers were left long, in order to steady the parts and prevent their retraction while the operation on the other portion of the circumference was being made. All bleeding points

were caught, and either twisted or ligated during the operation.

It should be noted that if, after completing the excision, the edges of the mucous membrane are not in accurate apposition, a continuous suture should be applied half way around the gut and tied, and the other half afterward treated in the same manner (a complete continuous suture is apt to cause contraction). The long ends of the sutures should then be cut off and the wound dusted with boric acid or thymol iodide.

The operation being thus completed, the gauze was removed, a Lynch's tube introduced, and the buttocks strapped with adhesive plaster to prevent the tube from coming out. The perineum was now very hurriedly repaired and the patient returned to bed.

After treatment and results: The bowels were confined for eight days by administration of opium to quiet peristalsis. I used and prefer tinct. opii deod.; min. x, for five or six days.

It is to be noted that if a movement should occur before the end of the eighth day, the bowels should be thoroughly irrigated with warm saline solution (about a quart at a time). In this way they are kept thoroughly clean, and the oozing of faeces which would otherwise occur, is avoided.

The patient made an uneventful recovery, the abdominal and rectal wounds healing per primum.

About the fifth day after the operation the perineal wound showed evidence of infection, whereupon the silk-wormgut stitches were removed and the vagina washed out with warm boric solution; this was continued until all evidence of infection had disappeared.

The result of the operation was excellent, as the patient was out of bed at the end of the second week and has had no setback up to this time (June 18th, over five weeks), and has gained several pounds in weight. She has practically no control of the sphincter, but this was the case before the operation. She is now comfortable, and we hope at some future time, notwithstanding her advanced age, to repair the perineum and narrow the anus, in order, if possible, to give her control.

The points of special interest in connection with this case, as they appear to me, may be thus summarized:—

1. The existence of a complete prolapse of uterus and vagina with multiple adenoma and multiple diverticuli in one patient, as a rather rare anatomical and surgical curiosity.

2. That an uneventful recovery after so many operations in the case of a woman, seventy-one years of age, with a subsequent gain in weight, lead one to infer that age does not necessarily contraindicate surgical measures for the relief of a deformity.

Since the above operation, I have received from Dr. John H. Cunningham, of Boston, a reprint from *Annals of Surgery*, May, 1909, of his report of three cases of prolapse of the rectum, operated on by him with modified technique. Dr. Cunningham has very kindly loaned me for use with this report, the three cuts he used in illustration to add to the photographs appended.

On June 24th, Dr. Lewis and Dr. Van Deesten assisting, I repaired the perineum and sphincter ani. Recovery was uneventful; wound healing by primary union.

July 11th. Control very much improved.

August 5th. I saw the patient this morning. Results excellent. She is able to help about the hospital. Sphincteric control improved, but far from perfect yet.

58 WEST FIFTY-EIGHTH STREET.

PRIMARY TUBERCULOSIS OF THE MAMMARY GLAND.

With Report of Two Cases.

BY WILLIAM FULLER, M. D.,
Chicago.

Sir Astley Cooper first described tuberculosis of the female breast. It is not plain that this description contains proof that the true significance of this affection was thoroughly understood. It was not described as a primary condition or as an isolated lesion, but was regarded merely as a complication of tuberculosis in other organs or tissues of the body, and consequently its treatment was not thought to be surgical.

It remained for Nelaton, in 1839, to recognize that mammary gland tuberculosis might occur as the only lesion of the kind, owe its existence, not to a contiguous process, or to more distant lesions of a like nature, but to sources apart from these. In other words, Nelaton's understanding of this affection corresponds to our own; namely, that it is a surgical disease frequently showing itself as the only demonstrable focus of the kind in the body.

Heyfelder (1), 1851, reported the first case in a male, who was cured by curetting and drainage. Dubar (2), 1881, gave to the subject its first sound and scientific interpretation, by studying its histopathology and discovering the tubercle bacillus in the breast lesion. Roux, some years later, described the cold abscess, then regarded as a new form of the disease.

Since Dubar's thesis reports of numerous cases have been collected; many notable papers on the subject have been contributed; and yet, for reasons not difficult to see, tuberculosis of the female breast is not always recognized until needless surgical measures have been carried out resulting in mutilations not justifiable for a cure of this affection.

Tuberculosis of the mammary gland has no characteristic clinical features; the symptoms usually present are also found in numerous other affections of the breast, in syphilis, in carcinoma, in sarcoma, and in simple inflammatory affections. Tuberculosis does not, as the earlier literature seems to show, occur almost exclusively in young women, but may occur, as later reports show, in women of any age. In the two cases here reported, one patient was thirty-five years, the other fifty years of age. Shield (7) has recently reported a case in a woman of seventy-three.

Clinical evidence alone will not always warrant a diagnosis, but if such evidence, slight though it be, is confirmed by microscopical study, no serious doubt as to failure or mistake in the diagnosis need be entertained. Park has recently recommended as a diagnostic aid, that the discharges from the fistulous openings be injected into guinea pigs. Modern and improved methods of making diagnoses have demonstrated the fact that tuberculosis, as a primary condition, is more frequent than it was formerly thought to be.

Sidney Scott (Rodman) has shown that in a series of 1,500 breast lesions, tuberculosis as a primary condition comprised about two per cent. of the number. Mandry's (3) statistics showed that fifty per

cent. of the mammary gland tuberculous cases had foci of the disease in other parts of the body, which corresponds to the opinion of Argellier (4) on the same point.

Surgical tuberculosis and malignancy often have many features in common, and the mistakes to which this resemblance has led are serious ones, not only in the differential diagnosis, but naturally in the selection of the most rational therapy. No better proof of this is needed than is shown by a report published by Vedova (5) and recently quoted by Harsha, who detailed twenty-five cases of tuberculosis of the tongue which were regarded as malignant for which very radical and sweeping surgical operations were done; many of which were complete excisions of that organ. Volkman twice removed a tuberculous tongue under the mistaken diagnosis of malignant disease. I have in mind a case of tuberculosis of the mammary gland which, under a mistaken diagnosis, was operated for malignancy. The entire breast with both pectoral muscles, fascia, lymphatics and an extensive skin area were sacrificed to learn later by the laboratory report that the lesion was a tuberculous one.

Such a condition as a purely primary tuberculosis of the mammary gland probably does not exist. Without making a complete and thorough post mortem examination of every organ and tissue a diagnosis of this kind, as has been emphasized by Rodman, would not be justified. For all practical purposes, however, the term will serve the purpose for which it is intended; but definite understanding should be reached as to the particular class of cases which rightfully fall under this head. With the view to the surgical management of tuberculosis of the breast, the cases which belong to this category are: (1) Those in which the focus in the mammary gland constitutes the extent of and is the only lesion of this kind to be found after a careful examination; (2) those cases which present lesions other than the one in the mammary gland, but with which no direct or indirect connection can be discovered.

The latter class it will be seen are as much deserving of the name "primary" as the former; because first, in this class there is often no evidence obtainable as to whether the lesion in the breast made its appearance before or after the other lesions; and second, because in the former class the breast focus may be the result of some remote or nearby process which is impossible of demonstration; therefore, any tuberculous breast lesion, regardless of the presence of other foci of this disease, may for all practical purposes be regarded as a "primary" or at least a surgical condition.

That the presence of distant but unrelated tuberculous foci to the breast lesion is not always a contraindication to the surgical removal of the latter will be indorsed by those who have witnessed the beneficial effect on the general condition of patients after the surgical removal of a tuberculous process, and also the gradual improvement in the unoperated lesions.

If the pathological process in the breast is but a part of a miliary tuberculosis, or is a lesion contiguous to and possibly the result of a similar and widely extensive focus in the ribs, sternum, or pleuropulmonary apparatus, the case is without surgical interest and should not be included in the type of cases

under discussion. It has been customary for writers on the subject of tuberculosis of the mammary gland to describe several forms of the disease.

Dubar first described a discrete and a confluent form to which has more recently been added a type of the disease known as miliary tuberculosis and also the intramammary cold abscess, a most elaborate and detailed description of which has been recently furnished by Hardoin and Marquis (6). The different "forms" of the disease are in all probability only different stages of but a single variety. The histopathology of the lesion of the breast is identical with the same lesions elsewhere, and like these varies with the stage of the process at which microscopic search is made. If sections are made from a lesion early the pictures are simple; the alveoli and ducts present undisturbed and unaltered appearances; no giant cells, nor tubercle formation can be made out. But later in the tuberculous process characteristic changes, with the occasional presence of the tubercle bacillus, are readily recognized. Findings of this character coupled with clinical data are sufficient for a diagnosis.

ETIOLOGY.

Heredity, as far as we know, plays no part in the production of this affection. The breast during lactation is no more susceptible to the infection than at any other time. Whether the disease has the same predilection for young women, as was formerly supposed, seems doubtful in view of the later literature on this affection.

INFECTION.

A consensus of opinion regarding the most frequent source or route of infection has not, as yet, been reached. It is generally admitted, however, that it is more often through the lymph or blood currents, that the infection atrium may be provided by a broken epithelial surface about the nipple or surface of the gland. Again the lactiferous ducts have been looked upon by some writers as the chief pathway of the tubercle bacillus. Indeed Verneuil regarded this as the chief route in all the cases.

Rodman (8) who regards the hematogenous route as the chief source of the infection, differs with this view of Verneuil by pointing out that, if the galactophorous ducts are the avenue through which the organism reaches the gland tissue, the greatest activity of the tuberculous process, when once initiated would be observed at the orifices of the ducts rather than in the interior of the gland. While this seems reasonable, it should not be forgotten that Nothnagel (9) has shown that the mere location of tubercle bacilli in any tissue does not necessarily lead to a proliferation of the organism at that point, nor to the initiation of a tuberculous process there. He has shown how the bacilli may pass from the site of the inoculation leaving no trace or evidence of their passage; and how the characteristic changes which accompany and follow the proliferation of this organism may begin at some lymph node or tissue far removed from the point at which the organism began its journey.

The hematogenous, of all routes or sources of the infection, seems the more likely one, and Rodman quotes the experience of Kitt who, studying bovine tuberculosis, found the udder lesions to be of hematogenous origin.

In a given instance of mammary gland tuberculosis, any one of the well known sources or routes of infection may be at fault, but that there is great likelihood of error in attempting to designate the particular one, nobody will deny. The mere presence of an abrasion over the breast surface or an ulcer about the nipple, is not proof that a tuberculous nodule within the breast owes its presence to an infection at such points. Under such conditions there is often, of course, strong presumptive evidence that between the lesions within and without the breast some relation must exist; but we must recognize the fact that the coexistence of two such lesions will in no way lessen the possibility of the tubercle bacillus having reached the breast through one or more of the other well recognized sources or routes of infection.

The demonstration of the origin, therefore, in many cases of tuberculosis of the breast is the purest guesswork and will be an impossible task, unless the disease is plainly a contiguous process to tuberculosis of some nearby tissue or organ.

In this connection note should be taken of the factors which favor and those which hinder the infection. Nothnagel has pointed out two important features; first is the variation in the histological characters of the tissues; secondly, the difference in the infectious material. Whether the difference in the virulence of the bacilli is real or fancied is not settled; but close study of the clinical behavior of the many sided lesions to be met with, all but convinces the observer that a difference in this condition must be admitted.

Lartigau (Nothnagel), as proof that the difference is a reality, cites the so called scrofulous lymph nodes as evidence of an infection by an attenuated organism; while miliary tuberculosis, the most malignant of all types, represents the disease as produced by the organism exhibiting the highest degree of virulence.

Trudeau and Behring (Nothnagel) found that cultivation on artificial media lowered the pathogenic power of the tubercle bacillus; while Zimmerman and Krompecher (Nothnagel) were unable to establish by artificial or other means any difference in this way.

SYMPTOMS.

Taken as a whole, nothing is so misleading about disease in general as symptoms, and this applies abundantly to tuberculosis of the breast. The symptoms in no two cases are the same. No two patients describe symptoms alike and no two observers construe them alike. If, with these facts, we consider the great length of time, or chronicity of the cases, in which symptoms appear and disappear, we appreciate the difficulty of identifying a tuberculous affection of the female breast, especially early in its history.

In the discrete "form" of the disease there is no deformity about the breast as a rule, nor is it even enlarged; objectively, and subjectively symptoms are so slight that notice is scarcely taken of them. There is no pain, no tenderness, and such lesions are more often accidentally discovered. The manifestations in one of my own cases were so very slight that the patient thought nothing of her condition till a fistulous opening appeared in the breast, and then her reference to it was of the most indifferent kind.

On the other hand, especially in the confluent variety, the gland is enlarged, uneven on its surface, presenting large and irregular masses within the gland, and is the source of constant pain and discomfort. The axillary lymph nodes are often implicated, and fistulae may mark the site of discharging abscesses or of other stages of the disintegrating process.

The axillary lymph nodes may or may not be the seat of tuberculosis. A palpable lymph node does not necessarily mean tuberculosis; nor does a non-palpable node mean the absence of tuberculosis. Brandle (10) in von Brun's clinic found the lymph glands enlarged in about eighty per cent. of the cases; and emphasized the importance as to whether the glands were primarily or secondarily involved, a feature first brought out by Dubrueil, Halsted, and LeCount (11), who express the opinion that a "retrogressive lymphatic tuberculosis from the axilla or chest cavity" is very probable, and state that a "primary" mammary tuberculosis has yet to be confirmed by autopsy.

The nipple may or may not be retracted in tuberculosis as is the case in malignant disease. Scott found the nipple retracted in only three per cent. of the cases. It is asserted by some that retraction of the nipple may occur sometimes before any other symptom can be detected.

It is quite evident that the many lesions occurring in the female breast may be confounded one with the other unless a careful clinical examination is supported or supplemented by a histological report from one skilled in such work. Without such aid as this from the laboratory, I feel certain that an erroneous diagnosis in one of my own cases would have led to the application of remedial measures far in excess of the demands in this instance.

CASE I.—This case was in a woman thirty-five years old, married, mother of three children. She had a good family and a good personal history. At her last confinement, which was about four years before I saw her, and about two years before the disease of the breast appeared, she had a "caked" breast, which as she stated was "lanced," following which healing occurred. The nodule was discovered in the upper left quadrant of the left breast, which became painful, tender, and finally broke down and discharged through a sinus under the nipple. The mass was hard, irregular, slightly tender to touch and, as stated, a sinus opening below the mass. The tumor was as large as an hen's egg, fixed to the skin with apparent dimpling. The nipple was markedly retracted, axillary lymph glands were palpable, and considerably larger than normal. There was no focus of the disease elsewhere. The patient's physician suspected the lesion to be a carcinoma which, minus the fistulous opening, was clinically correct. But as it had been the rule of having microscopical reports of all breast tumors before operating on them, no exception was made in this case. When the patient was anesthetized, an incision into the tumor permitted the removal of a small piece for examination. This was made (from frozen section) by Professor Zeit, whose report disclosed the case to be not malignant at all, but plainly a case of tuberculosis. The report stated that "sections showed a tuberculous mastitis"—no tubercle bacilli were found. Former plans for the operation were at once abandoned; the mass was dissected from the breast, all necrotic tissue carefully removed, and the axillary lymph nodes were not dissected out. The wound was closed except for drainage, which was removed in a few days; the patient's prompt recovery, state of health since the operation, now about three years, is added proof that the diagnosis was not a mistaken one.

The other case I desire to report is of some interest because, first, it was so typical that full appreciation of all its clinical manifestations should alone have justified a diagnosis; secondly, the process was

in both breasts, and there was an absence of the disease elsewhere in the body.

CASE II.—The patient was a woman fifty years old, married, mother of two children; family and personal history negative. One year previous to seeing the patient, she noticed a swelling of the left breast which occupied the upper and outer side, unaccompanied by pain or tenderness. Her health was in no way altered. In a short time after discovering the tumor of the left breast, a similar condition was found in the right breast located above and toward the inner side. The left breast some months later became tender, the surface over the tumor became red and, finally, a necrosis in the skin occurred, which gave rise to the discharge of a thin, whitish fluid. After the sinus had formed I saw the patient and found that the opening, which was lined with granulation tissue, led down to a hard tumor about the size of a walnut. The increase in the size of the breast was noted; the skin was not dimpled; the nipple not retracted. In the right breast, which on the surface appeared normal, was the mass above mentioned, fluctuating, painless, not fixed, and located not behind but within the breast. The lymph nodes were not enlarged in either arm pit, and these spaces were not opened up when the operation was performed. The clinical diagnosis was "primary" bilateral tuberculous disease involving the mammary glands, the only case I have found in which both glands were simultaneously involved. The microscopical diagnosis was made by Professor Zeit and it confirmed the clinical one. His report stated that the "microscopical pictures showed a tuberculous mastitis," and also "tubercle bacilli in sections stained for that purpose." The mass was dissected from the left breast, a liberal incision drained the cold abscess of the right breast, and after thoroughly curetting the walls of the abscess, drainage was employed in both wounds.

The patient recovered promptly and has remained free from trouble since that time, now about eight years.

In this rather brief description of tuberculosis of the mammary gland, it has been my aim to bring out for your consideration a few of its more important features and add two typical cases to the somewhat meager collection.

It should, I think, be plain that the differential diagnosis of breast lesions is beset by serious difficulties and that, if we would avoid error, it is our duty in every instance to have our clinical diagnosis indorsed by skilled pathologists before as well as after surgical operations. We have seen by experience that no one symptom or sign is pathognomic of any breast lesion and, that it is easy always to be mistaken. Bloodgood has recently pointed out his unbelief in the reliability of reports from frozen sections and said that he has never allowed one to influence his opinion nor alter the course he had planned as a result of the clinical evidence. This seems a very sweeping statement, and is one to which all will not agree. When reports of frozen sections are submitted by competent laboratory workers, dependence should, I think, be placed in them. Such reports, of course, should always be verified by later examinations of sections from the specimens removed.

CONCLUSIONS.

(1) Tuberculosis of the mammary gland is, perhaps, a more frequent affection than a study of the literature would lead us to believe.

(2) This affection occurs later in life than many reports would indicate, and its manifestations may not differ materially from a large number of other conditions both benign and malignant.

(3) The closeness with which mammary gland tuberculosis may imitate malignant disease and the great difference in the operative procedure necessary for the cure of each condition calls for an ac-

curate differential diagnosis in all cases, not after, but before the application of any therapeutic measure.

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100 STATE STREET.

ASTASIA-ABASIA:

*Presentation of a Case of the Third Degree.**

BY HEINRICH STERN, M. D.,
New York.

Instances of the symptom group known as astasia-abasia of which not quite sixty have been reported in the international literature, occur probably oftener than is generally assumed. Many instances are undoubtedly mistaken for a beginning stage of locomotor ataxia as was the case which I now present.

CASE.—The patient was fifty years old, a native of the United States, a harnessmaker by occupation, widower, and never had any children. He was never affected by any protracted sequels of the usual diseases of childhood. Thirty years ago he had subpræputial chancroids accompanied by bubo. There is no history of syphilis. He complained of uselessness of his lower extremities in walking and of a peculiar weakness of the upper extremities when standing or walking. The motor weakness gradually developed for the past nine months.

The examination did not reveal any gross lesion of an abdominal or thoracic organ. There was no heart affection of a functional nature, and the digestive tract appeared to be in quite a normal functional condition. There was no difficulty with the urine or the urinary organs, and the urine did not exhibit any features on which a renal disease or an affection of the lower urinary tract could be fastened. The examination of the nervous system showed the presence of all deep reflexes but no exaggeration or sluggishness of a single one. Babinski's reflex was absent. There was no rigidity nor spasm of any muscle. The cutaneous reflexes were not interfered with. Areas of anesthesia were not present nor were there any parasthetic phenomena as formication, sensation of numbness, or tingling in the legs. Romberg's sign was absent. The pupils were of equal size, nonmyotic, and did not exhibit the Argyll Robertson phenomenon. The accommodation was fair, but there was some evidence of choroidoretinitis.

When sitting on a chair the patient did not present anything unusual; the moment he was asked to rise he manifested pronounced fear, but after a little struggle landed and stood on his feet. Upon being asked to walk he evinced still greater fear, and a few seconds would elapse before he made a sharp turn with his body to the right or left whereby the one foot remained in a fixed condition, while the other was turned toward the direction in which he intended to take the first step. The first step was invariably taken by the foot which turned with the body. The manœuvres of the patient from the time he rose from the chair until the first step was undertaken were quite

*Presented at the meeting of the Manhattan Medical Society, March 25, 1909.

stereotyped, and were the same on each occasion. They might, however, vary somewhat in length. At any rate, these manœuvres gave one a rather "theatrical" impression, as if an automaton in human form was ready to start on a walk. While standing, the patient wavered on his feet and the body swayed as if he was trying to maintain his balance, and at this time the patient tried to seize any object by which he might support himself. However, this was not invariably the case, as he frequently found his balance without any extraneous support. As soon as the patient found his equilibrium, there was no increased incoordination when the feet were placed in juxtaposition and the eyes were closed (Romberg's sign). The first steps which he took were invariably a shuffling of the feet, after ten or twelve repeated movements of this kind locomotion was started, at first toddling, each step not longer than one inch, the feet being dragged all the time. Soon after the steps became longer, but the feet still dragged along. However, a step of normal length was never attained. Occasionally the patient assumed a somewhat ataxic gait, that is, the legs seemed to be stiffened, which imparted to the walk a spastic quality. When the patient was standing with closed eyes he was also able to walk with closed eyes, and this without any noticeable degree of unsteadiness. When standing for any length of time the patient occasionally noticed a sudden tottering of the legs, which as suddenly disappeared. Lying on the examination table the muscular strength seemed to be unimpaired and there was no disturbance at all of the integrity of the movements, and he could then perform any movement of his legs or feet upon command without undue exertion. The weakness completely disappeared when he was in bed, and no matter how tired he was, he never experienced any difficulty in moving at will and in any direction his entire lower extremities or any part thereof.

The patient exhibited various hysterical phenomena; he had an anxious expression and vacant look, spells of crying, and occasionally hysterical tremor. His psychic symptoms consisted of a mild melancholy. There was no loss of memory.

This case is undoubtedly one of astasia-abasia of the third, the lightest degree. It is true, it resembles somewhat certain early types of locomotor ataxia; however, the characteristic features of locomotor ataxia including the syphilitic history are missing, and there are no fulgurant pains, and no Argyll Robertson pupil; the deep reflexes are present, there are no defects of speech and there is absence of Romberg's sign. And again, all muscular incoordination vanishes as soon as the patient is on his back.

The symptomatology of this case differs from that of multiple sclerosis in that the affection sets in twenty or twenty-five years later than multiple sclerosis is wont to do. There are no exaggerated reflexes, no scanning speech, and none of the mental disturbances which are usually encountered in disseminated sclerosis.

250 WEST SEVENTY-THIRD STREET.

NECESSITY FOR ROUTINE EXAMINATION OF THE RECTUM IN INTESTINAL DISEASES:

*Illustrative Cases.**

By DWIGHT HENDERSON MURRAY, M. D.
Syracuse, N. Y.

To a specialist in any line of medical or surgical work it would seem quite unnecessary to emphasize the necessity for special examination. I am not presenting it to this society because I think you need to be admonished, but because I hope the cases reported may be of interest.

Any and every patient who consults a physician is entitled to have a thorough and painstaking effort made for diagnosis. When a patient objects to an examination deemed necessary by his medical adviser, he should be refused treatment. Patients frequently make a diagnosis of their own trouble or bring the diagnosis of Dr. Blank saying that they want medicine for it.

We should never accept the diagnosis of any man, however eminent, for our guide in treatment. We should make our diagnosis by personal examination and shoulder our own responsibility. Some physicians accept the statement of the patient having rectal disease and at once prescribe an ointment or suppository, and make no examination, perhaps because at best it is disagreeable for the patient and distasteful to the physician.

Thus a case that to-day would be operable and a cure result if correctly diagnosed, would be inoperable in six months or a year, and death result.

In the history of cases taken by us, it is of the utmost importance that the patient be closely catechised as to the bowel movements and learn whether constipated and how long, whether a diarrhoea exists, how long, and endeavor to learn the cause. If of long duration in either case a thorough examination including the sigmoidoscope should be made and then an examination of the faeces by a competent bacteriologist. The color, consistence, shape, size, and odor may all give important information and should be elicited.

Pain is another important symptom and should be subjected to careful inquiry, many patients speak of a pain in the stomach and have reference to a pain anywhere from the stomach to the anus. We should differentiate it carefully whether local, reflex, constant, or paroxysmal; the type of pain, and whether present or worse before, during, or after a movement; whether there is any discharge from the rectum or abnormal moisture about the anus, e.g., mucus, pus, or blood; if blood, whether fresh or not, and the quantity; also whether there are any protrusions.

All these are of great importance in arriving at the cause of the patient being obliged to consult us, and even if the symptoms complained of are not apparently the result of trouble in the lower intestines, yet we will find many cases where the reward for our trouble will be the discovery of the real ailment from which the patient is suffering.

This is frequently true in the early stages of cancer of the rectum. I have seen many cases in consultation where the patient was found to have an inoperable cancer when they thought their trouble was "piles" and considered it only a slight thing hardly worthy of more notice than to apply an ointment or introduce suppositories. The last case in the series is a good illustration of the last proposition.

American physicians are no more lax in examining these parts than are those of Europe, as two of the cases bear witness. I do not report these cases in order to criticize, because none of us are perfect. I make my own share of mistakes of omission and commission, but all may gain valuable lessons from their own errors if they will but heed them.

It is not my purpose to take up the time of the

*Read before the American Proctological Society at Atlantic City, June 8, 1909.

society emphasizing the necessity but rather to report in a concise way a few cases that illustrate the points far better than I can describe them.

CASE I.—February 25, 1907. Mrs. B., age fifty-six, was referred to me because of her intractable autointoxication, and that healing after operative work in her nose was greatly retarded. She stated that she had always been constipated, that she had a torpid liver and rheumatic and neuralgic pains all over her body. She had cold hands and feet, her body was cold most of the time; had not known what it was to have warm ears since childhood, and often wrapped them on warm days during the summer as much as some people would in midwinter. Her appetite was not good, and she had much digestive trouble. She had been treated by stomach specialists in Europe and this country, the best that she could find, and had never had a rectal examination from any of these eminent men, though she told them she occasionally had rectal bleeding.

Examination showed an exceedingly tight sphincter, an irritable ulcer in the centre of the posterior wall of the anal canal with a small sentinel at the lower edge; there was a chronic atrophic catarrh of the upper rectum and sigmoid. I advised dilatation of the sphincter and an operation for the cure of the ulcer, which was accepted, and from the time she was able to rid her system of autointoxication she made a rapid improvement in every way.

Instead of being obliged to cover her head and ears as previously she would actually lie in her bed with the windows open at opposite sides of her room. Her digestion improved, and the nasal trouble also healed quite promptly.

On the 10th of April, 1907, I began giving her some rectal treatments for the atrophic condition of the large intestine with the result that her bowels moved without assistance and she made rapid improvement.

I did not expect and do not expect that she will ever be a perfectly healthy woman, but report this case to show how possibly she might have had improvement or cure many years previously had a thorough and complete examination been made and proper treatment instituted.

CASE II.—May 7, 1906. Mrs. C., age forty-three, was referred to me because of a chronic diarrhoea which her physician was unable to check. She had lost many pounds in weight. Her family history showed that one sister had died at twenty-three years of age of tuberculosis. She said that fourteen years ago, after the birth of her second child, she had internal hemorrhoids which bled occasionally and had troubled her from time to time.

On the 20th of January, 1906, she began having profuse diarrhoea without any apparent cause, and for a month had from ten to fifteen profuse watery stools daily, since which her bowels had been moving in a similar way from six to eight times a day. She was becoming quite weak, cold hands and feet, cold clammy sweat over her body, and was quite depressed.

Examination showed internal hemorrhoids, not large or inflamed, one diseased crypt posteriorly, sphincter muscle tight, and considerable tenderness in the ampulla of the rectum. Proctoscopic examination showed a subacute congestion of the mucous membrane of the sigmoid. I advised a bacteriological examination of the bowel discharge, which was done by Dr. May, who reported: "No amoeba, no tubercle bacilli, no pus or ova of intestinal parasites, the usual flora of bacteria," but he found a large excess of yeast ferment.

I gave treatments which included irrigation of the large intestines with a prompt improvement of the symptoms. On May 20th after several bacteriological examinations, Dr. May reported that there was no more yeast cells or pathogenic bacteria. At this time she was having two or three partly formed stools daily and was gaining in strength, she went to the northern woods for rest and recuperation. The last I heard from her she had no return of the profuse diarrhoea.

I report this case particularly to show the necessity for bacteriological examination in all cases of diarrhoea.

CASE III.—January 11, 1904. Mr. D., age forty-three, machinist, consulted me at the request of his physician. His complaint was internal hemorrhoids and dyspepsia; he

had lost thirty-three pounds in weight, and for the better part of a year had only been able to work a part of the time.

In May, 1903, he was under the care of a surgeon, who treated him for four months by lavage; at the end of this time he was no better, and the surgeon told him that the only help he could see for him would be gastroenterostomy, explaining to him what the operation was, after which the patient promptly went to another physician, who performed lavage for three months more without benefit.

He then consulted the physician who referred him to me, who in taking his history found that he had some rectal trouble. Examination showed that he had very large internal hemorrhoids, and I advised a radical operation, which was accepted. He entered the hospital February 1st and was operated upon by the clamp and cautery combined method, making a good recovery.

On the 20th of March, seven weeks after the operation, he told me that he felt entirely well, was working every day, had gained six pounds in weight, bowels moving nicely, and was not taking medicine of any kind and was able to eat all kinds of food and feel no distress. I have seen him recently and he has remained well and able to work without interruption since that time.

This is clearly a case where rectal examination and operation would have saved the patient at least seven months of stomach washing and a possible gastroenterostomy.

CASE IV.—February 16, 1909, I was called to see Mr. E., aged fifty, merchant. When a boy he had a great amount of trouble with his bladder, which improved in later years. He had had asthma until within the last few years, had some digestive trouble for several years past, but had had no serious trouble from it until about fifteen or eighteen months ago. One year ago he went to Carlsbad, Austria, for a few months' treatment and came home in August feeling better. He had gained about twenty pounds as a result of forced feeding.

In August he sought medical advice for intestinal indigestion. An examination of the rectum was made for the first time, but no growth was found, though the rectum was congested, and his physician made four local treatments through the proctoscope. He had considerable pain in the lower abdomen for the greater part of the year, and now his left groin became affected, and the pain was projected through to his back.

From September 12, 1908, to January 4, 1909, he sent to the office for medicine which seemed to help him.

At this time, one day while in the store he was taken with an intense pain through the left groin and back, a friend who happened in took him at once to a professional masseur, who gave him deep abdominal massage, used a vibrator and powerful light over the abdomen. Three of these treatments gave him great distress, following which blood was noticed in his stools, and as he expressed it, "nearly killed him."

After this he went to a different physician, who, he said, made no physical examination, but sent him regularly to an oculist for examination during six weeks.

February 14th he recalled the physician who cared for him during the fall. He was greatly emaciated, having lost twenty pounds, and was suffering intensely all the time. A rectal examination revealed a hard mass at the entrance to the sigmoid, firmly fixed and painful, the mass was palpable in the left groin and about three to four inches long.

I was called on the 16th and could only confirm the findings of the attending physician, giving an unfavorable prognosis.

On March 6th he was removed to the hospital and operated upon because of obstruction.

April 17th a second operation was made for removal of the growth, at which I was present, and the growth involved the sigmoid, being intraintestinal, firmly adherent to the posterior pelvic wall. It was hard, $3\frac{1}{2}$ by $1\frac{1}{2}$ inches in size, and the lumen remaining patulous would scarcely admit a slate pencil. The intestines were adherent in many places, the adhesions being of recent origin.

CASE V.—September 20, 1908, I was called to see Miss F., age twenty years, school girl, family history negative, except that the mother's uncle died of tuberculosis at forty years of age. Her mother and uncle were said to have had scrofula. She had the usual children's diseases, on enlarged cervical glands had been removed some years previ-

ously. She had lost much flesh and was in an exhausted physical condition, present complaint diarrhœa containing blood and pus.

She was constipated up to two years ago, at which time she began to notice some griping through the abdomen just before her bowels moved. She was strong, healthy, and weighed one hundred and forty pounds before her illness began. Following the griping she noticed a small amount of mucus and blood in February, 1907, which continued and gradually increased in quantity. She was treated during the twenty months previous to the time I was called in consultation by several prominent and painstaking physicians. No proctoscopic examination was made and only a digital examination made a few weeks before I was called and immediately preceding the last change in physicians. Prescriptions containing hydrastis, water, and glycerin, also bismuth subgallate were used. She seemed to improve while taking these and with the consent of the physician then in charge she went to Indiana, where she spent quite a little time, and returned apparently somewhat improved. Before going west she was having from seven to twelve stools daily, containing blood and mucus. On her return she was having two stools daily and some of these were formed.

Shortly after her return to her home she became worse and the treatment then included the use of high rectal injections of normal saline, which were self administered, and it is questionable how successfully they were given, as she told me she was never sure the saline entered the sigmoid. She continually lost flesh and grew weaker until February 15, 1907, when she was put to bed, and continued to have from twelve to fifteen stools daily of the same character as previously mentioned.

She remained in bed for seven months, with the windows wide open during the whole winter and her physician felt sure there was improvement, although the bowel movements continued as before.

During the summer she was carried to the porch daily. The blood and mucus never ceased passing her bowels, though sometimes movements would grow less frequent for a time and then increase. At this time oil and lime water alternating with hydrastis were given by low injection.

In August, 1908, an examination of the bowel movements was made, but no tubercle bacilli or amœba were found. An examination of the blood was also made, but no report given. On September 15th the physician who invited me to see the patient was called. It was reported to him that she never had an increase of temperature, but after he was called her temperature ranged from normal to 103.8° F. He requested that I be called to see her, which was done on September 20th.

I found her extremely emaciated, anæmic, and so weak that she could scarcely raise her head from the pillow. The heart sounds were feeble, pulse compressible, rapid, and weak.

On the 21st I made a proctoscopic examination and found some large ulcerations in the anal canal and near the entrance to the sigmoid, also stricture in the sigmoid portion of the large intestine. I examined carefully to find a possible polypus, but no growths were located below the stricture, and it is not impossible that a polypus existed above the stricture. A large daily quantity of reddish brown liquid with some fecal matter was passing from her bowels, probably not less than twenty times in twenty-four hours. On standing the liquid separated into two layers, the upper being blood and the lower yellowish-like pus.

She was removed to the hospital, and the feces were examined on several occasions showing blood, some large round, deep, staining cells, that might possibly have been amœba, but the pathologist was not sure. No tubercle bacilli were found.

The blood examination at the time I first saw her showed a profound secondary anemia. Hæmoglobin, forty per cent.; red blood corpuscles, 2,600,000; white blood corpuscles, 10,200; polynuclears, seventy-six per cent.; mononuclears, fifteen per cent.; giant cells, five per cent.; eosinophiles, 3½ per cent.; no nucleated red blood cells.

I made a most unfavorable prognosis to the parents and told them that without an operation she would certainly die, and very little hope for recovery with one. I attempted to give her local treatments on five different days, but without benefit, after which preparations were made to do an appendicostomy following a direct transfusion of blood. Just as arrangements had been completed for the

operation, which was only suggested as a *dernier resort*, fortunately for all concerned she died of exhaustion during the night previous to the time appointed for the operation.

To physicians it seems to me that the most important lesson to be drawn from a case of this kind is—that no case of diarrhœa continuing more than long enough to entirely clear the bowel of any irritating material, whether blood is contained in the discharge or not, should be allowed to continue without a more careful local examination.

I feel quite sure that if the local examination had been made in this case a year previous to the time it was made, that either an appendicostomy or an inguinal colostomy would have been suggested, and the life of this young woman probably saved.

800 UNIVERSITY BLOCK.

ŒSOPHAGOSCOPY IN THE REMOVAL OF FOREIGN BODIES.

BY RICHARD H. JOHNSTON, M. D.,
Baltimore.

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That œsophagoscopy is the logical method of removing foreign bodies from the œsophagus is conceded by all who have had experience in this line of work. The fact that one sees what he is doing through the œsophagoscope makes the method far superior to the use of the most delicate instrument used in the dark. For some time past medical journals have contained many articles on the œsophagoscope; most of the authors speak enthusiastically as to its usefulness and its future possibilities. Strange as it may seem there are still medical men, skilled in diagnosis, who rather ridicule the idea that œsophagoscopy is valuable. Unfortunately it is difficult to convince those who have not seen. It has been my experience that medical men are sceptical as to the value of any innovation in medicine; after I have shown them the ease with which the œsophagoscope is passed and the remarkably clear view to be obtained through it, they are changed from doubters to ardent admirers of the instrument. It has been my good fortune to see and remove two foreign bodies from the œsophagus in the last few months. One case was particularly interesting from the character of the foreign body and illustrated the worthlessness of histories in some patients.

CASE I.—A woman, sixty-seven years old, while eating breakfast, swallowed a piece of ham which was only as large as the terminal phalanx of the index finger according to her story. She immediately choked a few seconds and then had a paroxysm of coughing. There remained a sense of fullness in the throat, and to her surprise all food and drink were instantly regurgitated. A physician was called in and passed a tube into the stomach; he assured her there was no obstruction in the œsophagus. When the tube was passed, the patient became cyanotic and had violent paroxysms of coughing. During the day she made repeated attempts to swallow food of various consistency but always with regurgitation. The following day Dr. E. B. Freeman was called in and he promptly sent her to the Presbyterian Hospital for œsophagoscopy. She reached the hospital thirty-six hours after the accident; as she had eaten nothing, she was weak and nervous. She was given a hypodermic injection of morphine and atropine, the throat was anesthetized with a ten per cent. cocaine solution, and Jackson's separable speculum introduced in the sitting, extended position. The larynx was pulled forward and a mass resembling a carcinomatous ulceration was seen. More careful inspection and the use of the probe

demonstrated that what we saw was a foreign body. With Plau's forceps the object was seized and an attempt at extraction made. Something was torn away by the forceps and, when brought out, proved to be a piece of ham. For at least forty-five minutes pieces of ham were removed until finally the œsophagus was clear. Unfortunately we did not save the pieces, but we saw that the foreign body was several times larger than the terminal phalanx of the index finger. The patient stood the operation well and swallowed water immediately afterwards. She went to her home the same afternoon. Dr. Freeman who had charge of her informed me that for a week she had a rise of temperature and a cough but made a good recovery. The tube introduced by the first physician certainly did not pass into the stomach; I believe it went into the trachea and caused the rise in temperature with the cough and expectoration. Why the ham did not choke the patient to death is a mystery; it slipped past the larynx and lodged in the introitus œsophagi just at the cricoid cartilage. Without the aid of the œsophagoscope, an œsophagotomy would have been required with probable fatal result at her age.

If anyone had seen this patient and the comparative ease with which she was relieved, he would no longer have any doubt as to the usefulness and necessity of the œsophagoscope.

CASE II.—The second patient was a child, two years old, who, while playing on the street, picked up a lead disc the size of a five cent piece and attempted to swallow it. That night she vomited several times and was unable to swallow solid food. Two days later she was taken to St. Joseph's Hospital where it was found that she was unable to swallow anything but a little liquid. She apparently had no pain. A radiograph taken that day showed a shadow at the seventh cervical vertebra. The next day the patient was etherized and the upper end of the œsophagus examined with Jackson's child speculum in the extended position. On pulling the larynx upward, the disc was seen tightly wedged in the œsophagus in a lateral position. Jackson's short forceps was passed through the tube and the disc seized, but the forceps refused to hold. After two or three attempts it was found that one blade of the forceps had sprung and did not meet the other squarely. With a second forceps the disc was seized and removed. While the foreign body was passing the larynx, the patient became deeply cyanotic from pressure. When this point was passed, recovery was prompt. Though the disc was so tightly grasped by the œsophageal walls and much force was needed to remove it, there was little bleeding. The patient was kept on cold, liquid diet a few days and made a good recovery.

In this case the indications for œsophagotomy were urgent because the foreign body was securely fixed and would not have passed into the stomach. Blind instrumentation would have been dangerous because of the sharp edges of the disc and the probability of rupture of the œsophagus. Since the œsophagoscope has come into use there is no excuse for the blind introduction of instruments into the œsophagus. The passage of the tube is not difficult and can be learned by any one skilled in the use of throat instruments. Lesions are clearly seen through the œsophagoscope, and the smallest object can be removed.

The instrument is of value from a negative standpoint as the following three cases will prove:

CASE III.—A lady, while at an oyster supper, attempted to swallow a large oyster without masticating it. She choked a few seconds and then had a sensation of fullness in the throat followed by pain which radiated in different directions and rapidly grew worse until swallowing liquids was almost impossible. She had a rise of temperature and in a few days was completely prostrated. She was etherized and examined in the extended position with Jackson's child speculum. The larynx was pulled up and the upper end of the œsophagus was red, swollen, and œdematous showing a large area of acute inflammation. The trouble was produced by a piece of shell attached to the oyster

which had scratched the mucous membrane. The patient was kept perfectly quiet and given cold diet and cracked ice with ice packs externally. For three days she suffered greatly on attempting to swallow. When we had determined that no foreign body was present, treatment was simple.

CASE IV.—A little girl, two years old, was thought to have swallowed a small pin. Her mother took her to a physician who examined the throat with instruments and finger but found nothing. Her uncle, who was a physician, brought her to me for examination. With the tongue depressor nothing could be seen and the mirror examination was not successful. The next morning a radiograph showed a shadow resembling a pin lying diagonally across the œsophagus about the second dorsal vertebra. The patient was etherized and the upper end of the œsophagus first examined with Jackson's long speculum. On the wall of the pharynx low down we saw an epithelial abrasion, probably made by the examining finger of the family physician. While the wound was not serious, the pain from it had alarmed the mother who was sure that the sore throat was caused by the pin. The 7 mm. œsophagoscope was then passed and the œsophagus examined with great care to the cardia. No pin was found. The little patient made a prompt recovery.

CASE V.—A lady while eating luncheon swallowed a bone. She was not certain about the size of the foreign body but located it at the cricoid cartilage. She was examined in the sitting position under cocaine anesthesia. An œdematous condition of the upper end of the œsophagus was the only lesion found. She was assured that no foreign body was present. She had some pain for a few days due no doubt to the scratching of the mucous membrane, but made a good recovery.

It will be seen that œsophagoscopy is of value in suspected foreign body. It quickly tells us whether the lesion is due to the presence of a foreign body or to acute inflammation.

919 NORTH CHARLES STREET.

A SIMPLE METHOD FOR THE TREATMENT OF SUPPURATING BUBO.

By J. A. MURTAGH, M. D.,
Fort William McKinley, Rizal, P. I.,
Captain, Medical Corps, United States Army.

The purpose of this paper is to report upon a method of treatment for bubo, which offers an improvement upon all methods with which I am familiar or which I find mentioned in standard works or recent literature. The problem confronting us in the treatment of this condition is the question of evacuation of the pus and enucleation of the remaining infected or suppurating glandular tissue and subsequent healing of what is from the first observation an infected skin wound. The usual methods of treatment in vogue have for their object the incision of the bubo and evacuation of its contents—some advocate the dissection of the diseased gland or glands, others simple incision and evacuation of the pus followed by injection of an antiseptic emulsion or ointment such as iodoform emulsion or bismuth paste. The rational treatment of this condition requires that the cause of the glandular infection be removed, and it is to this phase of the condition that I wish to call attention. The majority of cases of suppurating buboes are caused by chancroid infection, and it is due to absorption from the original foci that the continuance of the suppuration takes place even after very complete and careful enucleation of the gland.

This condition is familiar to every one treating such patients, and it is doubtless also the common experience that the time elapsing in the recovery of

these patients is out of all proportion to the gravity of local condition, which in the usual active occupations, especially in the military service, acts as a continual factor in rendering men unfit to perform duty for months in many cases, and even the most favorable examples treated by the usual methods will require several weeks to permit return to active work.

It is to the kindness of Captain William L. Keller, Medical Corps, U. S. A., that I am indebted for the opportunity of reporting upon a method of treatment devised by himself which materially hastens the period of healing in this condition and insures rapid recovery without a noticeable scar or other cosmetic defect. The practice of Captain Keller has been for the past seven years to destroy the source of infection in the chancroidal ulcer with the actual cautery, thus converting a specific infectious ulcer into a simple granulating surface. This he does by a thorough application of the Paquelin cautery to the several chancroidal ulcers. His next step is to incise the healthy skin in an area one to one and one half inches below the bubo, passing the knife through the healthy tissue, and reaching the bubo which is incised subcutaneously. If pus is present it is evacuated by pressure, and by means of a curette every portion of the diseased gland is removed through the same incision. This curettage should include all portions of the gland and adjacent glands in close proximity to the infected gland. The thorough irrigation of this subcutaneous glandular cavity with a 1 in 2000 bichloride solution completes the operation as far as the removal of the diseased glandular tissue is concerned. More or less hemorrhagic oozing may be present after this, but it is almost completely checked by the injection into the cavity of a small quantity of hydrogen peroxide, which is not allowed to remain and distend the cavity but is promptly removed by thorough irrigation with sterile water.

After repeated expression by pressure of bloody liquid that may appear at the lips of the wound the operation is completed by the filling of the cavity by injection of a ten per cent. iodoform emulsion in petrolatum, which is prepared in the following manner: The iodoform in petrolatum is heated to the melting point and agitated by drawing up and expelling from a syringe several times, to equally redistribute the iodoform that has subsided in the process of melting the petrolatum. Several glass penis syringes are filled with this melted iodoform emulsion in this way and then immediately placed in ice cold water for ten minutes when it will become sufficiently solid to remain in the cavity when injected—should there be any slight hemorrhage at this time the emulsion will check it almost immediately. A firm compress with a generous dressing is now applied and retained by a spica bandage; the patient is returned to bed where he remains for at least three days, when he may be allowed to move about. The dressing is renewed in about the same interval, and as often as may be required later on account of the slight discharge which may appear for several days after the operation. At subsequent dressings it may be required that the cavity be refilled by the iodoform petrolatum emulsion.

The average length of time required by this treatment for restoration to duty has been in our experience about twelve and one half days. These fig-

ures are based upon a series of 150 cases treated by Captain Keller during his service at Fort William McKinley, Rizal, P. I., and over fifty cases treated by myself in a period of four months succeeding Captain Keller's departure from this station.

The points upon which the success of the treatment depend as formulated by Captain Keller are briefly as follows:

1. Thorough application of the actual cautery to the infected ulcer.
2. Incision into healthy skin usually in an area one to one and one half inches covering the bubo.
3. Thorough removal of the diseased glandular tissue and complete irrigation of the cavity by the method as described.
4. Thorough drying of the cavity as nearly as possible by pressure, before introducing the emulsion, and rest in bed for a few days after the operation.

The advantages of this method of treatment may be summed up as follows:

1. Immediate relief from pain and discomfort.
2. Rapid healing of the skin incision and of the diseased glandular cavity.
3. Absence of a painful and disfiguring scar.
4. Avoidance of the long tedious period of recovery usually experienced by other methods.

A number of verbal communications from medical officers applying this method of treatment corroborate what has been summed up in these advantages. This together with my experience with my series of cases tempted me to the publication of this method of treatment, hoping to gain consideration for this procedure in the treatment of this condition.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Closed August 10, 1909.)

XC.—How do you treat typhoid fever? (Answers due not later than September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUSPEND DOUBTS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LX XVIII has been awarded to Dr. W. A. Wallace, Spartanburg, S. C., whose article appeared on page 419.

PRIZE QUESTION LXXXVIII. THE TREATMENT OF EPISTAXIS.

(Continued from page 408.)

Dr. Philip Wilfrid Travis Moxom, of Brooklyn, N. Y., remarks:

Probably every one has nosebleed at some time in his or her life. In the majority of cases, the hemorrhage either ceases spontaneously after a longer or shorter time, or is readily controlled by simple measures. Occasionally, however, cases occur, which severely tax the skill of the attendant.

Consideration of the ætiology is of prime importance, especially in cases of frequently recurring hæmorrhage. In every case the attempt should be made to discover the source of the bleeding by a careful inspection of the nares and nasopharynx. Blood from the fauces, larynx, or stomach will rarely issue from the nose. More often, blood in the mouth may come from the posterior nares or nasopharynx.

Ætiology: Epistaxis may be a symptom of trauma, of local pathological conditions, of general diseases, or it may be of a vicarious nature.

Trauma: This includes blows on the nose, picking the nose, entrance of foreign bodies, and intranasal operations. Bleeding from the nose may also occur in fractures of the base of the skull.

Local pathological conditions: Rhinoliths, septal ulcers, bone necrosis (particularly of syphilitic origin), benign and malignant neoplasms, especially those possessing angiomatous characteristics. Septal spurs and hypertrophied turbinates, by inducing the formation of ulcers from pressure, may be an indirect cause of nasal bleeding. Adenoids rarely cause epistaxis.

General diseases: Sometimes nosebleed occurs with typhoid, malaria, the exanthemata, diphtheria, influenza, etc. Occasionally, individuals suffering with anæmia, arteriosclerosis, cardiac or renal or hepatic disease are subject to nasal hæmorrhage.

Vicarious epistaxis: The occurrence of this form of nosebleed is doubted by many. The bleeding occurs, either with, or in the place of, the normal menstrual flow.

Treatment: The head should be always held erect or a little backward. Ice, held in the mouth, or applied to the outside of the nose or to the nape of the neck, seems to be of some value. Compression of the alæ nasi with the thumb and forefinger, by favoring clot formation, often suffices to check the bleeding.

Injections of hot saline solution are useful for cleansing the nares, when searching for the bleeding point, and sometimes avail to stop the hæmorrhage. A more efficient styptic is hydrogen peroxide, applied on pledgets of cotton or injected into the nares. When the bleeding is persistent and not too profuse, nothing works better than adrenalin chloride, in 1 in 5000 solution, applied on pledgets of cotton.

When the bleeding point can be discovered, it is frequently found on the anterior inferior portion of the septum. Here, chromic acid or silver nitrate crystals, fused on a probe, or a galvanocautery point, heated to a dull cherry red, will usually check the bleeding at once. In using the galvanocautery care must be taken to keep the point glowing until it is removed from the place of application. If it is allowed to cool in situ, the eschar will be torn away and the bleeding started afresh.

When intranasal pathological conditions are present, these must, of course, be removed to obtain permanent cure of the epistaxis. Operations on the turbinates and septum are often followed by free bleeding, which usually ceases spontaneously. Insufflations of compound zinc stearate powder, in these cases, hastens clot formation, and the arrest

of hæmorrhage. Occasionally it becomes necessary to use some form of packing. A tampon of compressed cotton may be used. The nasal chamber should be quickly cleansed, the tampon inserted and caused to swell by moistening it with a little sterile water or mild antiseptic solution. This procedure readily checks the bleeding, but is objectionable because it favors infection, and because upon withdrawal of the tampon, which should be done in twenty-four hours, the hæmorrhage is likely to be started anew. A better method is, with the aid of a nasal speculum, to pack the nasal chamber lightly, from the nasopharynx forward to the vestibule, with narrow strips of sterile petrolatum gauze.

Rarely, plugging the posterior nares is required. Bellocq's cannula is the classical instrument for the purpose, but is not necessary. A Eustachian catheter answers very well. The catheter is passed the nasal chamber to the nasopharynx. Through it is pushed a piece of heavy silk ligature, waxed, or a piece of catgut, until the free end appears in the oropharynx. This is seized and drawn out through the mouth. About eight inches from the mouth end of the cord a wad of cotton or gauze is tied. The catheter is then removed and by pulling on the nose end of the cord the plug is brought into place and held by tying together the two ends of the cord over the upper lip. The anterior nares are then packed.

Epistaxis occurring with acute febrile disease, as the exanthemata, typhoid, etc., seldom requires treatment. Rarely, the nosebleed may be distinctly remedial, as in a case seen within a year, of double pneumonia in a patient with chronic valvular disease. During the height of the attack profuse epistaxis occurred, with noticeable relief to the embarrassed heart.

In addition to the local measures for the immediate attack, cases in which recurrent attacks of nosebleed are associated with faulty blood states as anæmia, or with disturbances of the circulation, such as occur in chronic cardiac, renal, and hepatic disease, must receive appropriate treatment for the underlying conditions. In vicarious epistaxis, attention should be directed to the pelvic organs. Amelioration of pathological conditions there may alleviate the epistaxis. In rare instances, where normal menstruation cannot occur, the periodic nosebleed seems to act as a safety valve, and requires no treatment.

Dr. Samuel Wood Thurber, of New York, writes:

Epistaxis is best treated by appreciating the fact that, in at least ninety-six per cent. of cases, the bleeding takes place from the arterioles and venules on the nasal septum in the region known as "Kieselbach's spot," an area about one half inch from the nasal orifice and about one quarter inch from the nasal floor. These vessels can be seen during an active bleeding or after it has been stopped, and their destruction will usually do away with any further trouble. The reason why these vessels should rupture is to be sought in several directions, and a consideration of these causes is necessary before treatment can be logically undertaken.

Epistaxis is caused by both general and local con-

ditions. Those diseases that are associated with an increased blood pressure, such as nephritis, cirrhosis of any organ, alcoholic excess and high living, are common causes and, on the other hand, blood conditions as found in anæmia, diabetes, and hæmophilia are factors of less moment. Some infectious diseases, such as typhoid fever, are apt to start with a nosebleed.

The local causes are irregularities in the nasal septum upon which there is often deposited dust from the inspired air forming crusts which macerate the underlying mucous membrane and catarrhal ulcers of the septum. It is in these two local conditions that we most frequently meet with the erosion of bloodvessel walls and consequent hæmorrhage.

The first thing to do for a patient with epistaxis is to look for the bleeding point. If the hæmorrhage is so brisk that it is impossible to make an examination of the nose, a cold thirty-three per cent. solution of hydrogen peroxide may be syringed through the nose. If this does not stop the bleeding, it is a waste of time to try liquid astringents, and the nose should be packed, on the side involved, with a strip of gauze through which a strong thread has been run so that the end first inserted, well posteriorly, can be pulled forward against the gauze as it is packed in and thus preventing any of the packing from hanging into the pharynx. It is a good plan to impregnate this gauze with liquid petrolatum; this makes it easy to remove and has a marked effect in checking the bleeding. In forty-eight hours, remove as much of the packing as will come away easily, and in twenty-four hours more the whole of it can be removed and the nose inspected. If the packing is pulled out before the nasal secretions have loosened it somewhat, one is liable to start the bleeding all over again. Thus, it is better to leave it alone for forty-eight hours.

Now, with the hæmorrhage stopped or under control, it is only necessary to destroy the ruptured vessel by some cautery to prevent recurrence. The galvano-cautery or chromic or trichloroacetic acids may be used and their application limited to the point of rupture which may usually be seen as a small red spot on the septum in the before mentioned area. A small amount of adrenalin ointment on the cauterized area for a week, at night, will help in the shedding of the slough.

For those rare conditions where there is a general oozing from the nasal mucous membrane, due to a constitutional disease, it may be necessary to pack the nose by using the liquid petrolatum gauze strip inserted well posteriorly and drawn forward by the thread, and by giving the patient calcium lactate, 40 grains three times a day, packing to be removed as indicated in the previous part of this article. For the high blood pressure give aconite, veratrum viride, or potassium iodide, and treat any constitutional disease as the indications demand.

Postoperative epistaxis should be guarded against by light packing in the first place and, if it should occur, pressure by the insertion of Simpson's modification of the Bernay sponge will control it. This sponge of compressed cotton should be removed by splitting it and leaving that part that is usually adherent to the wound *in situ* until loosened by secretions.

Dr. Henry C. Becker, of New York, observes:

The treatment is primarily local, and general only secondarily. In all cases rhinoscopy is to be performed in order to ascertain the exact site, nature, and severity of the hæmorrhage; in those cases in which the nostril is occluded by coagula it is best to remove the same with a hot nasal douche of normal saline solution employing a broad nasal tip on the syringe; contrary to general belief a hot cleansing solution is greater in its hæmostatic action than a soft blood clot; a rapid inspection is now made of the anterior nasal fossa. The hæmorrhage is usually a capillary oozing from the lower anterior portion of the nasal septum, just inside the vestibule; rarely it is arterial in character. An applicator, the end wound with cotton saturated with a solution of adrenalin chloride, 1 in 1000, is applied firmly to the site of the hæmorrhage or a pledget of cotton saturated with the same solution is inserted into the nostril in apposition to the bleeding area; this may be left in place for about five minutes when it is removed; if the hæmorrhage has been capillary apply to the site by means of an applicator a solution of silver nitrate, five per cent. strength; if the hæmorrhage has been arterial apply to the bleeding point a crystal of chromic acid fused on the end of a probe. If the hæmorrhage has been due to a loss of epithelium with a consequent leakage from the fine capillaries the patient should be cautioned against picking the nose, accidental blows and injuries, and the incautious use of the handkerchief; measures should be adopted that will tend to promote a reformation of the epithelium over the hæmorrhagic area; this area should receive applications of a silver nitrate solution of five per cent. strength every second or third day, and the patient be directed to apply at bed time a soft bland ointment, such as petrolatum album, until healing is ensured.

If epistaxis proceeds from one of the varieties of neoplasms found in the nose such as angioma, fibroma, etc., removal is of course indicated with cauterization or curettement of the base.

Frequent recurring hæmorrhage from the nose due to disease situated elsewhere, though yielding upon each occasion perhaps to local measures as already detailed can only be prevented from persistent repetition by control or improvement of the remote cause, i. e. valvular disease of the heart, arteriosclerosis, chronic interstitial nephritis, etc.

In those cases of hæmophilia, leuchæmia, jaundice, and scurvy, where the ordinary treatment as outlined is of little or no avail, we are compelled to employ mechanical means for the arrest of a hæmorrhage that otherwise might become fatal. If the bleeding is from the anterior portion of the nares and within easy reach, packing the same with narrow strips of gauze is sufficient; the strips are packed in through a nasal speculum, passing beyond the bleeding area and beginning on the floor of the nose packing in firmly one strip on top of another until the nostril is occluded; if the bleeding area is extensive or includes the entire nostril the posterior nares should be tamponed. For this purpose a small sized, soft rubber catheter is employed; the catheter is introduced along the floor of the nostril backward until the tip appears behind the soft palate when it

is seized with a long dressing forceps and drawn forward through the mouth; a cord or ligature about fifteen inches long is now attached to the tip of the catheter, preferably sewn through the eye of it; a tampon of gauze about the size of the little finger or larger is fastened to the end of the cord and the catheter withdrawn through the nostril until the cord is reached when by means of traction upon it and aided by pressure behind the tampon from the forefinger in the patient's mouth, the gauze is firmly forced into position occluding the posterior nares of the affected side; it now remains to occlude the anterior nares as well after the manner already described.

The tampon may be left in place for thirty-six hours when it is gently removed and the cord withdrawn through the mouth; gentle irrigation should then be done with a hot saline solution; after thorough cleansing the tampon may be replaced though this is seldom necessary.

Dr. William Champion Deming, of Westchester, New York, states:

Nature's means of stopping bleeding are fainting and blood clotting. "Fainting at the sight of blood," or from the loss of blood, has been, in human history and survival, life saving and is so still.

Elevation of the head and a few moments of fainting, with the accompanying slow and feeble heart action and lowered blood pressure, cause cessation of bleeding and give time for clotting. Even in post partum hæmorrhage the same means may prevent the necessity for the difficult and dangerous operation of packing the uterus.

So, in treating epistaxis, let us beware of thwarting Nature's efforts. Fainting is not to be feared and clotting is not to be unnecessarily disturbed. Most nosebleeds will stop of themselves. Many of them serve some useful purpose such as relieving plethora, congestion, or high blood pressure, and should not be too quickly interfered with.

The general practitioner, who must be a little of a specialist in everything, is apt, in his early years of practice at least, to be bothered, when facing a case of epistaxis by the thought of having to plug the posterior nares. This bothers leaves him, however, when he learns how easily it may be done, when he is prepared for it, but especially when he learns how seldom it has to be done at all. In twenty-five years of practice the writer has never found it necessary except in operative cases. It certainly should be the means of last resort, for the discomfort to the patient and the danger of sinus or other infection are not inconsiderable.

When interference does become necessary in epistaxis one must not let the fear of blood, over conscientiousness, or the urging to be radical at once, drive one too soon to the ultimate resort. Begin with the simplest means. Dismiss superfluous assistance and sympathy from the room. Allay excitement, secure quiet, fresh air; loosen clothing, and apply cold to the head and warmth to the extremities, thus causing diminution of the blood in the head by its diversion elsewhere. Favor anæmia of the head and any tendency to fainting by letting the patient stand erect, if he can, otherwise let him be seated. Before him place a table on which may be put three basins. The middle one may contain

cold water which the patient may sniff up for a few moments to remove loose clots and possibly check the bleeding. The head should be inclined forward only enough to let the blood drop into the basin. The two other basins should be filled with water as hot as can be borne, renewed from time to time, and one of the patient's hands should be immersed in each. The feet also may be put into a bucket of hot water. At the same time other well known expedients may be tried. The facial artery of the affected side may be compressed, or the artery of the septum beneath the upper lip with the fingers or a roll of paper. The nose and face may be gently sponged with iced water or cold applied to the back of the neck. The patient may inhale cold air through the nose and exhale through the mouth, or breathe entirely through the mouth while the nostrils are compressed with the fingers.

It is said that the bleeding point may sometimes be found near the anterior nares and checked by the cautery or other direct application, but the difficulties of illuminating and cleansing the field are considerable.

The use of various astringent or constricting solutions is often mentioned, such as those of tannin, alum, vinegar, antipyrine, adrenalin, and cocaine, by spraying, syringing or gentle swabbing. The objection to these is the likelihood of washing away helpful clots and with some of them the possibility of poisoning.

Plugging through the anterior nares alone either directly or through a rubber finger cot into which ice or gauze may be packed is a further possibility, but as this may simply cause the blood to flow backward into the throat it is probably better, when the case has reached this point, to plug both anterior and posterior nares. To do this proceed as follows: With an eyed probe thread a soft rubber catheter with a strong silk or other cord. Pass the catheter through the affected side into the pharynx. Seize the cord, or the end of the catheter in the pharynx with forceps, and draw the cord out of the mouth. Remove the catheter. Tie a piece of Bernay's sponge, absorbent cotton, or other material, of sufficient size to the cord, leaving the end long enough to hang from the mouth when the plug is in place by which to remove it. Draw the plug firmly into place and while holding it there, pack the nose as firmly as possible with a continuous strip of aseptic or, better, iodoform gauze. If this is done inside a rubber finger cot it will make removal much easier. Fasten the end of the cord from the nose to a roll of gauze or paper resting against the anterior nares and the cord from the mouth to the cheek with adhesive plaster. The following day begin to remove the packing little by little as it becomes loose, and when all is removed pull out the posterior plug by the string from the mouth.

Fresh Air Treatment.—The prognosis in tuberculous diseases of bones and joints in children has been improved more by the practical application of the fresh air treatment than by any other means. The next step is to apply the same treatment to other surgical diseases. — *American Journal of Surgery.*

Therapeutical Notes.

Grey Oil in the Treatment of Syphilis.—Pernet (*The Lancet*, July 24, 1909) in discussing the intramuscular treatment of syphilis remarks that it is very important to use a properly made sterilized standard preparation. So far as he is concerned, he has always employed French preparations and found them reliable in their action. Grey oil is now official in the French Pharmacopœia. The formula is: Purified mercury, 40 grammes; anhydrous wool fat, pure and sterilized, 26 grammes; medicinal oil of petrolatum sterilized, 60 cubic centimetres. This is put up in small glass stoppered bottles of 1 cubic centimetre of the preparation containing practically 40 centigrammes of mercury. Dr. Pernet considers it of the greatest importance to use a uniform grey oil, for some of the accidents which have been placed on record have been the result of using much too large doses in error, and in one case of employing a preparation put up by a pharmacist was made a mistake in reading the prescription (Smirnoff's case). By employing a standard preparation of one strength and a syringe one is accustomed to, there is no chance of confusion and of errors, which may arise when different strengths and variously graduated syringes are used.

The Treatment of Constipation.—M. Albert Robin, according to René Gaultier, recognizes two medicaments that are of value in the treatment of constipation. (*Journal de médecine de Paris*, July 24, 1909.) One is a saline laxative of the following composition:

R Sodium sulphate, 3ii;
Magnesium sulphate, 3i.
M. ft. pulv. No. 1 Sig.: Dissolve in a half a glass of lukewarm water, add a quarter of a glassful of sparkling seltzer water and drink at once.

The other medicine is a drastic purgative, combined with drugs that lessen the colicky pains which might otherwise be felt. The following is the formula:

R Aloes,
Resin of jalap,
Resin of scammony,
Turpeth root,
Extract of belladonna,
Extract of hyoscyamus,
Almond soap, q. s.
M. ft. pil. No. 1.
Sig.: One to three pills to be taken on retiring.

Tanicides.—Bergé (*La Clinique*, August 13, 1909) recognizes three drugs that are used for the expulsion of the different worms that infest the human intestine. They are respectively, melon pumpkin seeds, male fern and pomegranate bark. Kousso is, he observes, an excellent tœnicide, but it is very slowly absorbed; kamala, which is often used, is much inferior to the drugs named. Pelletierine, the active principle of pomegranate is very poisonous and should never be administered to children. The three best drugs, in his opinion, are those named first. Melon pumpkin seeds are a most effective tœnicide, and expel the worms without danger. Male fern and pomegranate are more ef-

fective, but also more poisonous. For children, adolescent youths, delicate women and enfeebled elderly persons pumpkin seeds, deprived of their integument, are best. But if the worms are not expelled under this treatment recourse must be had to male fern, and if this fails then pomegranate may be tried. The preliminary treatment should consist of a day's rest for elderly persons, a light diet of milk or soup, and, the evening before administering the medicine, an enema of marshmallow water should be given.

The pumpkin seeds, deprived of their integument, should be freshly ground and made into a paste with sugar and mixed with milk, two to three ounces of the seeds being a dose for a grown person and one and a half ounces for a child five or ten years old. This is to be taken the first thing in the morning on an empty stomach. Two hours later a purgative of castor oil is given (five drachms for a child and one ounce to ten drachms for an adult). Six to eight hours after the medicine has been given the worms may make their appearance.

In the treatment by male fern the powdered rhizome is prescribed in cachets containing one to two drachms. But, if it is preferred to employ the oleoresin of male fern, it is given in the following form:

R Oleoresin of male fern, gr. viiiss;
Calomel, gr. 34.
M. ft. capsule No. 1.

For a vigorous male adult twelve capsules may be prescribed, two to be taken every ten minutes. The dose for a woman is ten capsules, for a child eight capsules, and for an infant five to six years old, six capsules. If, at the close of three hours the worms are not passed, give auxiliary treatment, as follows:

Administer two to three ounces of syrup of ether (French Codex), followed immediately by a purgative, but avoid castor oil, as this dissolves the filicic acid of the male fern, which is the poisonous principle.

Or give:

R Compound tincture of jalap;
Syrup of buckthorn, 5iv.
M. ft. haust.

Or:

R Pulverized scammony;
Pulverized jalap, 5i.
M. ft. cachet. No. 1.

The treatment by pomegranate bark provides for the use of an infusion of the fresh bark, the preparatory treatment for aged persons being the same as with the pumpkin seeds. The dose of the bark for adults is ten drachms to two ounces; for children, six to ten drachms, and for infants under six years, two to four drachms. To make the infusion throw two ounces of the freshly ground bark into two pints of boiling water, and allow to infuse for twenty-four hours; then heat again for several minutes until the bulk is reduced a little more than half. Filter through muslin and sweeten to taste, using about one ounce of syrup of orange peel.

The infusion is to be taken in two doses a quarter of an hour apart. One hour later give a dose of castor oil.

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THE GROUND SQUIRREL AND THE ORI-
ENTAL PLAGUE.

Some months ago it was discovered that probably the ground squirrel of California (*Otospermophilus*, or *Citellus*, *Beecheyi*, belonging to the *Arctomyinae*) had his particular flea and was thus an agent in disseminating the Oriental plague. Passed Assistant Surgeon W. C. Rucker, of the United States Public Health and Marine Hospital Service, has made the matter the subject of special investigation, and his findings are published in *Public Health Reports* for August 27th. The animal is said to resemble the ordinary gray squirrel of this part of the country, save that its body is thinner and its tail shorter; moreover, it is a burrowing animal, and in its burrow it often has a feathered companion, the "booby owl," which, it is thought, may carry infected fleas from burrow to burrow for long distances.

It appears that the flesh of the ground squirrel is turned to account as an article of food. "For many years," says Dr. Rucker, "a considerable proportion of the population of this region [Contra Costa County] has eaten ground squirrels at certain seasons of the year, and it is stated that when in good flesh they are as good as, if not superior to, rabbits. Several families have been found who are in the habit of salting them down in large numbers and

using them almost to the exclusion of other meats. In all probability the eating of squirrels is not in itself dangerous, provided they are well cooked, but the danger lies in the handling of them prior to cooking, that is, in skinning and preparing them."

The people have been warned of the danger, and the State board of health has forbidden the acceptance of ground squirrels for shipment by express companies and common carriers unless they are accompanied by a certificate to the effect that they are intended for scientific purposes and unless they are contained in sealed metallic receptacles. The effect has been salutary; the practice of eating these squirrels has diminished very greatly, and the generally irrepressible pot hunter has been compelled to seek for other means of subsistence. But extermination of the ground squirrels seems the only measure to oppose to him and his fleas, and Dr. Rucker goes extensively into the discussion of methods of accomplishing such destruction.

A lesson from these observations may be applied elsewhere in case of the appearance of the Oriental plague. It is notorious that game birds and animals are infested with fleas, and so, indeed, are domestic animals and poultry. Consequently, should the plague break out in quarters where it has hitherto been unknown, it may be necessary to curtail the supply of animal food.

THE TARIFF OF 1909.

The items in the new tariff that affect physicians are those dealing with medical and scientific books and philosophical and scientific apparatus, utensils, instruments, etc. The new item referring to medical and scientific books is an improvement over the item in the tariff of 1897, which said: "Books and pamphlets printed exclusively in languages other than English" shall be admitted free of duty. The Treasury Department construed this item in such a way that if there was an English quotation in a German or French book duty was charged because the book was not printed exclusively in a language other than English. In the new tariff the word exclusively is replaced by the word chiefly, and the change is a decided improvement. But why should medical and scientific books in any language pay duty?

In regard to surgical and scientific instruments, and the like, there is a little alteration in the new act. Paragraph 650 reads as follows: "Philosophical and scientific apparatus, utensils, instruments, and preparations, including bottles and boxes containing the same, specially imported for religious, philosophical, educational, scientific, or literary pur-

poses," are admitted free of duty. There are certain features in the wording of this item which appear to us to permit of the importation of scientific apparatus and surgical instruments free of duty by hospitals, which have hitherto been excluded from the duty free list because they were not engaged in teaching, while hospitals connected with teaching institutions were allowed the free entry privilege. We are informed by the office of the Collector of Customs for the port of New York that the old construction will be put upon the new act; that hospitals cannot be considered as entitled to free entry privileges, because "it is held they are not established *solely* for any of the purposes specified." The new act, as printed in the daily press, does not contain the word "*solely*," and we believe that if a test case were brought the hospital bringing it would have a chance to win its contention.

THE NOSE AND THE DIAGNOSIS OF LEPROSY.

Within very recent years it has been maintained that the nasal septum is frequently the site of the earliest lesions of leprosy and that in the secretions of the nose the bacillus of the disease is most likely to be found at an early period. The matter has lately been made the subject of careful study by Dr. Walter R. Brinckerhoff, director of the Leprosy Investigation Station of the Public Health and Marine Hospital Service, and Dr. W. L. Moore, of Honolulu, and their report has been published as the fourth of a series of *Studies upon Leprosy* by the Public Health and Marine Hospital Service. Among the conclusions is the following: "When it is not practicable to make a complete physical examination of all individuals of a class suspected of leprosy, the examination of the nasal septum and the bacteriological examination of the nasal secretions will prove of value by permitting the recognition of the most dangerous type of the disease, and is therefore worth while even if it does not reveal all cases of the disease in those who came under observation."

MUSSET'S SIGN IN VARIOUS DISEASES.

Musset's sign consists in rhythmical movements of the head, synchronous with the arterial pulsation, and especially noticeable when the head is slightly inclined forward. The majority of observers who have sought for this symptom consider it as frequent in aortic insufficiency, but it is not pathognomonic of this disease, because it has been found in healthy subjects by Frenkel, while Zeittner met with it in four cases of exophthalmic goitre. In

the *Province médicale* for April 24th Pariset says he found that Musset's sign was present in one case of pleuropericardial effusion, in five cases of aortic insufficiency, and in three of aortic aneurysm, but the sphygmographic tracings showed that it was merely an exaggeration of a normal condition. Consequently Musset's sign should not be considered as a pathological phenomenon, because it may be present in various degrees of intensity normally, just as the leg phenomenon may be more or less evident according to the subject studied. Now, although the latter sign is usually very visible, the cephalic oscillation is less distinct and should be sought for by the graphic method. The difference in the amplitude of the movements of the head is probably due to its greater fixity, while on the other hand the leg is a longer and more sensitive lever and consequently is more easily acted upon by the arterial impulse. Musset's sign, which has been considered as symptomatic of certain aortic affections, should, in reality, be looked upon as an exaggerated normal phenomenon, and when met with should not be credited with any greater diagnostic or prognostic value than leg movements.

BECK'S OPERATION FOR HYPOSPADIAS.

The ingenious procedure practised by Dr. Carl Beck, of New York, for the cure of hypospadias, founded largely on the extensibility of the urethra, is well known to American surgeons, and they realize its value. Its appreciation in Europe also is shown, among other indications, by the recent publication of fresh data concerning it in an inaugural dissertation by Dr. Carl Emden, of Corbach, entitled *Weitere Erfahrungen über die Beck'sche Methode der Hypospadioperation aus der chirurgischen Universitätsklinik in Giessen*. Among the advantages of the method Emden mentions the following: A single operation usually suffices; healing is better assured than by the methods previously in use; and the fact that the entire penile urethra is surrounded by cavernous tissue favors the normal ejaculation of semen.

SODIUM BENZOATE.

At the recent meeting in Denver the Association of State and National Food and Dairy Departments adopted the following resolution by a vote of fifty-seven to forty-two: "*Resolved*, That this association hereby endorses the report of the Referee Board of Consulting Scientific Experts, appointed by Secretary of Agriculture Wilson at the direction of President Roosevelt, upon the use of benzoate of soda in food products." This board had found that

sodium benzoate, up to four grammes a day, was not harmful to certain healthy young men. On the other hand, Dr. Harvey W. Wiley, chief of the Bureau of Chemistry of the Department of Agriculture, had found with his famous "poison squad" that sodium benzoate was distinctly harmful in smaller amounts daily.

The findings of the "Remsen board" have been criticised by competent chemists, physicians, and pathologists. The criticisms that are the most serious are that the report was made on insufficient data, that the actual experimental work was left too much in the hands of subordinates, and that proper care was not taken in interpreting results. We pointed out the inadequacy of the data when the board's findings were first made public, and we hold, with Dr. Wiley, that food products preserved with sodium benzoate should bear a label stating the fact. That would be just both to the consumer and to the manufacturer. We still have confidence in Dr. Wiley, and we are glad that he is to continue his efforts to see that the American people shall not eat possibly deleterious materials without having had every opportunity of knowing the facts about them in advance.

DR. CARL THEODOR, DUKE IN BAVARIA, ON HIS SEVENTIETH BIRTHDAY.

The house of Wittelsbach, a branch of which holds the royal throne of Bavaria, has for centuries been of great importance in Germany. We find members of it renowned in politics and warfare, in science and art, in poetry and religion, and as protectors and patrons of the Muses. Lately two or three of its sons have become followers of Æsculapius. The oldest of these is Carl Theodor, Duke in Bavaria, who celebrated his seventieth birthday on the 9th of August. In 1880 he received his diploma as doctor and his license to practise in Germany. Although prolific as a medical writer, he is best known as an ophthalmologist. Assisted by the duchess in Tegersee, as well as in Munich, he has been celebrated for his operations performed on poor and rich alike. May it be granted to the doctor duke to spend many more years in relieving humanity of its ills.

DISEASES WHICH MUST NOT BE CURED.

There is an ancient tradition to the effect that it is dangerous if not absolutely disastrous to cure certain morbid manifestations, the idea being that the suppression of these abnormalities is likely to lead to grave and perhaps mortal disease. The belief dates back at least to classical times, for, as we are reminded by a *feuilletoniste* in the *Journal de médecine*

de Paris for July 17th, there is to be found in the *Æneid* the phrase *agrescitque medendo*. It is not yet given up by the laity, and it was but a few decades back that standard medical authors gravely discussed the supposed inadvisability of curing a fistula in ano, for example, lest consumption should be the result. As the Parisian writer points out, such a fistula is frequently of tuberculous origin, and nobody would now expect to cure tuberculous infection by suppressing one of its minor manifestations. The *feuilleton* is founded on an old book by Dr. Dominique Raymond, of the Montpellier faculty, entitled *Traité des maladies qu'il est dangereux de guérir* and published in Avignon in 1757. Our ancestors were precise as to matters of observation, but they lacked our present means of interpretation.

ABERRANT OSSEOUS FORMATIONS.

"Callus without fracture," according to the *Semaine médicale* for July 21st, is the equivalent of a term lately proposed by Professor Fritz König for certain osseous formations which, occurring in the immediate neighborhood of a bone and showing themselves shortly after an injury, have doubtless often been mistaken for fragments detached from the bone by violence. Careful examination with the aid of the Röntgen rays shows the integrity of the bone and thus distinguishes these newly formed osseous masses from the results of avulsion. They often give rise to pain and other inconveniences for a time, but they frequently disappear spontaneously within a comparatively short period. If they fail to subside, and if their presence is sufficiently annoying, they may be excised, but in their removal care must be taken to cut away also a liberal amount of the surrounding tissue, for otherwise they are apt to relapse.

THE REPORTED DISCOVERY OF THE NORTH POLE.

The whole civilized world was thrilled with the news made public this week that the North Pole had at last been discovered, and the announcement is of special interest to the medical profession because the discoverer is Dr. Frederick A. Cook, of Brooklyn, a graduate of the Medical Department of the University of the City of New York, of the class of 1890. While he has not of late been engaged in active practice, his medical training has no doubt been an important aid in his work as an explorer. It is interesting to note that Dr. Cook is not the first medical man to essay the discovery of the pole, the expedition of the late Dr. Elisha Kent Kane having been one of the most notable efforts made to reach the pole. Dr. Hayes, who was associated with Dr.

Kane in his expedition, later made one on his own account, while two other medical explorers, Dr. Richardson in 1826 and Dr. John Rae in 1845, have added to our knowledge of Arctic geography. Even where the expeditions have not been under the direct command of medical men, they have generally played an important part in the capacity of surgeons and have always performed their duties in a manner creditable to their profession. A medical training is indeed an excellent preparation for the explorer, and the efficiency of Dr. Livingstone in the exploration of equatorial Africa sprang largely from his knowledge of medical matters. We congratulate Dr. Cook upon the achievement which has won for him an undying name and for the medical profession additional lustre.

Obituary.

ALFONS VON ROSTHORN, M. D.,
of Vienna.

It is sad to report the sudden death of another well known German gynecologist. A short time ago Professor Pfannenstiel, of Kiel University, died suddenly from blood poisoning; only two weeks ago we gave an obituary notice of Professor Runge, of the University of Göttingen; and to-day we have to announce the death of von Rosthorn, of Vienna. Alfons von Rosthorn was a comparatively young man to hold such an important position. He was born on September 19, 1857, in Vienna, where he was graduated in 1885. Five years later he became Privatdozent. His career was very brilliant. In 1894 he became professor of gynecology in the German University at Prague, in 1898 at Gatz, in 1900 at Heidelberg, and in 1908 at Vienna. He was a prolific writer, a successful operator, an instructive teacher, an agreeable colleague, and a thorough gentleman. A stroke of apoplexy, while he was hunting, ended a career which was full of promise.

News Items.

The Nelson Morris Memorial Institute of Medical Research has been established in connection with the Michael Reese Hospital, Chicago, by a gift of \$250,000 from Mrs. Nelson Morris.

A Home for Consumptives in Middletown, N. Y.—It is reported that Mrs. Gibbs, widow of Major Theodore K. Gibbs, of Newport, R. I., has purchased Southwick's Grove, in Middletown, N. Y., as a site for a home for consumptives.

Changes of Address.—Dr. J. Howard Reeves, to the Flanders Building, Philadelphia.

Dr. Alfred Bornmann, to 438 Greene Avenue, Brooklyn.

Dr. Frank C. Yeomans, to 46 West Forty-eighth Street, New York.

Dr. Carol Goldenthal, to 321 East Thirteenth Street, New York.

Dr. John L. North, from South Manchester, Conn., to Stuart, Dade County, Florida.

Dr. Milton K. Meyers, of Philadelphia, announces the removal of his uptown office to 3401 North Twenty-second Street.

Hospital Benefit.—A carnival of nations is to be held in Brooklyn, at the Fourteenth Regiment Armory, on September 28th to October 2d, in aid of the Samaritan Hospital. Elaborate preparations are being made and it is hoped that the affair will be a great success.

The Elmira, N. Y., Academy of Medicine held a meeting on September 1st, at 8:15 p. m. The programme included papers by Dr. G. H. Gustin, Dr. W. S. Cobb, Dr. F. W. Ross, and Dr. John A. Westlake. The paper by Dr. Ross was entitled *Some Ideas on Japanese Sanitation*.

Medical College Merger.—It is reported that arrangements are being made for the consolidation of the College of Physicians and Surgeons of Los Angeles, Cal., with the University of Southern California, under the name of the Medical Department of the University of Southern California.

New Physicians in Minnesota.—The State Board of Medical Examiners announces that fifty-nine candidates passed the examinations held in June and have been granted licenses to practise in the State. Licenses were also issued without examinations to eight physicians from other States, who had been registered by reciprocity.

A Training School for Nurses in Manila.—It is reported that a training school for nurses is to be established in Manila by Miss Malvina M. McKeever, of Roxbury, Mass., who served as a nurse in the Spanish war, and later was matron of a hospital in Manila. The institution is to be under the control of the Bureau of Education and Filipino girls are to be the students.

The College of Physicians of Philadelphia will open its new building on Twenty-second Street, for all uses early in the fall. The past two months have been devoted to the task of moving the very valuable library of the college to the new building. The fellows are informed that the periodical room has been temporarily furnished, and that the library is again open for their use.

Illinois State Board of Health Awards Contract for Antitoxine.—The contract for the supply of diphtheria antitoxine for the coming year has been awarded by the Illinois State Board of Health to the Lederle Laboratories, of New York. Proposals for the supply were opened on August 12th. An annual appropriation of \$23,000 is given to the board for diphtheria antitoxine, which is distributed free of charge to all who may need it.

Standing of Medical Colleges Adjudged by Illinois State Board of Health.—At its last meeting the board declared the St. Louis College of Physicians and Surgeons to be a medical institution not in good standing. At the same time the board conditioned the Barnes University of St. Louis, and declined to restore recognition to the National Medical College of Chicago, which had been declared to be not in good standing at a previous meeting.

The Craig Colony Inquiry.—An investigation of the Craig Colony for Epileptics, at Sonyea, N. Y., is being conducted by a committee of the State Board of Charities, as a result of charges of alleged cruelty to inmates. The institution has had no permanent superintendent since Dr. William P. Sprattling resigned more than a year ago. Dr. William T. Shanahan, first assistant physician, being acting superintendent. It is the wish of the board that the inquiry be made a thorough one.

An Epidemic of Infantile Paralysis in Brooklyn.—More than two hundred children between the ages of one and five years in the Brownsville section of Brooklyn are suffering from a form of infantile paralysis, and the health authorities have been asked to investigate the matter, as the disease seems to be spreading. Specialists from the Rockefeller Institute for Medical Research, under the direction of Dr. Simon Flexner, have already visited Brownsville and are trying to find out the cause of the outbreak.

A Useful Reference Book.—The firm of Parke, Davis & Co., Detroit, Mich., has published a manual of therapeutics for the use of physicians, which contains a great amount of useful information presented in a convenient form for reference. The compilation of the volume must have entailed a great deal of hard work and painstaking thought, and the book will be valued by physicians as much for the therapeutic suggestions contained in it as for the very comprehensive but condensed descriptions of materia medica products. A first edition of forty thousand copies has been issued, and the work is offered gratuitously, so that any physician who desires a copy can have it for the asking.

An Addition to the University and Bellevue Hospital Medical College.—Plans have been filed for a six story building, adjoining the Carnegie Laboratory, at 433 First Avenue. The building will be furnished with operating wards, sterilizing and ethering rooms and a series of recovery rooms, in addition to general rooms for the university staff and students. It will be of brick and lime stone, of Renaissance design, and will cost about \$65,000.

Scientific Society Meetings in Philadelphia for the Week Ending September 11, 1909:

MONDAY, September 6th.—Northwestern Medical Society.

TUESDAY, September 7th.—Academy of Natural Sciences.

WEDNESDAY, September 8th.—Philadelphia County Medical Society.

THURSDAY, September 9th.—Lebanon Hospital Medical Society.

FRIDAY, September 10th.—Northern Medical Association.

London School of Tropical Medicine.—The announcement is made in the issue of the *Journal of Tropical Medicine and Hygiene*, under date of August 2d, that fifty-one students took the course which ended in July. The laboratory is large enough for forty students only, so that it was much overcrowded. The management is glad to say that through the generosity of a friend the laboratories will be enlarged this summer, so that when the school opens in October larger classes can be accommodated.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 28, 1909:

	—August 21—		—August 28—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	365	137	491	149
Diphtheria	141	10	156	14
Measles	149	12	167	9
Scarlet fever	68	4	58	5
Smallpox	..	..	..	..
Varicella	6	..	4	..
Typhoid fever	74	15	158	14
Whooping cough	25	8	44	13
Cerebrospinal meningitis	8	11	5	9
Total	1,036	107	1,083	213

The Remsen Referee Board Sustained in the Sodium Benzoate Matter.—At the annual meeting of the Association of State and National Pure Food and Dairy Departments, held in Denver during the last week of August, resolutions were adopted endorsing the report of the referee board of scientific examiners, ordinarily known as the Remsen Board, which was appointed by the Secretary of Agriculture to investigate the effect of sodium benzoate. The report, which was published some time ago, affirmed that sodium benzoate administered in doses up to four grammes a day was without deleterious effect on the human system. The resolutions were bitterly fought by Dr. C. A. L. Reed, of Cincinnati, and by many who supported Dr. H. W. Wiley in his contention that the substance was not harmless. Nineteen States voted for and fourteen against the resolution, each State having three votes. Dr. Ira A. Remsen, of Baltimore, Dr. Russell H. Chittenden, of New Haven, Dr. J. H. Long, of Chicago, and Dr. Christian H. Herter, of New York, who constitute the Board, were all present and participated in the discussion.

The Health of Chicago.—During the week ending August 21, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 52 cases, 5 deaths; scarlet fever, 61 cases, 3 deaths; measles, 32 cases, 6 deaths; whooping cough, 69 cases, 7 deaths; tuberculosis, 86 cases, 81 deaths; pneumonia, 12 cases, 38 deaths; typhoid fever, 40 cases, 3 deaths; chickenpox, 1 case, 0 deaths; smallpox, 1 case, 0 deaths; erysipelas, 5 cases, 0 deaths. The deaths from other important causes were: Cancer, 24 deaths; nervous diseases, 17 deaths; heart diseases, 45 deaths; apoplexy, 9 deaths; Bright's disease, 38 deaths; diarrheal diseases, under two years of age, 180 deaths; diarrheal diseases, over two years of age, 20 deaths. There were 3 deaths from accidents, 7 suicides, and 31 deaths due to accidents. The total number of deaths during the week was 649, in an estimated population of 2,224,470, corresponding to an annual death rate of 13.25 in a thousand of population. The total infant mortality was 208, 268 under one year of age, and 90 between one and five years of age.

The Aspirin Patent Sustained.—Justice Sanborn has rendered a decision in a suit in equity brought before the Circuit Court of the United States for the northern district of Illinois sustaining the claim of the Farbenfabriken of Elberfeld Company to exclusive right to manufacture and sell acetylsalicylic acid, whether under the trade name of aspirin or under its chemical name. In the opinion rendered by the Justice the history of the invention of the substance is recited and a decree issued restraining the defendant from selling any other substance than that made by the Farbenfabriken as aspirin or as acetylsalicylic acid. The manufacturers assert that large quantities of imitations of the genuine article have been sold as aspirin and they are carrying on a vigorous campaign against the substitutes.

The Health of Philadelphia.—During the week ending August 21, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 35 cases, 4 deaths; scarlet fever, 9 cases, 0 deaths; chickenpox, 1 case, 0 deaths; diphtheria, 53 cases, 2 deaths; measles, 13 cases, 3 deaths; whooping cough, 20 cases, 2 deaths; tuberculosis of the lungs, 88 cases, 52 deaths; pneumonia, 14 cases, 18 deaths; erysipelas, 6 cases, 0 deaths; tetanus, 2 cases, 0 deaths; mumps, 2 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 67 deaths; cholera morbus, 1 death; dysentery, 1 death. The total deaths numbered 401 in an estimated population of 1,565,569, corresponding to an annual death rate of 13.32 in a thousand of population. The total infant mortality was 134; 123 under one year of age, and 11 between one and two years of age. There were 30 stillbirths; 20 males and 10 females. There was no precipitation.

The Outbreak of Pellagra in Illinois.—It is reported that about seventy-five cases of pellagra were found among the 2,200 inmates of the Peoria State Hospital, as a result of the investigation made by Dr. James A. Egan, secretary of the State Board of Health, in connection with Captain Joseph F. Siler, of the Medical Corps of the United States Army, who was detailed by the War Department to make a study of the disease. It is said that this is the first outbreak of pellagra in the United States north of Mason and Dixon's line, and owing to the serious nature of the disease, and the fact that it may become epidemic, the Illinois State Board of Health is putting forth every effort to ascertain its cause. Dr. W. H. Buhlig, professor of clinical pathology at the Northwestern University Medical School, and an expert bacteriologist, is at the institution at present doing some experimental work, and it is probable that a bacteriologist will be detailed by the surgeon general of the Army to take up investigations at Peoria. Captain Siler has reported to the Department that he will stay several weeks longer to study the disease.

Personal.—Dr. Mortimer Herzberg, who has held the position of second assistant bacteriologist in the Bureau of Health of Philadelphia, has resigned to accept the chair of pathology in the University of South Dakota.

Dr. Lawrence F. Flick has resigned as consulting physician to the Department of Tuberculosis in the Philadelphia General Hospital, and his resignation has been accepted. Dr. Joseph Walsh has been appointed to fill his place.

Dr. Frank B. Hiller, of Kahoka, Mo., has been appointed secretary of the Missouri State Board of Health.

Dr. Percy F. Dawson, associate professor of physiology at the Johns Hopkins Medical School, has resigned, for the purpose, it is said, of entering the Unitarian ministry. To fill the vacancy made by the resignation of Dr. Dawson, Dr. E. A. Erlanger has been promoted from instructor in physiology to associate professor, and Dr. C. D. English will take Dr. Erlanger's place.

Dr. John B. Powers has been elected dean of the Wake Forest, N. C., School of Medicine, to take the place of Dr. Watson S. Pankin, who resigned recently.

Dr. Arthur Robinson, professor of anatomy in the University of Birmingham, has been appointed to the chair of anatomy in the University of Edinburgh, to fill the place made vacant by the death of Dr. Daniel J. Cunningham.

Dr. S. Lambert, of Owensboro, Ky., has received the Democratic nomination for Mayor of that city.

Dr. William D. Tewksbury, of Washington, D. C., has been appointed superintendent of the Virginia State Tuberculosis Sanatorium, at Catawba.

Society Meetings for the Coming Week:

MONDAY, September 6th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, September 7th.—Buffalo, N. Y., Academy of Medicine; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Hornellsville, N. Y., Medical and Surgical Association; Bridgeport, Conn., Medical Association.

WEDNESDAY, September 8th.—Medical Society of the Borough of the Bronx, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

THURSDAY, September 9th.—Blackwell Medical Society of Rochester, N. Y.

The Colorado State Medical Society.—The thirty-ninth annual meeting of this society will be held in the Hotel Stanley, Estes Park, Colo., on September 14th, 15th, and 16th. An excellent programme has been prepared, and the meeting gives promise of being especially interesting. The medical and surgical sections will meet simultaneously at ten o'clock each morning, and general sessions will be held at two o'clock in the afternoon of each day. On Tuesday afternoon the annual address of the president will be delivered by Dr. P. J. McHugh, of Fort Collins; Surgeon B. L. Wright, of the United States Navy, will deliver an address on the Treatment of Tuberculosis by the Administration of Mercury; and Dr. Eugene Dupuy, of Paris, will read a paper on Correlation of Pathological States between the Thyroid and Prostate Glands and the Uterus, Chiefly Bearing on Epilepsy and Other Nervous Disorders. Wednesday afternoon's session will be devoted to a "symposium" on Blood Pressure, and Thursday afternoon's programme consists of a "symposium" on Life Insurance Examinations. On Wednesday evening, at eight o'clock, Dr. Hanau W. Loeb, of St. Louis, will give a stereoscopic demonstration of the Relation of the Optic Nerve to the Accessory Sinuses of the Nose, and Dr. George H. Stover, of Denver, will give a Röntgenographic demonstration. The officers of the society are: President, Dr. P. J. McHugh, of Fort Collins; first vice-president, Dr. D. H. Coover, of Denver; second vice-president, Dr. R. G. Thompson, of Trinidad; third vice-president, Dr. C. H. Graves, of Canon City; fourth vice-president, Dr. O. P. Shippey, of Villa Grove; secretary, Dr. Melville Black, of Denver; and treasurer, Dr. George W. Miel, of Denver.

Charitable Bequests.—Forty-three charitable and philanthropic institutions in New York benefit by the will of Michael Horn, who died in Brooklyn on August 4th. The bequests range from \$300 to \$5,000, and aggregate to more than \$40,000. Among the larger bequests are \$5,000 to the Mount Sinai Hospital for a perpetual bed to be known as the Bertha Horn Memorial Bed, and \$2,500 to the Montefiore Home for the Isaac Horn Bed. Gouverneur Hospital and the Blind Asylum on Blackwell's Island, receive, respectively, \$500 and \$750. Some of the other bequests are: Flower Hospital, \$500; Roosevelt Hospital, \$500; J. Hood Wright Hospital, \$500; German Hospital, \$500; the Nursery and Child's Hospital, \$500; Children's Aid Society, \$400; Hebrew Orphan Asylum, \$1,500; De Hirsch Home for Working Girls, \$750; Beth Israel Hospital, \$750; Sydenham Hospital, \$500; Lebanon Hospital, \$750; Home for Aged and Infirm Hebrews, \$750; Newsboys' Lodging House, \$300; Society for the Prevention of Cruelty to Children, \$300; Hebrew Educational Society, of Brooklyn, \$750; Jewish Hospital, Brooklyn, \$750, and Brooklyn Ladies' Home for the Aged, \$750.

The referees' report on the estate of Augustin Daly, the theatrical manager, shows that 20 per cent. of \$63,315 is to be divided among the following New York institutions: The Roman Catholic Orphan Asylum, the Home for the Aged of Little Sisters of the Poor, the Association for Befriending Children and Young Girls in the City of New York, St. Joseph's Home for Consumptives and Incurables, the Society of St. Vincent de Paul, the Mission of Our Lady of the Rosary, St. Zita's House and Refuge in St. Patrick Cathedral Parish.

By the will of Welcome G. Hitchcock, the White Plains, N. Y., Hospital and Young Men's Christian Association will each receive \$2,500; the Brooklyn Society for the Prevention of Cruelty to Children will receive \$2,000, and the New York branch will receive a like amount.

Pith of Current Literature.**BOSTON MEDICAL AND SURGICAL JOURNAL**

August 19, 1909.

1. The Intravenous Administration of Strophanthin in Other than Cardiac Disease, with Special Reference to its Use in Collapse in the Course of Pneumonia, By A. K. STONE.
2. Studies in Psychopathology, the Psychotherapeutic Value of the Hypnotic State (*To be continued*), By BORIS SIDIS.
3. Stenosis of the Larynx, By RICHARD H. JOHNSTON.

1. **Strophanthin in Collapse in the Course of Pneumonia.**—Stone reports five cases of pneumonia, which show that in certain cases of collapse, due to cardiac weakness, the physician has in strophanthin a drug which will act so promptly and powerfully and enable the patient to rally, and the heart to resume its work. The large amounts of urine which have been passed by these patients, which are much greater than the ordinary diuresis following the crisis of a pneumonia, make it seem that the strophanthin has also to do with the production of what Meltzer has called the "life giving diuresis," by means of which the toxic products are more rapidly eliminated than would otherwise be the case. When a patient has grown weaker and weaker in the course of his disease, whether it be pneumonia or typhoid fever, the cardiac stimulant of the strophanthin will apparently have little effect upon the gradually flagging heart action.

2. **Studies in Psychopathology.**—Sidis remarks that the procedure of hypnoidization is quite simple and may be described as follows: The patient is told to close his eyes and keep very quiet. He is then asked to attend to some monotonous stimulus, such as the beats of a metronome, or listen to a continuous note produced by a tuning fork, or to smell some pleasant odor, or simply to submit himself to a gentle massage in which touch and pressure are of uniform intensity. This should be carried out in a dark and quiet room. Fatigue, physical and mental, especially emotional, is a favorable condition. A prolonged warm bath with relaxation is favorable. A predisposition to sleep is helpful. It is, therefore, best to make the first attempts at hypnoidization late at night, when the patient is both tired and sleepy. In most cases, darkness, quietness, repose, fixation on a bright point, and listening to the monotonous buzzing of an inductorium are conditions favorable to the induction of the hypnoid state, even at the very first attempt. Once the hypnoid state is induced by any of the various methods of hypnoidization, we can either attempt to follow up the history and the development of the malady, or we may chiefly work for the therapeutic effect and treat the present symptoms. It is, however, advisable from a purely practical therapeutic purpose to combine the two procedures, as the cure is then far more effective and far more stable. In cases when the history of the origin and development of the disease could not be traced on account of the age or unintelligence of the patient, the therapeutic effects alone of the hypnoid states have been utilized. The results are not as satisfactory as far as scientific information is concerned, but they are nevertheless of great benefit to the patient.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 28, 1909.

1. The Scope of Preventive Medicine, By J. H. WHITE.
2. Limitations in Public Health Administrations, By HENRY BINBY HEMENWAY.
3. Molluscum Contagiosum. Report of an Institutional Epidemic of Fifty-nine Cases, By FRANK CROZER KNOWLES.
4. Comparative Value of the Internal Administration, Inunction, and Injection of Mercury in Syphilis, By EUGENE CARSON HAY.
5. Inoculations of Polyvalent Staphylococcic Suspensions in Staphylococcus Infections of the Skin, By HENRY ROCKWELL VARNEY.
6. Chloroform Rather than Ether Anesthesia in Tuberculosis, By JOSEPH WALSH.
7. Anatomy and Physiology of the Tonsil, By CHARLES M. ROBERTSON.
8. Conditions of the Fauical Tonsil Which Call for Operative Interference, By EMIL MAYER.
9. Removal of Tonsils, By NORVAL H. PIERCE.
10. Adenoid Operations, By FRANCIS R. PACKARD.
11. Postoperative Tonsillar Bleeding, Its Surgical Control, with Mention of Cases, By LEE COHEN.
12. Trifacial Neuralgia, By FREDERICK V. HUSSEY.

3. **Molluscum Contagiosum.**—Knowles reports fifty-nine cases of molluscum contagiosum which appeared among 350 children in St. Vincent's Home in Philadelphia; thirty-six of the patients were girls and twenty-nine boys. The age was between seven and two years. More than one area was involved in twenty-seven of the cases. The eyelids were attacked in twenty-two cases; the chin in six; the cheeks, right, left, or both were involved in eleven cases; the forehead was the area of predilection in eleven; the nose in nine; the cutaneous surface of the lip in five cases; the neck, anterior surface, in five; the posterior surface of the neck in three cases; the left ear in two; the dorsal surface of the right hand in four cases; the middle of the back in one case; and in one case, the left thigh was the site of attack. In one case, the vermilion border of the lower lip was involved by two small, pinhead sized lesions. Two of the patients had mollusca on the mucous membrane of the lip. A severe conjunctivitis was produced in one of the cases by a molluscum on the edge of the eyelid causing friction. One lesion was present in nineteen of the cases; two in twelve cases; three also in twelve cases; four mollusca in four cases; five lesions in two other cases; six in four cases; one patient had seven lesions; and in five children there were, on each, twelve mollusca. The lesions were mostly from small to large pinhead in size; one molluscum was, however, pedunculated and cherry size. The author in conclusion remarks that molluscum contagiosum usually attacks the face, in a great majority of the cases on, or in close proximity to, the eyelids. Children are more susceptible to the disease than adults. It is very difficult to explain the present or other epidemics on any other theory except that the disease is contagious. The cause of the disease is, unfortunately, still to be determined; although a microorganism, usually a coccus, has been found in a few cases. The incubation period is undetermined; from the experiments so far carried out, from a few weeks to many months. The skin apparently does not have to be broken for the infection to occur, but this point is still undecided.

4. **Administration of Mercury.**—Hay compares the three methods of administering mercury,

the internal, inunction, and injection method. He concludes that all methods should be combined at different periods during a full course of treatment. A course of treatment in the early inception of syphilis should start either with inunctions or injections and be followed by internal medication, instead of the pill or internal treatment being given first, and followed later by injections and rubs, as advised by most modern textbooks. The brilliant results to be obtained in the prevention of future accidents in any case are to be accomplished in the first year's treatment, and we should attack the disease energetically, and when the system is being flooded with the syphilitic virus. The more rapidly we can overwhelm and cause the extinction of the spirochæta, with a treatment that is not injurious to the system, the better is our selection. Hence he has formulated the following routine to be pursued in cases of syphilis as they ordinarily run: First Year.—Two courses of either inunctions or injections, covering a period of two months each; after each course of treatment a month's rest should be allowed and then internal medication two months during the interim up to within a month before resuming the second course, whether inunctions or injections, making four months' rubs, four months' internal treatment, four months' rest. Second Year.—Two courses of rubs or injections six weeks each; two courses of internal treatment, eight weeks each; two courses of rest, six weeks each, and two of four weeks each, making a total of three months' heavy rubs or injections, four months' pills, and five months' rest. Third Year.—Treatment every other month, alternating between the internal and more intense methods. Fourth Year.—Six weeks of inunctions or injections. Fifth Year.—Four to six weeks of inunctions or injections. All three methods should be used in treating any case of lues. When first instituting treatment after infection, either inunctions or injections should be employed, followed by internal medication, instead of treatment with pills, first followed by more heroic methods, as advised by most of the leading writers. The inunctions, on an average, are superior to the soluble injections, and more lasting in their effects. The insoluble salts are too intense and profound to be employed in routine, and should be held in reserve for rebellious cases and for cases in which rapid and pronounced mercurialization is desired. Finally, the long course of treatment should be pursued in all cases. The six cardinal points in the therapeutics of syphilis are to keep a close observation of the weight, kidneys, bowels, stomach, gums, and nervous system, especially the latter, as some patients will never manifest any evidence of mercury in the form of stomatitis, and the first evidence one has is a profound and acute nervous prostration.

5. **Staphylococcus Inoculation.**—Varney observes that polyvalent staphylococcic stock suspensions administered in appropriate doses have a decided therapeutic value in a group of localized, rebellious infections of the skin. Their administration is practically without danger, bringing about prompt cessation of the active infection and immunizing the patient against a recurrence of the infection for a more or less prolonged interval. Clinical observations act as guides to the time for re-

inoculation and the size of dose to be administered. The appropriate standards for size and frequency of doses have been previously established from opsonic estimations on laboratory patients with similar infections, and are not necessary for each specific case. Failure to immunize the patient artificially may be due to an abnormal condition of the skin, nonspecific bacterial suspensions, or incorrect dosage. Much time is saved in the use of stock suspensions by the elimination of opsonic indices and by the assistance derived from other therapeutic measures. Less suffering, less deformity, less danger of systemic infection, and less liability to recurrence are the advantages derived from the use of bacterial suspensions as a therapeutic agent.

7. Anatomy and Physiology of the Tonsil.—

Robertson gives a complete review of the anatomy and physiology of the tonsil, although our knowledge has been limited to the study for the most part of pathological glands, and has not included the so called normal tonsil which marks its decline after the sixth or eighth year. It is evident that if we are to ascribe any function to the glands it must be one which is active during the first part of the child's life or between the first and sixth or eighth year, at which period the gland has already passed its height of usefulness in the economy and is beginning to disappear by atrophy. It is stated that the tonsil, in particular cases, has come to have a function in modulating the voice. This, however, is a mere matter of education, and the singer or speaker would have come to modulate the voice just as well without this gland as with it. On the other hand, we have all seen cases in which the voice was increased in tone and volume by the removal of these growths. The richness of quality and volume of tone is often added to 100 per cent. after the enucleation, provided the pillars remain intact and are not bound down or together by cicatricial tissue. He has observed four patients in whom there was loss of voice who were relieved by removal of the tonsils. These individuals are usually affected in one register, more frequently the middle. The removal of tonsils in the adult can not be studied in this connection, however, as the presence of such growths is a pathologic phenomena. Robertson believes that tonsils after the sixth or eighth year of life are pathological in their character and as such are productive only of detrimental influence in rendering the individual unable to cope with infections of various kinds, and thereby working a hardship to the general economy.

10. Adenoid Operations.—Packard favors ether as anæsthetic in operations on tonsils and adenoids. He gives some tables in which he demonstrates the danger from the use of chloroform and ethyl bromide in these operations. Nitrous oxide anæsthesia, he says, is of such short duration that its usefulness is decidedly limited; while ethyl chloride anæsthesia is attended by at least one great drawback, as it induces, if administered for any length of time, great rigidity of the jaws.

12. Trifacial Neuralgia.—Hussey arranges the treatment of trifacial neuralgia under three divisions: 1. Medical treatment is often effective in the minor neuralgias due to constitutional conditions; it includes also local treatment of nose and mouth, and should not be persisted in too long without results.

2. Peripheral operation, as neurectomy or avulsion, is often effective in those cases in which one branch of a division or one division alone is affected. This stage includes treatment by injections of 80 per cent. alcohol in the region of the painful nerve, the results of which treatment have been very satisfactory. Cases for peripheral operation or treatment by injections should be carefully selected, and even in those cases there will be a certain percentage of recurrences. 3. Intracranial operations are indicated in all types of major neuralgia where more than one division is affected and where medical treatment and peripheral operations have been tried and have failed. The operation advocated by Spiller, consisting of division of the sensory root of the Gasserian ganglion, seems to be the most rational one.

MEDICAL RECORD.

August 28, 1909.

1. Serology of Syphilis, By RALPH C. MATSON.
2. A Severe Case of Scarlatina and of Diphtheria Successfully Treated without Medicine, By WILLIAM HANNA THOMPSON.
3. A Large Glioma Growing from the Basal Ganglia Producing Symptoms Suggestive of a Growth in the Frontal Region, By THEODORE DILLER.
4. The Diagnosis of Tricuspid Stenosis; Report of Case with Tracings, By DAVID FELBERBAUM.
5. Report of an Unusually Intractable Case of Iritis with Some Remarks on the Etiology of Iritis, By WILLIAM CAMPBELL POSEY.
6. The Early Diagnosis of Pulmonary Tuberculosis, By LEWIS M. GAINES.
7. On the Estimation of the Urinary Ammonia, and a New Instrument for Its Rapid Estimation, By HENRY R. HARROWER.

1. Serology of Syphilis.—Matson remarks that the rarity of a positive reaction in normal serum and the high percentage of positive reactions in syphilis or suspected cases clearly shows the test to be of much value. A positive reaction is found with greatest frequency in early cases, and least frequently in latent cases. A positive reaction means that active syphilis exists, but does not necessarily mean that the present pathological condition is due to syphilis; that must be determined clinically. But it does indicate that there should be an exhibition of antisyphilitic treatment. A negative result may be interpreted in many different ways. A negative reaction occurring in one who has had syphilis does not mean absolutely that the patient is well, but that the infection, if present at all, is quiescent. If a negative reaction occurs in an early suspected case it is from ninety-five to one hundred per cent. against syphilis. If obtained in a suspected secondary case the chances are from ninety to one hundred per cent. against syphilis. If obtained in a suspected tertiary case the chances are seventy-five to ninety-five per cent. against syphilis. If obtained in suspected latent cases the chances are from fifty to seventy-five per cent. against syphilis. If obtained in a suspected parasyphilitic, the chances are seventy to eighty per cent. against its existence. Since antisyphilitic treatment may cause the reaction to disappear it may be an index as to the efficiency of a line of treatment in that particular case. As a diagnostic method it is of probably greater value in syphilis than the agglutinin reaction in typhoid, and as Fornet suggests on account of the importance of serum diagnosis from a practical standpoint, it is to be hoped that modern

municipal laboratories will be equipped to undertake these examinations and place the results gratuitously at the disposition of practitioners.

2. A Severe Case of Scarletina and of Diphtheria Successfully Treated without Medicine.—Thompson reports such a case in a girl, aged five years, who had a severe attack of scarlatina, complicated three days later with an attack of diphtheria. Antitoxine was administered twice, once 10,000 units, and the second time 5,000 units without effect. Thompson saw the child on the sixth day of scarlatina (the third of diphtheria). The membrane covered the uvula, both palatal arches, the tonsils, and the pharynx, so that all these parts were practically hidden by the overlying membrane. The child was wholly unable to swallow, the glands on both sides of the neck were swollen, and the breath had a gangrenous odor. The child was apathetic and presented a picture of serious septic infection. The pulse was weak and thready. Thompson came to the conclusion that the only recourse was to deal with her throat as we would wash a dirty sidewalk with a hose. He recommended, therefore, that two gallons of hot water, with two teaspoons of potassium chlorate and five drops of oil of peppermint dissolved in it, be made, to pour into her throat every two hours day and night, from a fountain syringe bag elevated six feet above her head. To prevent her gagging or swallowing any of the water, her mouth was to be kept wide open by a rubber ball held between the teeth. For the first few days the patient felt such relief from this douching that she offered no resistance. Great quantities of the exudates came away with the return current. On his second visit, two days afterward, though the patient was still unable to swallow, he was gratified to note a marked change in her expression, and the enlarged cervical glands looked smaller. On his third visit, two days after that, she could swallow, though extensive diphtheritic patches still remained. He then found abscesses in both ears, which, on puncturing the drum, discharged profusely, and continued to do so for over a week, but the ears recovered perfectly. On the eighth day of her illness, the temperature, which had fallen to 102°, rose to 105° F., and with it there was a marked rise in the leucocyte count. He then found a patch of pneumonic consolidation in the left midscapular region, which was farther surrounded by an area of pleuritic râles extending to the base of the lung posteriorly. Nothing was prescribed for this complication except to continue the throat douching. In five to seven days both the pneumonic signs and the friction râles disappeared; the throat was clear of all diphtheritic patches, the cervical glands had become normal, and the patient was very hungry. But the pulse now became very weak and intermittent, and then for the first time, on the twenty-fifth day of her illness, she took medicines in the form of cardiac stimulants in a pill of powdered squills, caffeine, and strychnine. The recovery of the heart was very slow, and it continued to be weak and intermittent for six weeks. The child is now quite herself again, except for weakness of the legs, and a muffled nasal voice from paralysis of the palate.

4. The Diagnosis of Tricuspid Stenosis.—Fellberbaum observes that an auricular type of liver

pulse occurring in a case of endocarditis is diagnostic of a complicating stenosis of the tricuspid orifice. Stenosis of the tricuspid orifice can hardly ever be recognized by the usual clinical means of investigation; when graphic methods are employed its presence can be determined positively. In reference to his case, the points to be noted are: The tracings obtained proved conclusively the presence of a tricuspid stenosis. Most likely there was also a mitral lesion, because of the systolic murmur transmitted to the left and the extensive enlargement of the heart to the left. The excellent general condition and the slight discomfort experienced by the patient exemplifies the observation of Mackenzie and Volhard. A probable syphilitic aetiology.

6. The Early Diagnosis of Pulmonary Tuberculosis.—Gaines emphasizes the following points: 1. The clinical picture of very early pulmonary tuberculosis is utterly different from what is popularly known as consumption. 2. The symptoms of early tuberculosis are exceedingly insidious, and easily overlooked in a considerable number of cases. The laity particularly should be instructed concerning the nature of these early symptoms, and physicians should be on the alert for them. 3. The physical signs of early tuberculosis are difficult of detection, and necessitate a particularly careful examination. 4. Tuberculin properly and carefully applied is of great value in diagnosing early afebrile cases. 5. The prolonged absence of bacilli from the sputum is of no value in diagnosis.

BRITISH MEDICAL JOURNAL.

August 14, 1900.

1. The Double Filigree Operation for the Radical Cure of Inguinal Hernia, with Notes of Thirty-three Cases; and on Certain Cases of Ventral Hernia Cured by the Implantation of Filigree. By LAWRIE MCGAVIN.
2. Acute Necrosis of Skin, By CAREY COIMBS.
3. Three Demonstrations on Congenital Malformations of the Palate, Face, and Neck, By PROFESSOR ARTHUR KEITH.
4. A Note on Prognosis in Tetanus, By JOHN PATON.
5. The Sterilization of the Skin of Operation Areas, By J. LIONEL STRETTON.

1. Inguinal Hernia.—McGavin states that the complete and permanent cure of inguinal hernia depends on: (a) The total abolition of the peritoneal sac or sacs; and it must be remembered that one of these may be thick walled and perfectly obvious, while another may be present which is of the most extreme tenuity, difficult to find, with a lumen only admitting a probe, and yet quite capable of enlarging one day to greater capacity. (b) The permanent approximation of the muscular structures of the inguinal canal to Poupart's ligament. (c) The maintenance of the histological character of these structures by careful operative technique and by the subsequent employment of properly regulated physical exercises. And (d) on the prolongation of convalescence in the recumbent position for a period much beyond that which is usually accorded to these cases. It is easy to see that while the first and fourth of these essentials present no very great difficulty, the second and third are not so simply attained. The gap to be covered may be enormous; the musculature may be attenuated, friable, and fibrous, and thus it may be that the whole inguinal canal presents such a wreck that the possibility of

cure seems quite out of the question. In other cases, although the structures may be in fair condition, the amount of dissection required to accomplish the approximation, especially in old standing and recurrent cases, and possibly the tension necessary to keep muscle and ligament in accurate contact, are such that, within a few weeks of the operation, what was muscular is reduced to fibrous tissue. Now the muscle which is brought down is brought down with a very definite object; its purpose is not merely to block the canal passively by its presence (the peritoneum and the abdominal aponeurosis would of themselves do that), but by its active contractions to tighten up the walls of the canal without suffering permanent loss of elasticity in doing so. When an operation has been done and the trouble recurs, it is not muscle which is found covering the sac; what is found is merely the fibrous remains of the stretched union, the muscle having receded to a point above the level of the canal. Had the muscle been sound and active, and had it remained in close apposition to Poupart's ligament, recurrence would have been impossible. It is therefore clear that to get a permanent result which shall honestly reserve the term "radical cure," a term hitherto much misused, is not by any means so simple as it would at first sight appear. Bassini's operation, when done early in the history of a hernia and followed by sufficiently protracted convalescence, is an excellent operation in most cases; there are others, however, in which it fails to meet the requirements of modern surgery, and these may be said to be the following: 1. Those of inguinal hernia in elderly subjects. 2. Those in adult life where the strain of certain occupations is so constant and severe upon the abdominal walls, that it is unreasonable to expect a cure when treated by the ordinary methods. 3. Those in which, although in young subjects, the muscular structures of the part are found at time of operation to be thin, badly developed, or stretched and loose over a large area. 4. Those in which the hernia has recurred, especially if after a carefully carried out operation followed by a primary union. 5. Those in which the hernia is of such size that the gap cannot be closed without the exercise of such tension as to produce strangulation of the structures within the grip of the sutures—a condition which is one of the most certain of all the predisposing causes of recurrence.

2. **Acute Necrosis of Skin.**—Coombs reports such a case, of bacterial origin. Quinine and iron were taken throughout the illness. Opium was given at night, and was added to the ointment used for about a year—namely, lanolin containing tincture of benzoine and opium, suggested by Dr. Milner Moore. At first boric acid was used in carbolic lotion, 2.5 per cent. Then, by the advice of Dr. Firth, of Bristol, iodoform was added to the lotion, and the edges of the wound were painted with hydrogen peroxide. These methods were continued during the time of rapid sloughing—ten weeks. When the skin began to die again, in March, 1909, he ionized the sore by placing the positive electrode of a Leclanche battery over layers of lint soaked in 2 per cent. zinc sulphate solution on the sore; 10 to 12 milliamperes of current were used for ten minutes every second or third day. The result was to make the surface look silvery white, as though mild silver

nitrate had been applied. But the use of hydrogen peroxide and iodoform lotion had a better effect, and at the end of six weeks the recurring ulceration was arrested.

4. **A Note on the Prognosis of Tetanus.**—Paton concludes from his observations in two cases that the synovial fluid of the tendon sheath is an excellent medium for the growth of the tetanus bacillus, and that steeping in 1 in 40 solution of carbolic acid will not prevent the occurrence of tetanus if the tendon sheaths are exposed. When tetanus has occurred, also, the sheath of the tendon should be freely opened up, even although there is no apparent necessity to do this. It is also evident that hydrogen peroxide is capable of destroying the tetanus bacillus when it can be reached.

5. **The Sterilization of the Skin of Operation Areas.**—Stretton advises the use of iodine solution because it is an efficient method of skin sterilization. The surgeon can be absolutely certain that it has been applied. It is quickly and easily applied, and saves the patient the suffering of a preparation which is at present very lengthy and very disagreeable. It obviates the necessity of shaving, which is unpleasant at the time and causes considerable irritation afterwards. It saves an enormous amount of labor upon the part of assistants and nurses, and consequently a lessened expenditure, and it saves the cost of preparatory materials and dressings. It can be used in emergency cases where preparation by the usual method is impossible.

THE LANCET.

August 14, 1909.

1. Malformations of the Heart, By ARTHUR KEITH.
2. On the Preparation and Keeping Properties of Antityphoid Vaccines, By D. SEMPLE and H. S. MATSON.
3. Congenital, Hereditary, and Family Hematuria, By JOHN AITKEN.
4. The Genesis of the Modern Infirmary, By F. S. TOOGOOD.

2. **On the Preparation and Keeping Properties of Antityphoid Vaccines.**—Semple and Matson says that the sterilization of antityphoid vaccine can be accomplished by the addition of 0.5 per cent. carbolic acid. Heating a vaccine in order to sterilize it introduces a harmful and unnecessary element which acts in two ways: (1) It diminishes its immunizing properties, and (2) it curtails its keeping properties. In the experiments here recorded the deleterious effects of heat are clearly shown. Antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid retains its immunizing properties unimpaired for two years at least. This is proved (1) by the fact that animals and men treated with a two years old vaccine prepared by this method show the same blood changes as those treated with a fresh vaccine similarly prepared; and (2) by the fact that animals treated with a two years old vaccine prepared by this method withstand the same amount of a virulent typhoid culture when given intraperitoneally as those treated with a fresh vaccine similarly prepared. Animals inoculated with antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid attain a higher degree of immunity (as proved by blood changes and the resistance to lethal doses of a virulent typhoid culture) than similar animals inoculated with a vaccine sterilized by heat

(60° C. for twenty minutes, or 53° C. for one hour) and the subsequent addition of an antiseptic (carbolic acid 0.5 per cent., or lysol 0.25 per cent.). An antityphoid vaccine sterilized by heating for twenty minutes at a temperature of 60° C., and the subsequent addition of 0.5 per cent. carbolic acid has considerably deteriorated after being kept for two years, as proved by the blood changes, and effects of lethal doses of a virulent typhoid culture in animals inoculated with this vaccine. Pure carbolic to the extent of 0.5 per cent. appears to be the best agent with which to sterilize bacterial vaccines, and its general adoption would obviate any necessity for heating.

MEDIZINISCHE KLINIK.

July 11, 1909.

1. Diagnosis of Tuberculous Ætiology in Ophthalmology, By W. LÖHLEIN.
2. Immunity against Tumors, By E. VON DUNGERN.
3. Treatment of Surgical Tuberculosis with Marmorek's Serum, By E. W. SIKEMEIER.
4. Pathology and Treatment of Free, Extensive Peritonitis after Perforation of the Appendix, By BERTELSMANN.
5. A Case of Syphilitic Elephantiasis Cruris, By G. MORAWETZ.
6. The Value of the Estimation of the Antitrypsin of the Blood for Diagnosis and Prognosis and the Effect of Arsenic Waters, By BRENNER.
7. Studies of the Viscosity of the Blood, in the Healthy and Diseased, By G. JORIS.
8. What Do We Know to-day Concerning the Carriers of the Syphilitic Contagion (the Spirochæta Pallida)? By OSCAR SCHEUER.
9. Modern Works in the Fields of Nutritive Hygiene, By W. HOFFMANN.
10. French Works in the Field of Congenital Dislocation of the Hip, By SIEGFRIED PELTESOHN.

1. **Diagnosis of Tuberculous Ætiology in Ophthalmology.**—Löhleïn discusses the use of the cutaneous and conjunctival tests with tuberculin for the detection of tuberculosis in suspected cases of eye diseases.

3. **Surgical Tuberculosis.**—Sikemeier reports seventeen cases of surgical tuberculosis treated with Marmorek's serum. No improvement was obtained in five patients, two of which were hopeless cases from the start. Six patients were discharged as cured, six as much improved but not cured.

4. **Peritonitis after Perforation of the Appendix.**—Bertelsmann urges laparotomy, examination of the entire peritoneal cavity with the hand, breaking up all adhesions, and emptying all encapsulated foci of inflammation, washing out of the cavity, filling it then with salt solution, suturing of the wound leaving a glass drain, maintenance of the weakened circulation by appropriate means, irrigation of the rectum with salt solution, excitement of peristalsis by local warm applications and lavage of the stomach. He says that he has thus treated seventy-two patients during the past five years and has saved about eighty per cent.

6. **Antitrypsin in the Blood and Arsenic Waters.**—Brenner finds the antitrypsin in the blood increased in anæmia and chlorosis, and has obtained marked improvement on the general condition in such cases by the administration of arsenic waters.

7. **Viscosity of the Blood.**—Joris states as the result of his investigations that the viscosity of human blood is independent of age. Women have

a lower viscosity than men; the average values found were for children 5.01, for women 5.08, and for men 5.37. There is an intimate connection between the viscosity of the blood and its hæmoglobin. A lowered value of viscosity corresponds to less hæmoglobin, and an increased hæmoglobin is associated with greater viscosity. In pathological conditions in which the blood contains an increased quantity of carbon dioxide in consequence of dyspnoea and cyanosis a high value of viscosity is found. In cases of arteriosclerosis in which the viscosity is increased this is lowered by the prolonged use of iodine. The viscosity sinks in increasing hydræmia, increases with lessening of the water of the blood, and reaches its maximum in diabetic coma and with excess of blood corpuscles.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 13, 1909.

1. Contribution to the Study of the Subphrenic Abscess on the Left Side, By MEISEL.
2. Mobilization of the Thorax, By FRÄNKEL.
3. Excess of Clinical Sensitiveness, By MORO and STEEMAN.
4. The Importance of Lecithin in Malignant Tumors, By SCHENCK.
5. Chantemesse's Ophthalmoreaction in Typhoid Fever, By BECKERS.
6. Ferment and Antiferment Treatment of Suppuration, By KANTOROWICZ.
7. The Question of the Artificial Formation of the Cornea, By SALZER.
8. Contributions to the Casuistics of Paratyphus Infection, By BINGEL.
9. Fibrolysin, a Remedy for Obesity, By RIEDEL.
10. The Behavior of Veronal (Veronal Sodium) in the Human Body, By FISCHER and HOPPE.
11. A Case of Isolated Luxation of the Os Naviculare Tarsi, By GOTTSSTEIN.
12. The Clamp Suture, By VOIGT.
13. An Improved Mercury Manometer for the Purpose of Estimating the Blood Pressure, By ZABEL and SCHRUMPF.
14. Concerning Helgoland for the Treatment of Hay Fever, By WOLLE-EISNER.

1. **Subphrenic Abscess on the Left Side.**—Meisel reports a case in which a subphrenic abscess on the left side was correctly diagnosed and cured after resection of the eleventh rib. The abscess cavity contained about 150 c.c. of creamy, yellow pus without bad odor or gas, which contained staphylococci. Examination with the finger showed that the cavity was smooth walled, extended beneath the diaphragm, and permitted the softer walls of the stomach and intestine to be clearly distinguished from the harder spleen. The patient had been operated upon a year and a half previously for purulent appendicitis, and the writer believes that this abscess was the result of that suppurative process.

3. **Excess of Clinical Sensitiveness.**—Moro and Steeman find that after repeated injections of atoxyl the skin reaction is not only more intense, but also appears more quickly than at first, and that there exists a notable parallelism between the primary atoxyl reaction and the cutaneous reaction of von Pirquet to tuberculin. This parallelism showed itself also in the degree of reaction, i. e., weak reactions to tuberculin corresponded in general to weak reactions to atoxyl and the reverse. The most marked primary reaction to atoxyl was met with in scrofulous children.

4. **Lecithin and Malignant Tumors.**—Schenck asserts that flakes of lecithin are commonly present in the sera of persons suffering from malignant tumors.

5. **Ophthalmoreaction in Typhoid Fever.**—Becker's observations are confirmative of the reaction produced in typhoid fever patients by the instillation into the conjunctival sac of extract of typhoid as recommended by Chantemesse for the purpose of securing an early, positive diagnosis.

7. **Artificial Formation of the Cornea.**—Salzer describes an experiment in which he implanted portions of the cornea of a horse preserved in formol into the cornea of a rabbit. The results seem promising.

THE PRACTITIONER.

August, 1900.

1. Some Cases of Chronic Ulceration of the Rectum.
By D'ARCY POWER
2. The Role Played by Diet in Bright's Disease.
By W. B. WARRINGTON.
3. A Report on 250 Cases of Spinal Analgesia by the Use of Stovaine Glucose Solutions,
By LAWRIE MCGAVIN and GWYNNE WILLIAMS.
4. Remarks on the Treatment of Fractures of Long Bones, with Special Reference to the Extension Method,
By J. HOGARTH PRINGLE.
5. A Case of Acute Infective Endocarditis, treated with a Vaccine prepared from the Patient's own Blood, and ending in Recovery,
By A. F. R. CONDER and J. R. COLLINS
6. The Diagnosis of Permanent Mental Deficiency in Infancy and Childhood,
By C. PAGET LAPAGE
7. The Medical Inspection and Treatment of School Children,
By CLEMENT DUKES.
8. Use of Thorium and Radium in Some Diseases of the Pharynx and Larynx,
By L. M. CHESNEY.
9. The Prophylaxis of Aphasia,
By FREDERIC C. COLEY.
10. Adventures with a Curette,
By ROBERT WATSON.
11. A Review of Recent Ophthalmic Literature,
By L. VERNON CARGILL.

1. **Chronic Ulceration of the Rectum.**—Tower remarks that patients who are suffering from ulcerative colitis should be treated by medical means in the earlier stages of the disease, because many of the patients with sporadic cases can be cured, if they are taken in hand at once. The general treatment is to prevent the accumulation of discharges in the rectum, to soothe the irritated state of the bowel, and, if possible, to prevent the multiplication of the infective microorganisms in the mucous membrane. The patient is to be kept in bed, and given 1 drachm doses of magnesium sulphate, every hour, with the object of promoting a flow of lymph toward the intestinal walls, which will perform the same function as does the increased flow of blood through an inflamed part, produced by the application of a fomentation. The rectum is also to be well flushed out daily with an enema of boric lotion, or salt solution, at a temperature of 105° F., while every other day the enema is altered to one containing 10 grains of silver nitrate in a pint of distilled water. If these means fail, they should not be persevered with in the hope of improvement, as the condition is progressive, and becomes more serious with lapse of time, but should be discarded. Mercury may then be given in the form of calomel in a single dose of 10 grains, followed by 3 to 5 grain doses, if the drug seems to cause improvement. Ten grain doses of tannigen are sometimes useful, and chlorodyne is serviceable when there is much tenesmus. It can be given in

10 minim doses with 20 grains of bismuth oxycarbonate in an ounce of chloroform water. Some advise the use of quinine in a single 15 grain dose of quinine sulphate repeated in four hours, if the temperature has not fallen, followed by 5 grain doses until the symptoms subside. Enemata containing 1 or 2 drachms of salol dissolved in oil of turpentine, and added to each pint of hot water.

3. **Spinal Analgesia.**—McGavin and Williams report 250 cases of spinal analgesia by the use of stovaine glucose solution. They observe that spinal analgesia is a method which has a definite place and use in modern surgery, and of which the future is no longer in doubt. Stovaine is admirably suited to the purposes of spinal analgesia, and is probably as safe as any other analgesic at present in use. The risk of infecting the spinal meninges is, in proper hands and where proper precautions are taken, very slight. The method of spinal analgesia is unsuited to the Trendelenburg position. Failure to reach the spinal theca is usually due to faulty technique, while failure to obtain sufficiently high analgesia is commonly due to insufficient dosage, and is to be met in most cases by a second injection. The attempt to push the analgesia to a higher level than the fourth dorsal area is, in the present state of our knowledge, unwise. The lateral position, although rendering the injection rather more difficult than the sitting position, is less likely to be followed by disquieting symptoms, and commonly gives better results. The great majority of patients are in favor of the method, preferring to retain consciousness so long as the area of operation is screened from their view. In support of this many patients have elected to have spinal analgesia for second operations. The contraindications hitherto summarized by various writers must be accepted with reserve, owing to the lack of details supplied, and the great variety of methods, analgesics, and doses employed. Sepsis, syphilis, and old age do not appear to influence the reaction of the patient to stovaine. The action of stovaine is purely one of surface effect, resulting in the blocking of nervous impulses, and probably affecting only the anterior and posterior nerve roots. The method being but a special branch of the science of anaesthetics, its administration and investigation should be undertaken by the anaesthetist rather than the surgeon, and especially so since at times its application may fail from various causes and necessitate the administration of a general anaesthetic.

8. **Use of Thorium and Radium in Some Diseases of the Pharynx and Larynx.**—Chesney has not found that thorium had any effect upon the lung condition in cases of phthisis. Many patients improved greatly so far as their chests were concerned, but, as they were under strict sanatorium treatment, it is probable that the pulmonary disease would have improved anyway, and that the thorium had nothing to do with the amelioration. In most of the tuberculous cases treated thorium was only used when the local throat condition did not seem to be benefiting under ordinary open air treatment, and, therefore, when decided improvement in the throat was noticed after inhalations had been begun, the thorium may be given the credit safely. In some cases, though the lung condition got steadily worse, the throat either remained as it was or got

better appreciably. In other cases thorium has not appeared to do any good, but, as a rule, in these cases the chest also did not get any better and the patients got rapidly worse. His experience of treatment with radium is neither extensive nor encouraging. In all but one of his cases he worked under the disadvantage of being able to apply the treatment himself only once a week, and having to leave the daily treatment to others. Thorium has the advantage that patients can learn easily to use the inhaler for themselves. In the case of laryngitis, either chronic or acute, occurring during the course of tuberculous disease of the lungs, thorium appears to be a useful remedy, and it can be used with great advantage in nontuberculous pharyngitis or laryngitis. The solution lasts for a lifetime. Patients can use the inhaler for themselves, and even if it does no good, apparently it can do no harm, which is more than can be said for all remedies which patients use for themselves for indefinite times.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirty-fourth Annual Meeting, Celebrating the Centennial of McDowell's Operation, Held in New York, April 20, 21, and 22, 1909.

The President, Dr. J. RIDDLE GOFFE, of New York, in the Chair.

(Continued from page 331.)

What Shall We Teach the General Practitioner Concerning the Treatment of Abortion?—Dr. FREDERICK J. TAUSSIG, of St. Louis, mentioned the never ceasing argument as to whether the finger or the curette was preferable. The curette was still popular with the general practitioner because it required less technical skill for its use. The summarized experiences of many large clinics showed that no one method of treatment was available for all cases, but that each had its special field of usefulness. An attempt to construct a simple table of operative procedures varied according to (1) the stage of pregnancy at which the abortion occurred (first six weeks, second six weeks, third to fifth month); (2) the stage of the abortion (imminent, inevitable, incomplete); (3) the experience of the physician in charge (country practitioner, city practitioner, specialist); (4) surroundings (country residence, city residence, hospital). The author demonstrated a new case of instruments especially designed for the treatment of abortion and miscarriage.

Dr. JOSEPH TABER JOHNSON, of Washington, D. C., agreed with the author, and said that as gynecologists and obstetricians we had much to do with the effects of badly managed cases of abortion. The dispensary and charity hospital class of patients, who came for diagnosis and treatment, attributed their present ill health to their last abortion, and by questioning them it was found that their cases were badly managed in the great majority of instances. As to whether the curette or the finger should be used to scoop out of the uterus the remains of an abortion, he agreed with the essayist that in the first six weeks, when the neck of the uterus was dilated only a little, it would be doing violence to the part

to attempt to dilate to such an extent as to permit the index finger to pass into the uterus and scoop out what remained there. On account of the great damage done by the curette, he advocated in the series of cases which the essayist had detailed, after the sixth week, the seventh and eighth weeks, that the woman be anesthetized and the finger introduced into the uterus instead of the curette, and the remnants of the afterbirth or membranes removed. The finger was a much more intelligent instrument than the curette.

Dr. WILLIAM H. WATHEN, of Louisville, said the placenta should always be removed immediately after the delivery of the child, because delay in this regard was dangerous, and one never knew when danger was going to come. Speaking of perforation of the uterus with a curette, not only did practitioners perforate this organ, but they did not know when they used this instrument whether they had removed all the secundines or not. The curette should not be used under any circumstances to remove retained secundines, unless in exceptional cases, but one should rely on the educated finger.

Dr. THOMAS J. WATKINS, of Chicago, said he not only followed out the old method of the use of the vaginal pack in cases where the uterus could not be emptied without a great deal of traumatism, but packed the uterine cavity. This should be done in all cases where the uterus could not be emptied without considerable traumatism, and especially where the cervix was not well dilated. This treatment could be extended even to the cases of infection.

Dr. MALCOLM MCLEAN, of New York, wanted to know how a man's finger had become so elongated and prehensile that he could reach the corners of the uterus and safely feel that he had removed all detritus. There were undoubtedly men, such as Dr. Wathen, who could do this. He could not. He thought the mistake was made very frequently by good operators, who thought they had emptied the uterus by the finger, but Nature came to their rescue and emptied it afterward of pieces of afterbirth which otherwise might give trouble.

Dr. EUGENE C. GEHRUNG, of St. Louis, said that if we waited three or four hours after the expulsion of the ovum, we should have very great difficulty in inserting the finger, while if it was done immediately it could be effected with great ease. When the finger was inserted into the uterus, if one took care to put the other hand on the fundus and pressed the area over the finger, the little spaces in the uterus could be cleaned out. He had succeeded in removing retained pieces of placenta in this way.

Dr. JOSEPH E. JANVRIN, of New York, agreed with Dr. Watkins in regard to the propriety and the effectiveness of passing a small wad of gauze up into the cervix and tamponing the vagina thoroughly to excite contractile pains. This had been his method of treatment for many years.

Dr. TAUSSIG said that he had presented his paper not as a subject for discussion by the fellows as regarded their own technique, but with regard to the technique that they would advise the general practitioner to use, and he thought in this respect they should be very clear and definite in instructions. The tampon, the curette, the finger, each should be used in certain instances, and the general practice

tioner should be impressed with the exact indications for each of these methods.

Lateralateral Anastomoses of Ileum and Sigmoid Flexure of Chronic Mucous Colitis.—Dr. GEORGE H. NOBLE, of Atlanta, presented a preliminary report of twenty-seven cases in which he had resorted to this operation. The results showed cures in the majority of cases, considerable improvement in others, and little improvement in a small percentage. Mucous discharges were cured in the first series of older cases, and decreased in those recently operated on. Colic and soreness of the abdomen had been cured or relieved in almost all cases. Headaches from intestinal toxæmia had also been relieved and the general health of the patients improved to a greater or less extent. The operation did not cure constipation in all cases, but in face of this fact, patients with constipation reported either cures or improvement of the mucous colitis. The author pointed out the principles involved in the operation, and gave a short history of the surgical treatment of chronic colitis. In addition to this operation, it was very essential to correct complicating lesions which either led to constipation or interfered with a free outdoor life. It was also essential to regulate the diet in order to secure good results in all cases.

Dr. GRANDIN said a simpler method sometimes answered for the cure of mucous colitis than anastomosis of the ileum and sigmoid flexure, and this was the removal of the appendix. Since it had been his custom to take the appendix out, as a routine measure, whenever in the course of an abdominal section for other lesions the condition of the patient allowed of the extra few minutes, he had noticed frequently that mucous colitis had disappeared. The removal of the appendix in one case cured a mucous colitis of twelve years standing.

Dr. LEWIS S. McMURTRY, of Louisville, said that since a large number of men had been in the Philippines and contracted dysentery, this subject had received more consideration and had developed the rather surprising fact that as far north as Cincinnati amebic dysentery was indigenous. He had had an opportunity to give some attention to this subject, and had been astonished at the number of cases of amebic ulceration of the colon that had been discovered in people who had never been out of this country nor even in any tropical climate. They had been treated for years in various ways, but they would not come under the class of cases discussed by Dr. Noble with a view to surgical treatment in the manner he had indicated. By position, inverting the patient, and using an instrument which would allow the colon to be examined and illuminated for a good distance, the characteristic ulceration of this form of lesion of the intestine would be discovered, and it was almost incurable by enemata and systemic treatment. No operation had been more useful in the treatment of this class of cases than appendicostomy. He had seen in the hands of his colleagues half a dozen of these cases that had been treated by this operation in the last year, with good results. The scrapings from these ulcers, when examined, had been found to be literally alive with amebæ.

Dr. FRANKIN H. MARTIN, of Chicago, said that perhaps there was a similarity between the opera-

tion described and the one suggested by Arbuthnot Lane, namely, the removal of the colon for the treatment of constipation. This operation provided a remedy for that part of the colon which was dead, leaving a portion of it unused by the Arbuthnot Lane operation.

The PRESIDENT said, with reference to the presence of amebic dysentery below the Ohio River as having been discovered in the last few years, that he had heard the explanation that it had been brought back by soldiers from the Philippines, and might have become indigenous at the present time from that cause.

Dr. NOBLE said he had purposely avoided saying anything about amebic dysentery and similar conditions, from the fact that the treatment of them was so well known, and that so many operations had been done for their relief. As to the remarks of Dr. Martin, such a radical operation as the removal of the colon would hardly be justifiable in mucous colitis. That operation belonged to another disease.

Dr. THOMAS J. WATKINS, of Chicago, described the operative treatment of extensive cases of uterine prolapse and cystocele.

Dr. WILLIAM M. POLK, of New York, described the suprapubic operation upon the pelvic floor for procidentia uteri.

The Choice of Time of Operation for Pelvic Inflammation of Tubal Origin.—Dr. F. F. SIMPSON, of Pittsburgh, said that in his judgment abscesses easily accessible for evacuation without traversing the free abdominal cavity were often best treated by early drainage. In other instances, delay with definite but simple treatment would probably prove the better course. Many patients would thus have the normal functions of their organs restored and avoid an operation. For the remaining cases which demanded operative relief, the writer was in the habit of choosing a time: First, when the patient had recovered from her acute illness, and when her margin of reserve strength had been raised to its highest point of efficiency; second, when her temperature had been normal for a minimum period of three weeks; third, when the inflammatory exudate about the diseased tube had been completely absorbed; fourth, when a careful pelvic examination was no longer followed by a decided or persistent rise of temperature.

Dr. HERMAN J. BOLDT, of New York, said it was dangerous to operate during an acute suppurative salpingitis, and in ninety-nine cases out of a hundred it was possible to wait until the acuteness of the attack had passed. As to how long that took was a question; it would depend entirely on the condition of the patient. One might operate in the interval, if there was sufficient indication for operation. Whenever the Fallopian tubes were distended with pus to such an extent that one could readily palpate them through the cul-de-sac of Douglas, the tube should be opened and the pus evacuated.

Dr. BOVÉE said he would not be so conservative as the essayist and wait three weeks, without a single rise of temperature during that time, before operating. His experience with such appendages had been that they did not return to normal, that rarely did they get into a condition for functioning, and

that in most cases in which vaginal incision had been done for the emptying of pus the appendages and tubes required removal subsequently, and with them the uterus in some cases.

A Method of Obtaining More Reliable Knowledge of the Exact Areas of Pain Complained of by Patients Afflicted with Visceral Disease.—Dr. HARRIS said that when a patient complained of pain she was at once asked by the nurse to indicate the exact area of pain, and also to point to the centre or point of most severe pain, the nurse marked the outer boundaries as well as the centre or centres of pain complained of, employing therefor a definite code. All markings were maintained on the body until they were transferred by the doctor to the history book or sheets. The nurse in entering upon her notes descriptions of pains thus avoided the necessity of reference to anatomical regions. He gave a description of the marking code. He presented a copy of the standing instructions to nurses for the prosecution of this work, and showed photographs from life of patients thus marked.

Further Reasons for Examining and Removing the Appendix before Closing the Abdomen.—Dr. A. LAPHORN SMITH, of Montreal, said that abdominal section had now a very low death rate. The few deaths which occurred were due to something going wrong, the cause for which had not always been discovered, even after the abdomen had been reopened. He believed that this unknown cause was in many instances a chronic appendicitis, which either suddenly became acute or which caused obstruction of the disabled intestine by adhesions. The death rate from puerperal sepsis was now very small, and the few deaths which took place could not always be attributed to infection by the doctor, nurse, or even the patient herself. The author gave instances to prove that the abdomen should be opened and the appendix examined in every serious case, as he believed that many supposed deaths from puerperal sepsis were really due to a perforated or gangrenous appendix. The removal of this dangerous and useless organ, when it could be done without adding materially to the danger of the laparotomy, would insure the patient against a serious risk at a subsequent confinement.

Ovarian Tumors Complicating Pregnancy, Labor, and the Puerperium.—Dr. HERBERT R. SPENCER, of London, England, reported forty-one cases of these tumors. The youngest patient was twenty, the oldest forty-three, the average thirty. As to the result of ovariectomy to the mothers, all the patients recovered, except one, who died of intestinal obstruction caused by adhesion of a coil of intestine to the pedicle. The treatment of ovarian tumors complicating pregnancy, labor, and the puerperium had by some writers been considered too much from a surgical standpoint. The obstetric aspect was not less important and in some cases was the dominant factor. Among the fifteen cases which he had personally treated during pregnancy, there were three of contracted pelvis which necessitated induction of premature labor in two, and would have done so in the third had the patient not aborted. During the first half of pregnancy ovarian tumors should be removed wherever their situation and whatever their size. As to the exceptions, the following tumors should not usually be re-

moved: 1. Lutein cysts complicating hydatidiform mole. 2. Bilateral tumors causing no symptoms, if the patient was childless, or, if operated on, part of an ovary should be left behind. 3. Primary adherent malignant cysts. 4. Secondary malignant cysts.

During the second half of pregnancy all large ovarian tumors and ruptured, inflamed, and strangulated tumors should be immediately removed. During labor the best treatment was abdominal ovariectomy, immediate in the case of large tumors, at the end of the first stage or after delivery in the case of small tumors. In the puerperium, ovarian tumors should be removed as soon as practicable, when possible within twenty-four hours of delivery. If there was doubt as to the aseptic condition of the uterus, a delay of a week or two might be advisable, unless indications of strangulation or infection of the tumor arose, when the tumor should be immediately removed.

Ovarian Tumor with Twisted Pedicle Complicating Pregnancy.—Dr. EDWARD P. DAVIS, of Philadelphia, reported a case of ovarian tumor with twisted pedicle in a Polish woman, married, pregnant for the third time. His study of the subject led him to the belief that but one course of treatment was justifiable in cases of ovarian tumor with twisted pedicle complicating pregnancy, namely, removal as soon as the diagnosis of the condition could be made or as soon as indications of this condition were present. The complication of twisted pedicle was so serious as to demand an immediate operation. If an exact diagnosis before operation was impossible, the conditions which simulated twisted pedicle in themselves demanded operation. In the absence of an exact diagnosis, the obstetrician should operate in the interest of the patient.

Ephraim McDowell, the Father of Ovariectomy.—Dr. J. RIDDLE GOFFE, of New York, selected this as the title of his presidential address. He gave a complete and valuable historical sketch of McDowell and his operation, and closed his address in the following words: "A hundred years—a century—have rolled by since that day, and yet the lustre of McDowell's achievement has grown steadily brighter to the present time. It was a fertile seed which, planted in appropriate soil, has risen to a mighty tree. It has manifold branches and has borne abundant fruit.

"McDowell did not live to see his operation adopted as a recognized surgical procedure, but he did have the satisfaction of knowing that Dr. Johnson, the editor of the *Medico-Chirurgical Review*, who declared in 1825 that he did not believe the operation had ever been done successfully and probably never would, the following year published in the same journal a recantation, in which he said: 'A back settlement of America—Kentucky—has beaten the Mother Country, nay, Europe itself, with all the boasted surgeons thereof, in the fearful and formidable operation of gastrotomy, with extraction of diseased ovaries. In the second volume of this series we adverted to the cases of McDowell, of Kentucky, published by Lizars, of Edinburgh, and expressed ourselves as skeptical respecting their authenticity. Dr. Coates, however, has now given us much more cause to wonder at the success of Dr. McDowell, for it appears out of five cases operated on in Kentucky by McDowell, four recovered after

the operation, and only one died. There were circumstances in the narrative of the first three cases that caused misgivings in our minds, for which uncharitableness we ask pardon of God and Dr. McDowell, of Danville.

"A broad and searching examination of all the claims put forward by aspirants or their friends to the honor of antedating McDowell has proved them, one and all, entirely groundless. The wide dissemination of the facts upon which this decision rests and the ripening influence of time have brought the members of the professional world into accord upon this subject, so that I think I am safe in saying that in this centennial year McDowell is universally recognized throughout the world as the originator of the operation and entitled to be proclaimed the Father of Ovariectomy.

"McDowell was born November 11, 1771, and died January 25, 1830, in the fifty-ninth year of his age.

"Peace be to his ashes and glory be to his name."

The Nurse as an Anæsthetist.—Dr. J. MONTGOMERY BALDY, of Philadelphia, said that a perfect solution of the problem of giving anæsthetics would be a medical man of a high grade of intelligence, with a well grounded medical and surgical education and a special education in anæsthetics, supplemented by a natural inclination in this direction as against any other. Were the attractions of anæsthesia sufficient to overcome the disadvantages of the scientific narrowness and lack of opportunity for distinction and income to hold a sufficient number of men of this type, or even of great worth, in this field? The answer seemed apparent. Possibly the future might increase the number, but at present they were so scarce as to be readily counted. The great city of Philadelphia did not, to his knowledge, contain one. Personally, his own inclination, governed largely by the means at hand and by past experience, lay in the direction of women as anæsthetists—in other words, trained nurses. The education of the trained nurse lay largely on medical and surgical lines, and she had, therefore, unless we excepted the woman physician, a sounder basis than other women on which to begin. Of this latter class, the women physicians, he could readily see that some would be available for the service, but in most instances many of the most serious objections obtained in their case as did in the case of men physicians.

To the nurse anæsthesia would prove a stepping stone to something better than she had originally chosen, a higher and more dignified position, and would appeal in its own way to her ambition and pride just as did the superintendency of a training school. The field would prove interesting, and his experience had shown him it would be the right kind of choice, stimulating her to an effort to improve and perfect herself and to an earnest study of the whole matter in hand. In this way would be eliminated the inattention to the anæsthetic, with its attendant annoyances and dangers, there being no desire for or chance of an assistantship or future chiefship. In this way might be secured a sure method of always having the anæsthetist on hand, as she would live in the institution and be ready for an emergency.

(To be concluded.)

Letters to the Editor.

ANTERIOR POLIOMYELITIS IN NEW YORK.

154 WEST SEVENTY-SECOND STREET,

August 26, 1909.

To the Editor:

At the present time, I believe, physicians consider New York city to be almost free from anterior poliomyelitis, although since the recent widespread epidemic sporadic instances of this crippling disease are from time to time presenting themselves. During the past week, however, cases have come under my care which have compelled me to change my opinion.

The Beth Israel Hospital, situated at Jefferson and Monroe Streets, has accommodation on the medical division for about twenty children. To this comparatively small children's ward eight children with anterior poliomyelitis were admitted between August 17th and August 24th. An error in diagnosis was not possible. The symptoms were those with which we all became conversant during the past epidemic, cerebral manifestations and facial palsy frequently complicating the paralysis of the extremities. The afflicted children were infants between the ages of one and two years, and it is worthy of note that the majority had been suffering with diarrhoea previous to the sudden onset of fever and paralysis. The eight patients lived, respectively, in Clinton, Delancey, Cherry, Christie, Madison, Essex, and East Second Streets, that is to say, in the congested lower east side of the borough of Manhattan. It is this district from which the hospital recruits by far the majority of all its patients.

Upon inquiry I have learned that other cases of this disease have been recently noted in this district. I am unable to say, however, whether similar cases have not been observed in hospitals in other sections of the city. Indeed, it is hard to believe that this disease is at present confined to the lower east side of Manhattan Island.

My object in writing you these lines is to call attention to a possible impending epidemic of anterior poliomyelitis; its insidious onset cannot be gleaned from a review of the weekly health report. Knowledge of the presence of this disease among us may be of aid in its early recognition or prove welcome to some who are awaiting an opportunity for a study of its ætiology. ALFRED F. HESS.

Book Notices.

[We publish full lists of books received, but we do not undertake an obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Der Schiffsarzt. Leitfaden für Aerzte und Kandidaten der Medizin. Mit Angabe der Reederien, ihrer Linien und Anstellungsbedingungen und Berücksichtigung aller einschlägigen Fragen. Von Dr. M. BRENNING und Dr. E. H. OPENHEIMER. Mit 6 Textfiguren. Berlin: August Hirschwald. 1909. Pp. vi-70.

This is a very practical *vade mecum* for ships' surgeons, containing everything that a maritime surgeon or one aspiring to be one ought to know. It takes into consideration principally the German lines, but refers also in a general way to all the other lines, setting forth the advantages and dis-

advantages such a position brings with it. As the authors have themselves served in the capacity of ship surgeon, they are fully conversant with the subject, and the book should be the traveling companion of every ship surgeon. An English translation would certainly be well received, but should also take up more fully the non-German lines.

Nouveau traité de médecine et de thérapeutique. Par A. GILBERT, professeur à la faculté de médecine de Paris etc., et L. THOINET, professeur à la faculté de médecine de Paris, etc. XIV. Maladies de la peau. Par E. GAUCHER, professeur de cliniques de maladies cutanées et syphilitiques, etc. Avec 180 figures intercalées dans le texte. Paris: Librairie J. B. Baillière et fils, 1909. Pp. 508. (Price, 11 Fr. 50.)

In this edition the author has accomplished a difficult task in a capable manner. He has condensed the subject of dermatology into the confines of a manual, and produced, at the same time, a comprehensive and up to date exposition of the subject. The first edition was written in collaboration with Barbe and in this volume the subjects of "epilation by the x ray, botryomycosis, and barates" are credited to Barbe, whose manuscripts were received shortly before his death.

While Gaucher's ripe experiences and his ultimate knowledge of and special interest in the individual subjects throughout the work are everywhere manifest, he has materially enhanced its value by assigning certain subjects to men who are particularly competent through recent special work in these lines. M. Monier-Vinard is, thus, responsible for the subject of sporotrichosis, M. Rubens-Duval for blastomycosis, MM. Wickham and Degrais for the treatment of vascular naevi by radium, M. Gaston for the treatment of naevi by the x ray, and M. Dominici for the pathological anatomy of mycosis fungoides and also for the treatment of cutaneous epithelioma by radium, while M. Zimmern has revised the entire subject of radiotherapeutics.

After describing the elementary lesions of the skin, the author takes up the subject of general ætiology and then proceeds at once to the description of the various diseases. There are no special chapters on general pathological anatomy or on general therapeutics, the histopathology and therapeutics of the individual affections, accompanying their description.

It is the undisputed privilege of the author of a manual to classify the diseases as, in his opinion, seems most convenient, and we think Gaucher's division of the subject is not a bad one. Under common inflammatory dermatoses, however, his first division, a rather heterogeneous group of affections, has been placed. This includes the members of the erythema group (including purpura and pellagra), urticaria, pityriasis rosea, the pemphigus group, eczema, the lichens, psoriasis, etc. Then follow the diseases of the pilosebaceous follicles, diseases of the sweat glands, of the hair and nails, the dyschromias and dermatoses due to vascular and lymphatic disorders. Hypertrophic and atrophic affections are next considered, followed by the neoplasms of the skin, and lastly, microbic affections and the diseases due to animal and vegetable parasites.

These various subjects are treated in a clear and concise way, supplemented by numerous and for the

most part excellent half tone illustrations. The authors' description of the cutaneous tuberculous diseases, covering some fifty pages, with illustrations, is worthy of special note, as also Monier-Vinard's exposition and illustrations of the interesting subject of sporotrichosis. The treatment of vascular naevi by radium (Wickham and Degrais) is most timely and of extreme interest.

The work as a whole should take a high place among manuals of skin diseases, but it needs an alphabetical index, in our opinion, to make it indispensable to the busy practitioner.

Infant Feeding. A Practical Guide to the Artificial Feeding of Infants. By J. S. FOWLER, M. D., F. R. C. P. Ed., Physician to the Royal Hospital for Sick Children, Edinburgh; Joint Clinical Lecturer on Diseases of Children, University of Edinburgh. London: Henry Frowde and Hodder & Stoughton, 1909. Pp. x-230.

The question of infant feeding has not by any means been solved, notwithstanding the innumerable books and essays written on the subject. It is one of the most important topics in medicine and should be well understood by every practitioner. We live in an age where a breast fed infant is almost the exception, as every physician knows, and this condition, we are sorry to say, is becoming dangerously close to universal. Moralizing does not help us; the facts are before us, and we have to act accordingly. The question therefore arises as to what is the best substitute. This we find fully treated in Fowler's book, which we can well recommend.

There is a discussion going on at present in which we have taken part in our editorial pages, not once, but often, concerning the so called pasteurization of milk. Our views, not in favor, we have expressed, and are glad to see that Dr. Fowler coincides with us. In Chapter II he treats the subject of sterilization. He says on page 36: "Sterilization by heat is the best and most widely available method. Its advantages far outweigh its drawbacks. Putting aside commercial bottled sterilized milk, which, having been overheated (240° F.) and stored in sealed flasks, will keep indefinitely, but which is not at all a desirable food for infants, we have three ing, pasteurization, and "sterilization" at 212° F. in separate varieties of home treatment—simple boil a water bath for periods varying from ten minutes to three quarters of an hour. It is not immaterial which of these is selected, and in order to appreciate the differences between them it is necessary to know something about the effect of heat on milk."

On page 38 he takes up pasteurization, sterilization, and boiling of milk. He says: "In order to pasteurize satisfactorily an apparatus is required in which the temperature of milk can be read on a thermometer. . . . It will be seen that little deviation from a temperature of 155° F. is permissible. Unless the temperature is raised to 145° F. the destruction of germs is not insured, while if it rises to 162° F. the soluble proteid is coagulated and one of the alleged advantages of pasteurization is lost. . . . In any method of pasteurization there is always a possibility that in the central portion of the milk, or in the scum which may form, some organisms may survive and infect the remainder. The advantages of pasteurization, viz., the noncoag-

ulation of whey proteid, the preservation of the antiscorbutic property of fresh milk, and the unaltered taste, do not compensate for the uncertainty of the process as carried out in the home." And, finally, on page 49, he comes to the conclusion: "On the whole, therefore, pasteurizing has no real advantage; the choice lies between boiling and sterilizing."

The book contains six chapters, of which chapter I is an introduction. Chapter II we have mentioned before. In Chapters III and IV the author speaks of feeding the normal infant with milk, diluted and undiluted, with milk modifications, and diluents. Chapter V treats of the diet in abnormal cases, while Chapter VI mentions the diet during the second year, weaning, mixed feeding, forced feeding, etc. In an appendix we find tables on the composition of patent foods, composition of milks; description of apparatus; recipes; milk analysis; percentage feeding with top milks, etc. A good index is added to this very useful book.

L. Landois's Lehrbuch der Physiologie des Menschen. Mit besonderer Berücksichtigung der praktischen Medizin. Zwölfte Auflage. Bearbeitet von Dr. R. ROSEMAN, o. ö. Professor der Physiologie und Direktor des physiologischen Instituts der westfälischen Wilhelms-Universität zu Münster. Erster Band. Mit 145 Abbildungen im Texte und 1 Tafel. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. xvi+480. (Price, Mk. 9.)

This is the second edition of Landois's textbook on physiology which Professor Rosemann has edited. Dr. Rosemann became the editor after the death of the author, in 1902, and his name appears on the title page for the first time in 1905, when the eleventh edition was published.

The general appearance of the book is the same as in the first edition, in 1880. The well known green paper cover has been used through all these years. But the text has undergone many changes and alterations. It is a practical book and has proved its value for the student by many translations, English, French, Italian, Japanese, Russian, and Spanish. There is hardly a medical book on the European continent, with the exception of Hyrtl's *Anatomie*, which has been so well received by the professors as a textbook for their students. Landois was a thorough teacher, enthusiastic, never tiring in his efforts to instruct his pupils; not only a teacher, but also a friend to his students. He himself had known the bitter life of a poor student. The university of Greifswald saw the entrance of the young student, and he remained true to his alma mater, being graduated in 1862 and becoming Privatdozent in 1863, assistant professor in 1868, and professor of physiology in 1872, which position he held until his death.

Professor Rosemann was one of Landois's many pupils, became later his assistant, and was then appointed professor of physiology in the University of Münster, and the selection of the publishers in asking him to edit Landois's textbook was a very proper one. He has successfully carried on the work, following his teacher's ideas. He has added to this edition a bibliography. Landois had given over 4,000 citations, but, not wishing to enlarge his book, had not quoted the sources. Rosemann has appended the references to each chapter. We congratulate the editor as well as the publishers on the new edition.

MEDICOLITERARY NOTES.

A radical cure for inebriety is attributed to Zaleucus, who flourished about 500 B. C. He ordered that any invalid who took wine in contravention of his physician's orders should be put to death. This story is interesting as showing an attitude toward alcoholic beverages supposed to be ultramodern.

According to Eliezer Edwards's *Words, Facts, and Phrases*, the word *bronchitis* came into general use only about the year 1850; Edwards says Leech, in the title of a cartoon about that time, spoke of it as the latest *new* fashionable disease. We find the word, however, in Beach's *American Practice* (a popular work), published in 1842.

If any practitioner remote from manufacturing houses still uses a crucible, he may be pleased to be reminded that the implement is so named because once always marked with a cross to prevent evil spirits from interfering with successful compounding. Evil spirits were a great nuisance before the days of rigid asepsis and dust proof balances.

The earliest mention of false teeth is probably in Martial's epigram, xii, 23:

Dentibus atque comis, nec te pudet, uteris emptis.
Quid facies oculo, Lælia? Non emitur.

(You use purchased hair and teeth without shame, Lælia; what will you do for an eye? That cannot be bought.) Artificial eyes are comparatively modern.

Sparkling champagne was discovered in the seventeenth century by a monk named Perignon, chemist to the abbey of St.-Pierre, Hautvilliers. The monks kept the secret to themselves till it was decided to send a present of a case to Louis XIV. This monarch insisted on popularizing the beverage, thereby, we believe, justly earning the title of Louis le Grand.

Cowper wrote of tea that it cheered but not inebriated. The good Bishop Berkeley, however, who had an early Emmanuel Movement of his own in which tar water was to be the instrument of the churchly cure of such as were beyond the coarser methods of the medical practitioner, forestalled Cowper with the gentle epigram that tar water of a nature . . . "to warm without heating, to cheer but not inebriate."

An anonymous poet has written:

Who never fasts, no banquet e'er enjoys;
Who never toils or watches, never sleeps.

How temperate in artistic indulgence are the Japanese, who place but one beautiful object on view at a time in their houses, too wise to dull the eye with a debauch of form and color, as our collectors do. The occasional glass of wine causes a thrill, a warmth, a stimulus to the imagination quite alien to the habitual bumper. Ah, if sensualists only understood the delights of temperance, they would be temperate through sheer sensuality!

The earliest mention of a regular practitioner of medicine in English history seems to be that of Coursus de Gangeland, an apothecary to whom was granted a pension of sixpence a day for having attended and taken care of H. M. King Edward III during a visit of the latter to Scotland. Similar acts of royal extravagance have changed the course of history.

About 1630 Sir Thomas Browne, in his *Religio Medici*, very solemnly wrote: "For my part I have ever believed and do now know that there are Witches; they that doubt of these . . . obliquely and upon consequence . . . not Infidels but Atheists." Strong language! Some 280 years hence will an editor smile as he reads an equally positive declaration of to-day concerning the asininity of such as refuse to accept all the conclusions of bacterial pathology? We do not smile at all of Sir Thomas's conclusions; for instance, at his dictum that clever men are never lucky. Not a reader of slender means will dissent from the following: "'Tis, I confess, the common fate of men of singular gifts of mind to be destitute of those of Fortune."

The eye of the modern child possesses a fineness of color sense quite unknown to the ancients. This is due doubtless to the evolution of the aniline dyes. We should consider an ancient Greek quite color blind. For instance, among the Greeks, *ξανθός* stood for a pale golden yellow, the favorite color of the hair among the gods, also for auburn and for chestnut in horses (Homer). *αλαργός* was a light green, the color of young grass, as well as gray, the color of fog, honey colored, the color of new cheese, of freshly cut wood. Although applied to the hue of a bilious subject, it also was used to describe the bloom of youth and the sparkle of wine. Sappho sang of a girl "pale as grass" from disappointed love. *κυανέος* described the blue of the sea, but also the eyebrows of Jove, the hair of Ulysses, and the complexion of a negro. It was used as well to describe the dark shade of distant crowds.

The *Delineator* for September continues its campaign for homeless children and makes a special plea for slightly crippled babies whom it is hard to place, although many of them are exceptionally bright. Such masters as Rudyard Kipling and J. J. Bell contribute good stories. A lady colleague, Dr. Charlotte C. West, not only defends a properly worn corset for her own sex's wear, but advocates its use by men. Full directions as to cut and style are given for the instruction of the benighted sex. We express a hope that only the paler colors will be worn and that the meretricious red and black satins will be eschewed by physicians of good taste. Dr. Woods Hutchinson has one of his popular medical articles, *How Nature Cures*. Alma V. Lafferty, member of the Colorado legislature, makes us wonder if a woman physician might not make a good legislatrix and defend our interests against the onslaughts of various quack enterprises, their vicious originators, and their weak kneed backers.

"Who can minister to a mind diseased?" cried Hamlet despairingly. If he had deferred his inquiry to the present century and given it sufficient emphasis, he would quickly have received several hundred beautifully printed and illustrated pamphlets from as many sanatoriums, in any one of which the lithemic prince would have found the prices royal if not the accommodations. Does not lithemic characterize Hamlet to a nicety? All the disputes as to his insanity being genuine or feigned may be set at rest by this diagnosis. "Fat and scant of breath," mys-

tical in his talks with Horatio; a religious doubter in his soliloquies; subject to fits of furious rage, culminating, one of them, in a double murder; of that quiet humor of underemphasis supposed to be peculiarly American, where he "kicks" Polonius; sublimely unconscious of his temperamental deficiencies, as when he declares he is "not splenetic or rash"; a thinker on a wide range of subjects, including the arts of poetry and the drama, and of Johnsonian ponderosity in laying down his opinions; warmly passionate, self centred, and without definite ambitions—surely Hamlet was a victim of deficient oxidation.

Miscellany.

Medicine in China.—Bret Harte once characterized the ways of the "heathen Chinese" as "peculiar." In nothing are his peculiarities more manifest than in the treatment of bodily ills. The only hospitals in the empire are those connected with the foreign mission boards, or organized through their influence, and the physicians in charge have many amazing and amusing illustrations of Chinese ideas and methods. For instance, a boy bitten by a mad dog was lately brought to an American board hospital by his parents who proudly informed the doctor, as proof that they knew precisely what to do, that they had caught the dog, pulled out some of its hair and steeped it in oil. This pleasant brew was then rubbed into the wound. Shades of Pasteur! Another patient was a man who became angry because the boil on his arm would not heal. He snatched up a great cleaver and gave it a slash. Months later he came to the mission hospital where amputation was advised. He refused and, though the arm healed, skin grafting had to follow and the arm is useless, the cleaver having severed tendons and nerves. These are common, everyday illustrations of the unlimited field of service offered to a medical man in China to-day.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the surgeon general, Public Health and Marine Hospital Service during the week ending August 27, 1900:

Places.	Date.	Cases.	Deaths.
Smallpox.	United States.		
California—Berkeley.	July 24-25.	1	
California—San Francisco.	June 26-July 3.	1	
District of Columbia—Washington.	Aug. 7-14.	1	
Indiana—East Wayne.	Aug. 7-14.	13	
Indiana—North Bend.	Aug. 7-14.	1	
Iowa—Cedar Rapids.	July 1-31.	1	
Kansas—Wichita.	July 11-Aug. 7.	2	
Missouri—St. Louis.	Aug. 7-14.	2	
Massachusetts—Boston.	Aug. 8-12.	7	
Belgium—Antwerp.	July 17-22.	4	
Canada—Halifax.	July 31-Aug. 7.	1	
China—Amoy.	June 26-July 3.	1	5
China—Kantow.	June 1-3.	1	
China—Kantow Thau.	April 15-June 30.	7	1
China—Shanghai.	July 2-10.	1	
Among natives.			
French Congo.	July 1-8.	1	1
French Congo—Paris.	July 24-31.	1	
Italy—General.	July 25-Aug. 1.	14	

Places.	Date.	Cases.	Deaths.
Italy—Naples.....	July 25-Aug. 1.....	22	2
India—Bombay.....	June 26-July 3.....	4	5
India—Calcutta.....	July 3-9.....	1	1
India—Madras.....	June 26-July 3.....	3	3
Mexico—Guadalajara.....	July 22-29.....	1	1
Mexico—Monterrey.....	Aug. 1-8.....	1	1
Mexico—Veracruz, vicinity.....	Aug. 12.....	6	6
Peru—Lima.....	July 17-24.....	1	1
Russia—Moscow.....	July 10-24.....	71	9
Russia—Chassan.....	July 17-24.....	4	4
Russia—St. Petersburg.....	July 10-17.....	18	3
Spain—Barcelona.....	July 19-Aug. 2.....	4	4
Spain—Tarragona.....	July 19-26.....	1	1
Spain—Valencia.....	July 19-24.....	6	6
Switzerland—Geneva.....	July 24-31.....	1	1
Tripoli—Tripoli.....	July 10-24.....	17	9
Turkey—Constantinople.....	July 25-Aug. 1.....	1	1

Yellow Fever—Foreign.

Brazil—Para.....	July 10-31.....	8	8
Ecuador—Guayaquil.....	July 10-24.....	1	1
Mexico—Colima.....	Aug. 10.....	6	Present
Mexico—Merida.....	Aug. 6-13.....	1	1

Cholera—Insular.

Philippine Islands—Boracay.....	June 26-July 3.....	110	92
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Cholera—Foreign.

China—Amoy.....	June 26-July 3.....	11	11
China—Hongkong.....	July 10-17.....	1	1
China—Kang Thau.....	June 1-30.....	2	1
China—Kang Thau.....	April 10-30.....	4	2
India—Bombay.....	July 6-13.....	17	17
India—Calcutta.....	June 26-July 3.....	50	50
India—Madras.....	July 3-9.....	1	1
India—Rangoon.....	June 26-July 3.....	2	2

Plague—Insular.

Hawaii—Hilo, vicinity.....	Aug. 20-22.....	1	1
Hawaii—Olaa.....	Aug. 20-22.....	2	2

Plague—Foreign.

Atenes—Tetelco.....	June 10.....	3	3
Chile—Antofagasta.....	July 10-17.....	1	In Lazaretto
Chile—Iquique.....	July 11.....	7	7
Chile—Iquique.....	July 11.....	7	7
China—Amoy.....	June 26-July 3.....	95	95
China—Amoy.....	July 10-17.....	73	73
China—Kang Thau.....	June 1-30.....	37	19
China—Kang Thau.....	April 10-30.....	117	59
China—Hongkong.....	July 3-10.....	4	2
Ecuador—Guayaquil.....	July 10-24.....	3	3
India—General.....	July 3-10.....	558	462
India—Bombay.....	July 6-13.....	21	21
India—Calcutta.....	June 26-July 3.....	41	41
India—Rangoon.....	June 26-July 3.....	22	22
Japan—Shikoku.....	July 28.....	5	1
Peru—General.....	July 3-10.....	10	8
Venezuela—Caracas.....	Aug. 6.....	1	1

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 25, 1909:

ALTREE, G. H., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 2, 1909.

BOYD, FRANK, Acting Assistant Surgeon. Granted twenty-two days' leave of absence from August 20, 1909.

CORPUS, G. M., Passed Assistant Surgeon. Granted ten days' leave of absence from August 13, 1909, on account of sickness.

EBERSOLE, R. E., Passed Assistant Surgeon. Upon expiration of present leave of absence, relieved from duty at Manila, P. I., and directed to proceed to San Francisco, Cal.

FOGARTY, J. N., Acting Assistant Surgeon. Granted eighteen days' leave of absence from September 4, 1909, with pay, and twelve days' leave of absence from September 22, 1909, without pay.

FRISSELL, C. M., Acting Assistant Surgeon. Granted twenty days' leave of absence from August 13, 1909; nine days with pay and eleven days without pay.

GEDDINGS, H. D., Surgeon. Detailed to represent the Service at the Sixteenth International Medical Congress to be held at Budapest, Hungary, August 29 to September 4, 1909.

GWYN, M. K., Passed Assistant Surgeon. Granted seven days' leave of absence from August 17, 1909, under paragraph 191, Service Regulations.

KALLOCH, P. C., Surgeon. Granted seven days' leave of absence en route to station.

MACCAFFERY, WARD B., Acting Assistant Surgeon. Transferred from Reedy Island Quarantine Station to Cape Charles Quarantine Station, effective September 1, 1909.

MACDOWELL, W. F., Pharmacist. Granted thirty days' leave of absence from September 10, 1909.

MASON, M. R., Pharmacist. Granted twenty days' leave of absence from August 27, 1909.

MEGAW, H., Pharmacist. Granted twenty-eight days' leave of absence from August 21, 1909.

O'REILLY, W. J., Acting Assistant Surgeon. Granted two days' leave of absence from August 31, 1909.

ROSENAU, M. J., Surgeon. Directed to proceed to Philadelphia, Pa., upon special temporary duty.

STIMSON, A. M., Passed Assistant Surgeon. Granted seven days' leave of absence from August 16, 1909, under paragraph 191, Service Regulations.

THORNTON, M. J., Acting Assistant Surgeon. Granted one day's extension of annual leave, August 15, 1909, on account of sickness.

VOGEL, C. W., Passed Assistant Surgeon. Granted three days' leave of absence from August 23, 1909, under paragraph 189, Service Regulations.

WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from August 22, 1909, on account of sickness.

WOLLENBERG, R. A. C., Assistant Surgeon. Granted two months' leave of absence from September 10, 1909.

Promotion.

Pharmacist Walter H. Keen promoted to pharmacist of the second class, to date from May 24, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 28, 1909:

ALLEN, JOHN H., Captain, Medical Corps. Granted leave of absence for two months.

BAILEY, HOWARD H., Captain, Medical Corps. Granted fifteen days' leave of absence when his services can be spared.

BARNEY, FRED M., First Lieutenant, Medical Reserve Corps. Granted fifteen days' leave of absence, about September 10, 1909.

BROWN, O. G., Captain, Medical Corps. Ordered to proceed from Fort Robinson, Neb., to military tournament camp at Des Moines, Iowa, for duty with Second Squadron, 15th Cavalry, from Fort Leavenworth, Kans.

CUTLIFE, WILLIAM O., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month on surgeon's certificate of disability.

DAVIDSON, WILSON T., Captain, Medical Corps. Relieved from duty in the Philippine Islands, and assigned to duty as surgeon of the transport *Buford*, on the voyage commencing September 15, 1909; and upon arrival at San Francisco, Cal., will report to the Adjutant General of the Army for further orders.

FOX, JAMES S., First Lieutenant, Medical Reserve Corps. Ordered to Fort Andrews, Mass., for temporary duty, and upon its completion, to return to his proper station.

HARRIS, JESSE R., Captain, Medical Corps. Ordered to proceed from Fort George Wright, Washington, to Boise Barracks, Idaho, for temporary duty.

HART, JAMES W., First Lieutenant, Medical Reserve Corps. Relieved from additional duty at Fort Washington, Md., and duty at Fort Hunt, Va., and ordered to proceed to Cayce, P. R., for duty.

HUGHES, LEONARD S., First Lieutenant, Medical Reserve Corps. Left Department Rifle Range, Cal., on August 15th, en route to Fort Lawton, Washington, for duty.

HUTTON, PAUL C., Captain, Medical Corps. Granted leave of absence for one month.

JACKSON, THOMAS W., First Lieutenant, Medical Reserve Corps. Upon being relieved from temporary duty at Washington Barracks, D. C., by Major G. R. Reynolds, will proceed to Fort Washington, Md., for temporary duty, and upon return of Captain Samuel J. Morris will proceed to Fort Hunt, Va., for duty.

MCLELLAN, GEORGE H., First Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Creek, Nebr., to Fort Des Moines, Iowa, for duty not later than September 15th, for temporary field duty with troops of the Second Cavalry, to Des Moines, Iowa.

RHODES, THOMAS L., Major, Medical Corps. Left Walter Reed Army General Hospital on August 30th, on ten days' leave.

SANFORD, JOSEPH L., First Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence, to take effect on or about September 2, 1909.

SNYDER, HENRY D., Major, Medical Corps. Ordered upon expiration of present leave of absence to proceed to New York City on business connected with the Medical Supply Depot, and upon completion of same to proceed to St. Louis, Mo., and assume charge of the Medical Supply Depot in that city, relieving First Lieutenant Ferdinand Schmitter, Medical Corps, who will return to Jefferson Barracks, Mo.

STALLMAN, GEORGE P., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month, with permission to apply for fifteen days' extension.

SWEAZEY, VERGE E., Captain, Medical Corps. Granted two months' leave of absence on surgeon's certificate of disability.

TUKEY, WILLIAM H., First Lieutenant, Medical Reserve Corps. Granted twenty-one days' leave of absence about August 20, 1909.

WELLS, F. M., First Lieutenant, Medical Reserve Corps. Left Fort Robinson, Nebr., on August 18th, en route to Fort Leavenworth, Kans., for duty with troops to Des Moines, Iowa.

The following named medical officers have been ordered to Des Moines, Iowa, to arrive not later than September 17th, to participate in a military tournament at that city, September 20th to 25th, and upon termination thereof, to return to their proper stations:

BASTION, JOSEPH E., First Lieutenant, Medical Reserve Corps.

BROWN, ORVILLE G., Captain, Medical Corps.

BURKET, JOHN A., First Lieutenant, Medical Reserve Corps.

CLARKE, JOSEPH T., Major, Medical Corps.

MILLER, ALBERT L., First Lieutenant, Medical Reserve Corps.

MCCLELLAN, GEORGE H., First Lieutenant, Medical Reserve Corps.

VAN DUSEN, JAMES W., Captain, Medical Corps.

WELLS, FRANCIS M., First Lieutenant, Medical Reserve Corps.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 28, 1909:

BLOEDOM, W. A., Acting Assistant Surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

BRISTER, J. M., Passed Assistant Surgeon. Detached from the *Independence* and ordered home to await orders.

BROOKS, F. H., Assistant Surgeon. Ordered to the Naval Recruiting Station, Omaha, Neb.

FAUNTLEROY, A. M., Passed Assistant Surgeon. Detached from the *Harford* on August 29th, and granted leave for one month.

GRIEVE, C. C., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Sitka, Alaska, and ordered to the *Independence*.

JOHNSON, J. T., Acting Assistant Surgeon. Ordered to duty at the Naval Hospital, Naval Home, Philadelphia, Pa.

KUDER, W. S., Assistant Surgeon. Detached from the Navy Yard, Philadelphia, Pa., September 3rd, and ordered to Washington, D. C., for examination for promotion and then to await orders.

MURPHY, J. A., Surgeon. Detached from the *Olympia* on August 27th, and ordered to the Marine Recruiting Station, New York, N. Y.

OUSLER, J. T., Pharmacist. Detached from the Naval Academy and ordered to the Army and Navy General Hospital, Hot Springs, Ark.

PECK, A. E., Surgeon. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to the Marine Recruiting Station, San Francisco, Cal.

REED, T. W., Detached from the Marine Recruiting Station, San Francisco, Cal., and ordered to examination for promotion, and then to await orders.

REEVES, I. S. K., Passed Assistant Surgeon. Discharged from treatment at the Naval Medical School Hospital, Washington, D. C., and granted sick leave for one month.

REEVES, I. S. K., Passed Assistant Surgeon. Unexpired sick leave revoked; ordered to the Navy Yard, Philadelphia, Pa., September 3rd.

RENNIE, W. H., Passed Assistant Surgeon. Detached from the *Rhode Island* and ordered to the Naval Recruiting Station, St. Louis, Mo.

SINCLAIR, J. A. B., Assistant Surgeon. Ordered to command the Naval Hospital, Sitka, Alaska.

STEADMAN, W. G., Assistant Surgeon. Discharged from treatment from the Naval Hospital, Norfolk, Va., and granted sick leave for six weeks.

STERNE, C. F., Assistant Surgeon. Detached from the Naval Recruiting Station, St. Louis, Mo., and ordered to duty at the Naval Hospital, Puget Sound, Washington.

SUTTON, D. G., Assistant Surgeon. Detached from the Naval Academy and from the *Tonopah*; ordered to duty in connection with the *Vestal*, and to duty on board that vessel when commissioned.

THOMAS, G. C., Assistant Surgeon. Detached from the Naval Recruiting Station, Omaha, Neb., and ordered to the *Rhode Island*.

Births, Marriages, and Deaths.

Married.

GLOVER-RAYMOND.—At Fort Logan, Colorado, on Wednesday, August 18th, Lieutenant G. Barrett Glover, Jr., and Miss Rosalie De Shong Raymond, daughter of Major Thomas U. Raymond, of the Medical Corps of the United States Army.

MERRIAM—JOHNSON.—In Chicago, on Saturday, August 14th, Dr. Walter Henry Merriam, of Cleveland, Ohio, and Miss Cliffe Updegraff Johnson.

PETERS—CAIN.—In Philadelphia, on Friday, August 20th, Dr. William Peters, of Carlisle, Pennsylvania, and Miss Mary L. Cain.

Died.

ABELL.—In Norwich, New York, on Tuesday, August 24th, Dr. Paul R. Abell, aged thirty-two years.

ALLENDORF.—In Charlestown, Massachusetts, on Tuesday, August 24th, Dr. John A. Allendorf.

BORGJUM.—In Omaha, Nebraska, on Sunday, August 29th, Dr. J. M. Borglum.

BURDICK.—In Dexter, Maine, on Monday, August 23d, Dr. V. M. Burdick, aged fifty-eight years.

BUSHNELL.—In North Adams, Massachusetts, on Monday, August 23d, Dr. Homer Bushnell, aged sixty-three years.

CHAFFIN.—In Baileysville, West Virginia, on Friday, August 20th, Dr. Joshua A. Chaffin, aged fifty-five years.

CHAPIN.—In New Orleans, Louisiana, on Tuesday, August 24th, Dr. J. Irving Chapin, of Philadelphia, aged thirty-three years.

CLEMENT.—In Haverhill, Mass., on Friday, August 27th, Dr. G. Colburn Clement, aged fifty-four years.

FITCH.—In Portland, Maine, on Tuesday, August 24th, Dr. Thomas S. P. Fitch, of East Orange, New Jersey, aged sixty-four years.

GETZ.—In Marshalltown, Iowa, on Sunday, August 22d, Dr. H. L. Getz.

GROSS.—In Quincy, Massachusetts, on Wednesday, August 25th, Dr. H. W. Gross, aged thirty-seven years.

KNIGHT.—In Worcester, Massachusetts, on Sunday, August 22d, Dr. H. S. Knight, aged fifty years.

MACGUIRE.—In Rutland, Vermont, on Tuesday, August 24th, Dr. James R. MacGuire, aged fifty-six years.

MCCOLLOUGH.—In Los Angeles, California, on Thursday, August 19th, Dr. M. F. McCollough, aged fifty-six years.

PERRINSON.—In Indiana, Pennsylvania, on Thursday, August 19th, Dr. Augustus F. Perrington, aged seventy-three years.

SMITH.—In San Francisco, on Saturday, August 14th, Dr. Walter A. Smith, aged thirty years.

SWALM.—In Shelter Island, New York, on Thursday, August 26th, Dr. W. F. Swalm, of Brooklyn, aged seventy-two years.

WELLS.—In Sacramento, California, on Sunday, August 15th, Dr. William H. Wells, aged ninety-one years.

WESSLEHOFF.—In New Harbor, Maine, on Tuesday, August 24th, Dr. William Palmer Wesselhoft, of Boston, Massachusetts, aged seventy-four years.

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WHOLE No. 1606.

Original Communications.

INFLAMMATION OF THE KNEE JOINT, WITH SPECIAL REFERENCE TO SYMPTOMATOLOGY AND DIAGNOSIS.*

By CHARLES OGILVY, M. D.,
New York,

Adjunct Professor of Orthopaedic Surgery, Postgraduate School;
Attending Surgeon, New York City Children's Hospitals and
Schools; Assistant Attending Orthopaedic Surgeon,
Postgraduate Hospital, etc.

The knee joint is most prone to *trauma* and to *infection*.

Trauma: The most frequent sequence of trauma is *synovitis*. A simple synovitis may present no other symptoms than those of the effusion, namely, the swelling and the floating patella. Pain is a variable symptom and may be very little complained of. There is no marked spasm of muscle, there is no pain on joint pressure, there is little or no atrophy, there is no deformity, and motion is comparatively free. The patient is able to walk about, although with some discomfort, yet without acute pain. If the joint is freely used, the effusion increases, and the painful symptoms are accentuated.

The treatment of these cases is most satisfactory. An adhesive plaster basket strapping with a large, dry cotton compress, applied over the patella and another in the popliteal space, over which a snug bandage is applied, will often suffice. This limits the motion of the joint, and at the same time exerts a steady, evenly distributed, compression. A large, dry sponge over the patella gives a greater and more efficient compression than does the cotton. Marked improvement follows within two weeks, and in three to four weeks all signs of effusion should disappear. This, however, is not always the case, especially when the patient comes to us with a history of having had the effusion for weeks or months previously. These chronic cases are much more resistant to treatment. The joint should be locked up tightly for from six to twelve weeks, and this is best accomplished by a snugly fitting plaster of Paris cast extending from the groin to the ankle. After this is removed, keep an adhesive plaster dressing applied for several weeks. It is not the weight bearing that aggravates this condition, but the motion of the joint, so that walking does not do any injury if the joint is firmly fixed.

Tuberculosis of the Knee Joint. This we speak of here, after referring to traumatic synovitis be-

cause the history is most frequently that of trauma followed by an excessive effusion into the joint, simulating in this way simple synovitis. The diagnostic symptoms of a tuberculous joint lesion, however, are distinctly characteristic, and the diagnosis should be made early. The knee becomes swollen and painful, and motion is limited by spasm of the muscles above the joint. When forced beyond this limit of motion there is great pain. Less pain is felt when the knee is flexed, and the patient may hold the knee constantly in a flexed position. There is pain on joint pressure. This pain and these other symptoms mentioned are always increased when the patient bears his weight upon the joint in walking. Atrophy of muscle develops early and is distinctly noticeable within two months from the onset of the joint disease. These four symptoms of pain, swelling, spasm of muscle, and atrophy with the fifth flexion deformity are most significant, especially in children. The very insidious onset and mildness of these symptoms in the beginning of the disease are rather apt to be too lightly considered, and a diagnosis of some less serious affection made. If we see a child presenting these several symptoms and we learn that the origin of the trouble dates back two months or longer, that the symptoms have been very gradually increasing in severity, and the accompanying limp which was at first only noticed at times, is now not only constant but more marked, then the diagnosis of a tuberculous knee joint should be seriously considered and a confirmatory diagnosis be arrived at. The family history in reference to tuberculosis is negative in fully fifty per cent. of the cases, and too often on this account, are we reticent in making the diagnosis. The different diagnostic tuberculin reactions should be considered in every instance as a confirmatory aid, but should not take precedence over the clinical symptoms upon which should be based our diagnosis. The one other condition which somewhat resembles a tuberculosis infection is a syphilitic joint, which is much less common and which is always accompanied by the other stigmata of syphilis elsewhere. The treatment other than operative of a tuberculous knee joint, is rest and extension. This can be best attained by the use of the Thomas knee brace, with a cork elevation of from two to three inches on the opposite shoe, and in most cases the use of crutches. This treatment must be continued for two years or longer.

Trauma and synovitis are also associated with a *slipping semilunar cartilage*. The initial trauma is a wrench of the joint in cor-

*Read before the New Rochelle Medical Society, March 8, 1909.

a twisting of the leg when bearing the body weight, whereby the semilunar cartilage is loosened and then dislodged. There is a sudden severe pain and a locking of the joint, followed by swelling due to an excessive effusion. The dislocated cartilage can usually be reduced by manipulation but is easily displaced again. This can in most cases be prevented by limiting the amount of flexion of the joint, and controlling the rotation by means of a brace which extends from the groin to the foot, being attached to the shoe, and having a joint at the knee of which the motion can be controlled or prevented. This brace should be worn for at least three months after the dislocation of the cartilage has occurred. If this does not cure the condition, the cartilage should be removed. The results after removal of the cartilage are very satisfactory, with restoration of perfect function.

Villous Arthritis. The dry, crunching knee joint of adolescence is quite common. This is a villous arthritis and sometimes originates by trauma. The condition is very frequently due to flat or weak feet. The condition is due to a loss of tone in the joint structures, and the synovial membrane is thrown into folds. If the cause is not removed, these villi or synovial tabs continue to develop and increase in numbers. There may be at times of increased irritation in the joint an excessive synovial effusion. This effusion subsides only to recur at intervals. The condition is entirely a local one and is not accompanied by any acute inflammatory symptoms. A feeling of discomfort rather than acute pain is complained of, and frequently the creaking of the joint is the symptom to which special reference is made. The treatment should be directed to the cause and to the supporting of the joint. Oftentimes the correction of weak ankles, or everted feet, will relieve all the painful symptoms. The creaking in the chronic cases may persist for years. It should be noted in passing that synovial villi may result from any chronic irritation within the joint. We see villi in tuberculous and gonorrhoeal joints, for example, and also in the atrophic and hypertrophic form of deforming arthritis. The villous arthritis of the knee just described, however, is quite distinctive from these several diseases.

Infections. Infections of the knee joint are very common. Infections from without we shall simply refer to. The source of the infection can readily be traced and the diagnosis be made. Treatment should be begun immediately, and whenever an acute infection is suspected, immediate rest and perfect immobilization cannot be too strongly emphasized. This treatment if instituted early, in conjunction with wet compresses, may abort the process, if the infection is not of too virulent a nature. Seldom, however, do we see these cases until the infection has swept through the joint, and the tissues are bathed in pus. Operation is then imperative.

Of the infections from within that of gonorrhoea is the most common. Pneumococcal infection of the knee joint is much less frequently seen.

The diagnosis of a gonorrhoeal knee joint is made difficult by reason of the negative history which is almost invariably given of any such original infection. We may have a gonorrhoeal joint from one

to two years after all symptoms of the original infection have subsided. There may be a polyarticular involvement, one joint after the other in quick succession becoming infected. Whether monoarticular or polyarticular, the knee joint is particularly prone to a severe reaction, which is liable to result in a partial or even complete ankylosis. The synovial membrane is the primary seat of involvement. The joint symptoms appear suddenly, pain, swelling, heat, and extreme tenderness developing. Suppuration and destruction of the joint structures follow, if the process continues unchecked. Perfect fixation of the joint gives immediate relief. Injections of antgonococcal serum is also followed by an alleviation of pain. The curing of the gonorrhoea is primarily essential, and treatment should be directed toward this end. The diagnosis in doubtful cases can often be confirmed by finding the gonococci in the aspirated fluid. If the process has gone on to suppuration and destruction of the joint structures, the joint should be freely open by two bilateral incisions, one on either side of the patella, and a thorough irrigation of bichloride, 1 in 4,000, given, at the same time, removing the broken down tissues. The incisions should be sewed up with two layers of sutures, one for the capsule and the other for the skin and subcutaneous tissues, leaving in a small rubber drainage tube at the lower end of either incision. A plaster of Paris dressing should be applied with fenestræ cut out through which the wounds may be subsequently dressed.

Rheumatism. Acute articular rheumatism does not occur in children under two years of age. The diagnosis of knee joint inflammation at this age usually rests between some acute infection and scurvy. The articular involvement of acute rheumatism is often entirely absent in children. When present, either in children or in adults, it involves several joints in succession, runs a course of two to four weeks, and does not pass on to so called chronic rheumatism. "Chronic rheumatism" is a misnomer, for true rheumatism always runs an acute course. The chronic articular inflammations designated as chronic rheumatism, are not rheumatism. Not only are they not improved by anti-rheumatic medication, but such treatment is decidedly harmful.

Hysterical Knee Joint. These are perhaps the most difficult of all affections to diagnose, and this diagnosis should not be made until all other possible conditions have been carefully considered. They may simulate any condition or disease, giving all the classical symptoms of a definite joint lesion. The symptoms complained of will vary according to the patient's knowledge or ideas regarding the trouble. Several examinations are frequently necessary. Contradictory statements regarding the character and seat of pain are given. Spasm of muscle which is always present in all articular inflammations, is seen to be present only when the patient's attention is directed to the joint. A neurasthenic temperament would be very suggestive, but of more importance than the patient's temperament is that of the parents, or home associates, who are always, in great part, responsible for the condition of the patient. When this is the case, the home environments should be changed, and when this change is

made, brilliant results follow. A patient suffering from a neurasthenic joint should not be discharged from one's care, having been advised that nothing should be done, because no definite joint lesion has been found, for unfortunately such advice only aggravates the condition.

125 WEST FIFTY-EIGHTH STREET.

LARYNGEAL TUBERCULOSIS.*

By ROBERT LEVY, M. D.,
Denver, Colo.,

Professor of Laryngology, Denver and Gross College of Medicine.

Although laryngeal tuberculosis is an affection the treatment of which has been largely relegated to the sphere of the specialist in laryngology, nevertheless it must always be of vital interest to the general practitioner because it forms one of the most common complications of general or pulmonary tuberculosis. The medical man of this section of the country possesses a comprehensive understanding of the clinical history and treatment of tuberculosis. The avidity with which he studies every new advance in this disease has placed him in such a position concerning the prognosis of this affection that it is hardly necessary to remind him of the accepted views concerning the curability of laryngeal tuberculosis. It is a remarkable fact, however, that there still remain many who can not accept a ray of hope and who at once are thrown into the depths of despair the moment a laryngeal lesion complicates a pulmonary infection.

It would be manifestly impossible, and, because of my appreciation of the foregoing statement concerning our Colorado colleagues, unnecessary, to give an extensive discourse upon this subject. It is my desire to present a paper which shall reflect in a measure a fairly large experience to the end that some practical result may be attained and the present status of such vital questions as diagnosis and treatment be made clear. For these purposes it is not necessary to take up a full discussion of aetiology, symptomatology, diagnosis, treatment, etc. Only certain phases of these questions will be considered.

Concerning Points in Aetiology. Much thought and time have been spent upon the question of primary tuberculosis of the larynx. The scientific value of a decision and satisfactory discussion of this question must be conceded by all. So long, however, as it is almost impossible to prove, except by post mortem examination, the existence of a lesion in the larynx without the coexistence of one elsewhere this question will remain an unsettled one. It is of much less practical importance than would appear on the surface, for given a case in which a manifest laryngeal lesion exists with a possible focus of infection elsewhere of so slight a degree as to make it difficult or impossible of detection by our present methods of examination, this focus may be considered a curable lesion in the light of our present knowledge.

One often sees a simple acute catarrhal laryngitis develop in patients suffering from pulmonary tuber-

culosis, and one frequently sees chronic catarrhal laryngitis in tuberculous individuals. Both of these conditions persist, the acute one remaining for an indefinite period far beyond the time when resolution of a simple, catarrhal inflammatory process would have occurred in an otherwise normal individual. The aetiology of tuberculosis of the larynx bears a direct relation to the vulnerability of the laryngeal tissues in these two conditions, and it is here urged that catarrhal laryngitis whether of acute or chronic character must be looked upon as an aetiological factor. The practical value of this suggestion is in the necessity of paying proper attention to the hygiene of the upper air passages and especially to the prophylaxis and treatment of acute and chronic laryngitis.

Concerning Symptomatology. It is hardly necessary to detail the well known clinical history of this affection. I wish to speak especially of pain. Pain being purely a subjective manifestation, its character necessarily differs according to personal equation. It is by no means a constant manifestation of laryngeal tuberculosis being present only as a rule when ulcerations exist. In many cases definite tuberculous lesions may exist without ulceration, and therefore there will be no pain. On the other hand, sensations described as discomfort by some and actual pain by others may be manifested without ulceration and without tuberculous lesions of any description. The common condition of dryness due to defective secretion as seen in the dry skin and the dry hair of tuberculous individuals has its analogue in a dryness of the mucous membrane of the pharynx which induces painful sensations more or less constant but particularly marked at night and of which the patients complain. During the act of swallowing this sensation may be materially exaggerated, but an important distinctive point is found in the fact that the pain is most marked during an attempt at swallowing saliva at other than the time of taking food, and also during the first part of the meal, which, however, instead of being increased by the taking of food is thereby relieved. As the meal progresses the pain becomes less, completely disappearing in a few moments. One would hardly be under the necessity of calling attention to this were it not for the fact that in otherwise tuberculous individuals, pain in the throat is at once suggestive of a laryngeal complication. Invasion of the larynx may occur during the progress of pulmonary tuberculosis when, so far as all evidence is concerned, the patient is progressing favorably, an apparent arrest of the disease having been obtained. In these cases the re-appearance of increased temperature and pulse together with throat symptoms is not necessarily due to the laryngeal manifestations, but its explanation should be sought for in other directions, notably pulmonary reinfection or gastrointestinal disturbance. When, however, the laryngeal lesion is definitely an acute tuberculous process the increase in constitutional symptoms may be attributed thereto.

Diagnosis. We read constantly of the great importance of the early diagnosis of tuberculosis. The entire question of prognosis and treatment depends upon this underlying and fundamental problem, and it is of no less importance in the laryngeal manifestation of this disease than it is in the pulmonary

*Read at the Boulder County Medical Society, July 1, 1909.

invasion. A well marked case offers few if any difficulties. An early development is determined often with far less ease. The laryngoscopic examination will reveal objective signs reasonably conclusive. Among these should be mentioned: 1, Localized asymmetrical swellings, usually pale in color, noninflammatory in appearance; 2, irregularly shaped localized masses of infiltration, papillomatous, or slightly nodular in appearance; 3, localized oedema, pale in color and covered with glairey secretion; 4, submucous, yellowish, or greyish pinhead deposits; 5, ulcerations, irregular and superficial in outline unattended by surrounding inflammatory redness. These ulcerations may be either sluggish or active in character. When the former they are covered by tenacious, dirty secretion, and are fairly limited in extent. They present either undermined or bevelled edges. Acute ulcerations are extremely superficial, spread laterally into the surrounding structures, are covered with a thin glairey discharge and surrounded by oedema.

Chronic catarrhal laryngitis with erosions is sometimes with difficulty distinguished. The essential distinctive points are found in the uniform symmetrical thickening of chronic laryngitis and the usually symmetrical appearance of the erosion which is the result of attrition and not of necrosis as is the case in tuberculous destruction. Acute or chronic laryngitis sicca is frequently mistaken for tuberculosis of the larynx. It is commonly seen in tuberculous individuals. The subjective symptoms are misleading in that we have pain from dryness, hoarseness of greater or less severity, and often intermittent and recurring attacks of dyspnoea. With the laryngoscope one readily distinguishes the presence of uniform redness, excoriated mucous surface, and the typical deposits of dry dark scales.

The distinction between syphilis of the larynx and tuberculosis has always been a subject of interest. It may be attended with considerable difficulty. Except in typical cases this question now assumes additional importance from the reports of cures following the mercurial treatment. It is unnecessary to remind you that syphilis and tuberculosis may be combined in one individual, and that the local lesions as seen in the upper air passages may be typical of neither condition. Nevertheless it is important to determine which is the more important aetiological factor. It is reasonable to expect an atypical local manifestation, and one can only be guided by his experience which points out to him whether the tuberculous or the syphilitic objective signs predominate. Moreover, the effect of mercurial treatment when resulting in rapid healing must be additional evidence in favor of syphilis. I am not here to deny that the mercurial treatment of tuberculosis may be attended with remarkable results. We do know that the diagnosis is often attended with great difficulty, and therefore when the statement is made that cases of tuberculosis with laryngeal complications respond most favorably, one may be excused for questioning the diagnosis. The differential diagnosis in the infiltrative form may be made by finding diffused and mottled redness in syphilis as distinguished from the slight redness or pronounced pallor in tuberculosis. In the ulcerative variety the typical tuberculous ulcer is a

flat, laterally spreading, superficial, slightly grayish, painful ulceration, not surrounded by inflammatory redness but frequently by pale oedema, while the typical syphilitic ulcer is deep, spreading deeply, crater like, dirty gray with marked inflammatory redness surrounding it. As stated before, one must determine which predominates, the tuberculous or syphilitic characteristics.

The various tuberculin tests for the early diagnosis of tuberculosis, namely, the ophthalmic, the cutaneous, viz., the von Pirquet and Moro, are not very applicable to lesions that are secondary, which is the case in the majority of instances of tuberculosis of the larynx. The reason for this is obvious, the tests being in no way a method of distinguishing between two coexisting foci of infection. A method which has given me much satisfaction at times has been that by which bacteriological examinations of a smear taken directly from the local lesion is made. Given a case in which physical signs in the chest are negative and in which there is no cough or expectoration but in which hoarseness exists, due to a suspicious swelling or ulceration in the larynx, I have often been able after careful cleansing of the laryngeal mucous membrane and rubbing the suspected lesion with a sterile cotton swab to demonstrate tubercle bacilli.

Prognosis. There is nothing in the entire field of medicine that illustrates more clearly the tremendous progress our science has made than in the changed view with regard to the prognosis of laryngeal tuberculosis. The literature is full of statements showing this change of heart, and still there are many who refuse to believe in the curability or permanent arrest of laryngeal tuberculous lesions. No disease that affects the upper air passages manifests itself in so great a variety of pathological changes, and therefore it is difficult to offer a prognostic statement applicable to tuberculosis of the larynx in general. As my friend Bonney¹ has so well stated, "each individual instance of this complication, in accordance with the widely different conditions in force, must be judged solely upon its own intrinsic merits." The prognosis of the infiltrative type is good so far as life is concerned. When, however, it involves structures which interfere with vocal production the voice may never be restored. In a certain proportion of cases return of the vocal function is accomplished, but the progress is slow and covers a considerable period of time. The prognosis of the ulcerative variety is subject to as many variations as are the lesions themselves, both concerning their situation and their character. As a general statement it may be assumed that ulcerations of the sluggish type and those situated upon the interior or more protected portions of the larynx recover more frequently than those of the acute or active type and situated upon the exposed surfaces, such as the epiglottis, the ary-epiglottic folds, and the arytenoids.

Treatment. Many questions arise in a discussion upon the treatment of laryngeal tuberculosis. Whether local treatment should or should not be advised, when the treatment should begin, whether an attempt at cure or merely palliation be made must

¹Bonney, *Pulmonary Tuberculosis and its Complications*, 1908, p. 532.

all be taken into consideration. Here as in the question of prognosis one should bear in mind the statement of Sir Felix Semon that "in no disease perhaps is there greater need for individualization and for treating every case on its own merits than in laryngeal tuberculosis." To advise routine treatment for all cases is manifestly impossible whether the treatment be local or general, palliative or curative. To advise no treatment in all cases simply because the prognosis may be considered unfavorable is contrary to our art. Semon says: "To tell such an unfortunate person, as was formerly done twenty years ago and as is done, I am afraid, but too frequently now, 'take care of your general health and let your larynx take care of itself,' is to my mind not much better than a cruel mockery."

All forms of treatment have their limitations. It is necessary in the first place to determine the character of the lesion present, then to decide whether palliative or curative measures shall be adopted or both.

Treatment may be divided into palliative or curative, into medicinal and surgical, into general and climatic. A combination of all of these methods depending upon indications gives the best results. The fact that a certain number of spontaneous cures have been reported is no argument against local treatment, for these cures are so few compared with those obtained under treatment that they form a very small proportion. There are times, however, when topical applications to the larynx of more than a simple character such as can be readily conducted by the nurse at the bedside, should not be advised. Where the strength of a patient and his general condition is such that the effort of a visit to the doctor's office is a tax upon his strength, or where the advanced stage of the pulmonary lesion precludes a reasonable possibility of local improvement it would seem to be contrary to good judgment to institute heroic or elaborate local treatment. It is my practice in such cases to advise simple palliative measures with strict attention to the rules laid down for the treatment of general tuberculosis, in the hope that improvement in the patient's reparative powers may take place. When this position is attained active local measures should begin. The general treatment of laryngeal tuberculosis differs in no particular from that of the pulmonary disease. Of prime consideration is rest, and in view of the fact that the vocal apparatus is the organ involved rest to the voice should be insisted upon. The patient should not be permitted to use his voice except in the mildest whisper and even this should be restricted in amount. Whether the lesion is slight or considerable and of whatever character, rest to the larynx should be urged.

Climatic influence and hygienic surroundings are of as much importance here as in other forms of the disease. In spite of the drying and sometimes irritating effect of our climate it can be shown, as was done in a former paper,² that the disease under consideration is amenable to treatment to a greater degree where fresh air and sunshine abound. The dryness is in a measure a source of irritation, but other advantages more than counterbalance any pos-

sible deleterious influence from this source. It therefore follows that the question so often asked as to the advisability of patients with laryngeal tuberculosis sleeping out of doors as recommended for the pulmonary lesion can only be answered in the affirmative. As to whether the treatment should be purely palliative or curative the only reasonable conclusion is that it should be both, except where high temperature and other evidences of rapidly progressing and clearly fatal cases exist. Palliative and curative measures may readily be combined, the latter being active in proportion to the sluggish character of the lesion and the manifest reparative power of the patient. As to whether the treatment should be purely medicinal or surgical this again depends upon the individual case. Surgical measures may be adopted wherever local and general symptoms are not of the acute type.

It is quite impossible to outline or to name all of the remedies and methods of surgical procedure that have been advocated. To my mind the remedy used is of less importance than the method adopted. Judiciously chosen procedures applied by a skilful hand, tempered with judgment, will often give gratifying results in otherwise hopeless cases.

The palliative remedies are those known to all of us, namely, cocaine and similar preparations, orthoform (metaamidoparaoxybenzoate of methyl) anæsthesin (paramidobenzoic acid ethyl ester), morphine, in various combinations and strengths. Palliation may be also obtained by cauterizing with galvano-cautery or thoroughly rubbing with lactic acid alone or in combination with formaldehyde solution, formaldehyde solution alone, and a variety of similar products. The latter method has the advantage of being in a measure also curative.

The indiscriminate use of formaldehyde preparations for all cases and all lesions must be condemned. Much harm has been done by sprays of formaldehyde solution in the hands of patients. Its use should be limited to well defined ulcerative or circumscribed infiltrative lesions. An excellent remedy is found in solutions of methylene blue. This remedy is harmless in the hands of the patient in one per cent. solution and produces marked relief. It also induces repair when applied in three or five per cent. solution directly to the ulceration.

The best remedies for the absorption of the infiltrations attended with loss of voice but no pain are iodine bearing products. Solutions of tincture of iodine, ichthyol, and especially the remedy known as iodine petrox may be recommended.

In closing I should like to call attention to the treatment of laryngeal tuberculosis by tuberculin injections. Local lesions have been carefully watched following the use of this remedy, and local reactions have been recognized.³ Repair has in a few instances taken place, but in a careful comparison with the number of patients who have improved without this treatment it is impossible to say at the present time that the tuberculin treatment is in any sense a specific or that it is followed by more successful issues.

Conclusion. In conclusion I should like to impress the following points:

²The Effect of Climate on Laryngeal Tuberculosis, with Special Reference to High Altitudes. *The Laryngoscope*, October, 1902.

³Vaccine Therapy in Otolaryngology and Rhinolaryngology. *Annals of Otolaryngology, and Laryngology*, March, 1909.

1. Pathological conditions of the laryngeal mucosa, especially chronic catarrhal laryngitis, are important factors in the ætiology of tuberculosis of the larynx.

2. Pain is not always present in laryngeal tuberculosis. When present it is not always conclusive that the lesion is tuberculous. It may exist without ulceration.

3. The beneficial effect of mercurial treatment in laryngeal lesions of tuberculous patients should not be accepted as positive proof of the value of this treatment in tuberculosis. It must be recognized that the differential diagnosis between syphilis and tuberculosis of the larynx is at times extremely difficult especially when the former exists in tuberculous patients.

4. Bacteriological confirmation of the diagnosis is often obtainable by examination of smears made directly from the laryngeal lesion.

5. It is necessary to again impress upon the general profession the curability of laryngeal tuberculosis. It is especially important that the prognosis be determined by a careful study of the lesion in all its characteristics.

6. Local treatment to be effective must be well selected both as to time of applications and method of procedure.

CALIFORNIA BUILDING.

TREATMENT OF PRURITUS ANI,

With a Consideration of Its Pathology and Ætiology.

By WILLIAM M. BEACH, A. M., M. D.,
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Perhaps no malady in the list of proctal diseases is approached with more diffidence by the proctologist than pruritus ani, since expectations of absolute cure are not infrequently followed by abject disappointment and disgust. More factors are to be considered to remove what is but an expression of a cause that is positive or conjunctural, local or constitutional in its setting. Moreover, no other curable condition is so incompatible with the victim's welfare either of body or mind, nor where the pathogenesis is commensurate with his apparent discomfort.

That so many opinions obtain among students in rectal diseases concerning the management of pruritus ani is significant. The wonder is all the more patent that up to the present time no definite guide to cause and effect has been established. We are, therefore, persuaded that the proctologist has a problem in this matter yet to solve, notwithstanding the many advances in his field of endeavor. There is not a dearth of erudition in our textbooks and not a little research with progress has been made during the past year or two,—much that is efficient in treatment but weak in definite ætiology. The fact, for instance, is well established that pruritus ani is a relative and symptomatic term consequent upon pathological issues, and that no such thing exists essentially. In our effort to establish a *raison d'être* we take refuge in certain constitutional diatheses or idiopathogeneses which but express ignorance. Again, many times we feel certain of success only to

be doomed to failure by correcting certain pathological findings in the proctodæum, and yet I am persuaded from personal observation that for the most part all cases of pruritus ani have their origin in the anorectal region, though we should not overlook the fact that certain constitutional dyscrasias as diabetes, lithemia, gastrointestinal disturbances, etc., may contribute to exacerbations, but the itching thus produced is as likely to be general as localized. Furthermore, it is a question in such physical states whether the anal itching bears the ætiological relation of *post hoc* or *propter hoc*.

We are now ready to consider, first, the nature of pruritus ani.

There are two general types or appearances of the itching surface, namely, the parched skin and the moist skin.

All patients suffering from this malady are nervous, but the dry, scaly skin is usually the concomitant of the neurotic, that is the latter highly predominates, though local causes exist, while the moist skin is found more frequently in the plethoric and phlegmatic natures. Proctitis is present in all cases which are not unlikely atrophic in the neurotic and hypertrophic in the lymphatic temperaments.

The weeping skin in the nervous subject is exceptional and, as we shall see later on, is due to discharges from complete sinistral tracts.

The itching, more or less constant, is worse at night and appears to have exacerbations when the suffering is intolerable, the victim through loss of sleep becomes exhausted and not infrequently is overtaken with periods of profound melancholia, if not with suicidal mania.

The anal zone presents an area of eczema varying in extent from a radius of an inch to spreading in some instances well over the buttocks, the eczema being the result of scratching in efforts to relieve himself, or of serous discharges from the anal canal.

Again there are cases when no eczema is present while this type of pain is in evidence. There occur also in most cases marked corrugations of the anal skin, laterally for the most part, due to the irritated corrugator cutis ani muscle, the hypertrophied skin or wrinkles being limited to one side or one quadrant of the anal circuit indicating the point of a possible lesion within the canal. These folds sometimes develop into marked redundancies of the skin which become a source of annoyance as well as being unhygienic.

Finally, the character of the itching appears to vary in degree according as the subject is neurotic or phlegmatic, and also differs in intensity from general pruritus and in that it is the product of inflammatory changes in the affected area. Prurigo mitis or prurigo ferox more nearly expresses the exact nature of the malady, according to the degree of itching consequent upon tissue changes.

In view of the foregoing, we are now ready to consider, secondly, the local causes.

During the last year or two, a large number of cases of pruritus ani gave me clinical opportunities not only in applying methods of treatment already in vogue, but to determine, if possible, data that would render the management more certain and satisfactory in its results. I must confess that the stage of confidence is not yet reached whereby I.

can say to patients indiscriminately that prognosis is definite, but can qualify by reasonable assurance, the faith that is in me.

As to sex, my patients, all private, were pretty evenly divided, though the males were in the majority,—there being nineteen females and twenty-six males covering a period of eighteen months. I am convinced that periods of financial depression such as we have passed through are not unlikely etiological in providing clinical material among the well to do classes.

Preceding local lesions, we are apt to have a history of prolonged mental strain and worry which reflect deleteriously upon the gastrointestinal tract and its annexa by virtue of nerve changes modifying blood pressure and supply of the various secreting organs and surfaces. The liver is the first to suffer and through its vascular relations to the colon and rectum, the latter becomes the object of attack in the form of congestion, catarrh, or ulceration.

Aside from admittedly constitutional contingencies, I assert again that the pathogenesis of anal pruritus is found within the anorectal cavity.

As causal factors, we may name the list of anorectal diseases, and yet their existence in most instances is not accompanied by itching. Well defined cases of hæmorrhoids, fistula, fissure, etc., illustrate this notion. We must search further for elements that constitute the *sine qua non*.

We have to reckon with tightly contracted and irritable sphincter muscles, with a more or less constant seeping or moisture externally, indicating the source from a lesion within the cavity. The discharge presupposes an ulcerated surface but most likely a small sinus.

The characteristic that chiefly distinguishes the general surgeon from the proctologist is the willingness and inclination of the latter to consider the small as well as great things in diseased conditions.

In this effort it is our purpose to demonstrate the minute and obscure element causing this symptom. Anoscopy may reveal cryptitis, single or multiple, an anorectal ulcer, an inflamed anal mucous membrane, a polypus, proctitis as congeners with the ever present submucous sinus extending to or below the white line from behind an anal valve where it receives material and discharges its contents. The condition is really one of concealed ulcer, and if the mucosal mask were torn off, it would become the classic fissure in the anus.

It is the consideration of these blind and obscure sinuses that I wish to emphasize as, at least, the most frequent cause of pruritus ani, that their presence alone will induce the itching and that other anal diseases are to be considered as complications only, nor would I except as complications diseases in adjacent structures, as prostatitis, urethritis, metritis, etc., in making a complete survey of a case.

We are now ready to state the rule, that in all cases of pruritus ani, suspect and locate a fistula from an anal pocket, usually incomplete and internal. To locate the fistula, the clinician should be armed with a conical fenestrated speculum, bent probes, and good light.

While all the crypts should be severally inspected, the most likely points that will receive the inverted

probe are anteriorly and those located in the posterior lateral quadrants; the latter points are the usual sites of fissures. Great care and diligence are needed in this exploration, and sometimes several trials must be made to achieve results.

A male patient referred to me last January suffered from an eczema covering both buttocks, and corpulency added to his distress. Following my rule to locate a sinus, I was not rewarded till the third attempt, when my probe entered from above, what proved to be a complete submucous sinus. The external opening was obscured by an overlapping fold and was overlooked in my inspection of the anal circuit. It seemed hardly possible that so small a sinus would create so much disturbance, but its obliteration removed all trace of the eczema and pruritus from which he had suffered for twenty years, having sought relief in vain from ointments and even two or three divulsions.

The sinal excrescences ebb and flow and agitate the itching accordingly. The more seeping the more itching, and when the pockets receive irritating substances, the patient is liable to complain of an aching until its contents drain out.

Anatomical factors to reckon with under these circumstances are the terminal branches of the anal nerve in the white line and anal papillæ. To this is added the thickened skin and irritable sphincter muscle.

TREATMENT.

To confine our energy to treat the symptoms exclusively would be decidedly empiric and irrational. It would be quite as erroneous to treat even fixed causes without considering certain extraneous and general phenomena. In short, we should proceed along the lines of rational medicine as we deal with other disturbances of the pelvic region.

In view of this conception of the nature and cause of pruritus ani, we at once place the treatment upon a surgical basis.

The various ointments and other topical applications are useless beyond the idea of being a placebo or palliative. Such treatment is not based upon sound principle or tenable theory. In my practice, the chief rôle of ointments consists in the lubrication of the examining digit and instruments.

To encourage healthy issues within the anal canal, the proctologist should apply the same principles of asepsis and antiseptics, sedatives and irritants, as obtain in diseases and wounds in other regions. Who would think of applying grease to a surface wound to stimulate granulation? Solutions are far better and more efficacious.

The surgical technique is ushered in by the use of intraanal vibration in order to relax the sphincter and corrugator cutis ani muscles, this is followed by a careful inspection of the perianal surface by carefully separating the wrinkles and noting the extent of excoriation, the color of the skin, whether white or red, parched or moist, and finally if there is evidence of an external sinus. A digital exploration is now made to determine the tightness or relaxation of the sphincter muscle. The proctoscope is used to reveal the mucosal condition as proctitis, ulcerative, etc. A point of oozing pus may be noted by this examination.

The fenestrated conical speculum is next inserted and the tedious and careful inspection is made of the anal pockets.

Having located one or more sinuses, the entire tract is removed by the scissors running beneath the probe. The sphincter is set at rest by incising its fibres, the same as in the operation for fissure. Local anesthesia usually suffices, but a general anæsthetic is frequently necessary and always advantageous.

The dermoplastic procedures advocated by Mathews, Ball, and others possess commendable features but are unjustifiable in the light of the pathology I have attempted to establish in this writing. That of dissecting a cuff of an inch may remove the offending area, but why run the risk of cicatricial stricture and the impairment of physiological functions, when far less mutilation effects a cure by singling out the seat of irritation.

As already intimated, the treatment subsequent to the operation should consist of the antiseptic care of the wounds as in other rectal operations. Indeed, in many cases, little care is required. It is well to trim off any skin folds or redundancies that occur, then apply glycerin saturated gauze externally to reduce inflammation of the skin and restore its resiliency.

At this stage of the management, I heartily recommend the Adler treatment in selected cases or where the skin shows considerable thickening. Treat the proctitis as soon as the anal wound will admit the proctoscope painlessly, using spray of solutions of silver nitrate, three to five grains to the ounce.

In order to promote gastrointestinal equilibrium, administer salines, sodium phosphate, etc. I find valuable service in the use of

B. Podophyllin.	
Leptandrin,	ãã gr. ½;
Sod. bicarb.,	gr. v.

in capsule before each meal.

Since most of these patients are active, busy men, the ambulatory treatment is usually practised, although, where possible, residence in the hospital for a week or so is recommended, especially if there is much traumatism incident to the operation.

The diet should receive some attention and should consist of bland and nonirritating material such as fresh meats, green vegetables, and avoiding carbohydrates as much as possible.

In conclusion, I would suggest:—

1. That pruritus ani occurs in mild and severe forms, mostly in middle life; the mild type with simple pruritus, the severe type with marked eczema and skin changes.

2. Certain aberrations in general metabolism, or in adjacent structures are simply incidental and should be considered as complications.

3. Intrarectal growths, as hæmorrhoids, adenomata, etc., or the presence of parasites are contributory.

4. The distinct pathogenesis of pruritus ani consists of single or multiple burrowing from the anal pockets, emitting a serous or seropurulent substance, which sinus may be complete or blind and is always accompanied by proctitis, and frequently by cryptitis, and small ulcers at the anorectal line.

5. These sinuses when complete are sequelæ to an abscess history, but the origin of the blind recesses is in doubt, and yet it is not unlikely due to an infection by the colon bacillus.

6. The treatment is surgical for the purpose of obliterating the sinuses, correcting a rigid sphincter when necessary, and curing the proctitis and ulceration.

7. Gastrointestinal and general metabolic disturbances must be met by rational measures.

BESSEMER BUILDING.

PHYSIOLOGY AND THE SECOND LAW OF THERMODYNAMICS.

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Thermodynamics is the science which treats of heat as a mode of energy, and of its capacity to be transformed into other modes of energy and to be utilized as work. As such it is to the parent of physical chemistry, in which physical and chemical phenomena are to be regarded as, in the last analysis, identical; and of energetics which treats of all material phenomena (chemical, physical, biological) and perhaps even matter itself, as so many different modes of energy. To all practical intents and purposes thermodynamics, physical chemistry and energetics are synonymous terms.

The main features of thermodynamics are its two laws and the Gibbsian theory of heterogeneous equilibrium, with the important consequences flowing from the latter, viz., the doctrine of the chemical and thermodynamic potentials, the phase rule, and the theory of osmotic, catalytic, interfacial (colloidal), and electrochemical phenomena.

The first and second laws of thermodynamics are the expression of the static and dynamic conditions under which material phenomena exist and take place in the universe as known to man.

The first law of thermodynamics, first stated by Karl Friedrich Mohr (1837),¹ demonstrated by Robert Mayer (1842), and (conclusively) by James Prescott Joule (1842), and developed in *extenso* by Helmholtz (1850), asserts the principle of conservation of energy, viz., that energy in all its aspects, as heat, light, electricity, etc., is capable of transformation from one mode to the other, but is otherwise indestructible and impossible of creation. From this it follows that perpetual motion of the first kind, which depends upon the actual creation of energy, is impossible.

¹If there is any reasonable doubt as to Mohr's priority in the statement of the first law, witness the following sentence from his *Lehrer des Natur des Wärme* (1832): "Besides the fifty-four known chemical elements, there is in the physical world one agent only, and that is called energy (Kraft). It may appear according to circumstances as motion, chemical affinity, cohesion, electricity, light, and magnetism, and from any one of these forms it can be transformed into any of the others." The general idea that energy transformations cannot take place without compensation was implicit in the work of Galileo, Huygens, Lagrange, in Newton's *Principia*, and in Bernoulli's *Principle of Virtual Velocities* (1717). That a definite relation exists between work and heat had already been stated by Count Rumford (*Philosophical Transactions*, 1798, p. 286), by *Éléments de Philosophie Chimique*, 1799, p. 24), and in the following sentence from Carnot's *Essai sur la puissance motrice du feu*, 1824: "On peut donc poser, en des termes généraux, que la puissance motrice est en quantité invariable dans la nature, qu'elle n'est jamais augmentée par un produit ni détruite. À la vérité elle change de forme, c'est à dire qu'elle produit tantôt un genre de mouvement tantôt un autre, mais elle n'est jamais anéantie."

The second law of thermodynamics, first stated by Sadi Carnot (1824), developed and interpreted by Clausius (1849) and Lord Kelvin (1850), and applied to all physicochemical phenomena by Willard Gibbs (1872-8), asserts the principle of dissipation or degradation of energy, viz., that energy in its varied and manifold aspects is, to all human perception, forever tending from the available to the dissipated state; and from this tendency of energy to distribute itself equally throughout the material universe, it follows that perpetual motion of the second kind, which depends upon the conversion of diffused, evenly distributed, or unavailable energy (e. g., the heat of surrounding objects) into work is impossible. As stated originally by Carnot, the second law asserts that heat cannot flow from a colder to a warmer body, that is, work cannot be obtained from heat without a fall in temperature (passage of thermal energy from the concentrated to the dissipated state). In Clausius's view of the second law, the "entropy," the scalar value which identifies the unavailable thermal energy of an isolated material system, tends to a maximum and can never decrease, or in other words, the tendency of any isolated material system is toward states in which the entropy continually increases; and the most memorable statements of the first and second laws ever given are the two aphorisms of Clausius which Gibbs made famous, viz.:

"Die Energie, der Welt ist constant.

"Die Entropie der Welt strebt einem Maximum zu."

Clausius applied the term "entropy" (*ἐντροπία*) to the unavailable thermal energy of a system because he conceived of such energy as being turned in upon itself and rendered unavailable during physicochemical transformations, just as Clifford conceived of matter in certain electromagnetic phenomena as turning in upon itself and passing into a fourth dimension of space. Although Clausius made it very clear what entropy is mathematically, the peculiar derivation of the term is what has made it so difficult to understand and define physically, and some writers, like Gustave Le Bon, have even attempted to prove that when energy is dissipated, degraded, or rendered unavailable, it is destroyed and disappears, which would contravene the first law of thermodynamics. In order to conceive this as happening we should have to imagine energy as

—If dQ represents the amount of heat imparted to a body at any point and T its absolute temperature at that point, Clausius has shown that $\frac{dQ}{T}$ represents the infinitesimal change of entropy at that point independently of any previous heating. The total entropy of any chemical system in passing from the initial state (a) of any cycle of operations to a final state (b) would then be $\int_a^b \frac{dQ}{T}$ and for a reversible (Carnot) cycle the mathematical statement of the second law becomes $\sum \left(\frac{dQ}{T} \right) < 0$, implying that the positive and negative entropies of the system in passing from a to b and reversing backwards from b to a must exactly balance each other, like the two sides of an equation. True reversible cycles do not exist in nature as such, all spontaneous or natural processes being irreversible. The criterion of irreversible thermodynamic processes is the "inequality of Clausius" $\sum \left(\frac{dQ}{T} \right) < 0$, which implies that the phenomenon will proceed irreversibly in a definite direction, entropy increasing or energy dissipating to a maximum until a final state of thermal equilibrium (uniformly distributed temperature) is attained. Since irreversible thermodynamics deals with inequalities, and with the direction of energy changes rather than their quantitative aspects, it is essentially a qualitative science, and the equations of reversible thermodynamics can be applied to it only as norms, that is, as ideal or limiting cases.

passing into some other mode of existence or dimension of space, as Clifford did. But while we can postulate a fourth dimension (or, if we please, n dimensions) of space and deal with it mathematically or metaphysically, we cannot deal with it physically because we are not sensibly aware of its existence. The first and second laws remain unshaken therefore as a scientific statement of the sensible facts of human experience. In the simple expression of the second law by Willard Gibbs (1876) and Helmholtz (1882), that part of the energy of a body or system which is free or available for mechanical effect tends to a minimum in physicochemical transformations at constant temperature and can never increase. Finally Lord Kelvin's broad and philosophical statement of the second law asserts a universal tendency in nature toward irrevocable dissipation (homogeneous distribution) of energy. All these principles—natural flow of heat from a warmer to a colder body (natural tendency toward equalization of temperature), spontaneous increase of entropy or unavailable energy in irreversible processes, spontaneous decrease or dissipation of free (available) energy along isothermal paths, universal tendency in nature toward homogeneous distribution of energy—really express the same idea under different conditions, and all turn upon the simple fact discovered by Carnot that in the heat engine or any other reversible cycle of operations (as a chemical reaction or an electric cell) no work can be performed unless there is a definite fall in temperature from source to sink.

The second law of thermodynamics rests upon a lower plane of probabilities than the first, because, in the first instance, we know it to be only sensibly true, as an empirically ascertained fact of human experience, while, from the viewpoint of molecular physics, it depends upon the theory that the heat of a body is the *vis viva* or rapid motion of millions of molecules of which, as Maxwell so aptly said, we cannot get hold of a single one. To illustrate this idea, Maxwell conceived of his "sorting demon," a being endowed with preternatural motor activity and intelligence of a kind that would enable him to "sort" or direct the movements of the molecules at will, so that he might reverse the second law, if he liked, and make heat flow from a colder to a warmer body. To such a being the notion of dissipation of energy in an absolute sense would be unthinkable, for he could utilize every scrap of it. "It is only to a being in the intermediate stage, who can lay hold of some forms of energy while others elude his grasp," says Maxwell, "that energy appears to be passing inevitably from the available to the dissipated state." Our perception of the dissipation or diffusion of the "energy available to man for mechanical effect" is thus a wholly subjective affair. Every apparent violation of the second law, however, has been found, upon close scrutiny, to be, in reality, only additional evidence in its favor, and Lord Kelvin's universal tendency toward irreversible dissipation of available energy has come to be recognized as a definite deterministic principle or "law" of nature, so far as human interpretation of nature is concerned. This is largely due to the monumental and epoch making work of Professor Willard Gibbs, late of Yale University, whose mon-

ographs *On the Equilibrium of Heterogeneous Substances*, and on *Statistical Mechanics*, are along with the great treatises of Carnot, Clausius, Kelvin, and Helmholtz, the definite landmarks in the history of thermodynamics. In the first of these works, Gibbs shows that the second law can be applied deductively to all spontaneous physicochemical or natural phenomena. In the second, he reverses the process and shows that by applying the theory of probabilities it is possible to obtain the laws and equations of thermodynamics by statistical deduction from the averaged motions of purely mechanical systems. As we read the faded pages of the *Transactions of the Connecticut Academy** which contain the original installments of the now classic memoir on chemical equilibrium, we feel that we are being guided by the firm hand of a master, a mathematical genius, who, by hereditary and ethical predisposition, poise of mind, and rigorous training, was "destined," as his English biographer, Professor Larmor puts it, "to contribute materially to the unravelment of the simple fundamental principles that regulate the complex phenomena of nature," and to become "the creator of a new science."

For most of the working theorems of modern physical chemistry were stated *a priori* as mathematical consequences of the second law, by Gibbs, many years before they were actually tried out and, in some cases, rediscovered in the laboratory. To Gibbs we owe an exhaustive theory of chemical statics and dynamics which Oswald predicted would be the ground plan of the newer chemistry for at least another century,¹ while his doctrine of chemical and thermodynamic potentials, taken in conjunction with the gravitational and electric potentials of Newton and Maxwell, furnishes the most satisfactory explanation we have as to the way in which all spontaneous material phenomena come to pass. The thermodynamic theory of Gibbs goes back to Kant's definition of chemical union as an interpenetration of masses of substance rather than a juxtaposition, as of molecules. Gibbs conceived of an ideal chemical reaction as acting, in its passage from initial to final stage, like an ideal heat engine or electric cell, that is, as a thermodynamic process capable of reversing or working backward and taking place, in the first instance, in virtue of the definite tendency of natural forces to flow from points of higher to points of lower potential. Many recent writers on mechanics (notably Hertz) trace the movements of such forces back to the so called "principle of least action" of Maupertuis, in virtue of which a conservative mechanical system will most naturally and easily proceed from one configuration to another (i. e., from an initial to a final state), along a path of least action, i. e., one upon which the system will only have to be started with the proper velocities in order to move along it unguided. In plainer English, forces of any kind, mechanical, chemical, electrical, biological, take the shortest path or move along lines of least resistance, and some physicists have even sought to explain the phenomenon of gravitation in this simple way. In the reasoning of recent physics, a flow from higher

to lower potentials is a decrease in the rate of vibrations at constant wave length. The tendency of vibrations of all kinds is to slow down inevitably if left to themselves, and this change in the rate of vibrations at constant wave length is what constitutes a transformation of energy. Chemical forces, on Gibbs's showing, act through differences of what he calls chemical potentials in substances that are chemically heterogeneous and of thermodynamic potentials in substances or systems of substances that are physically heterogeneous.

In mathematical chemistry we speak of the volume, mass, and entropy of a substance as its *capacities*, that is, definite and measurable variables, which, being proportional to the quantity of substance, define its chemical status; while its pressure, temperature, and chemical potentials are to be regarded as *intensities*, that is, measurable qualities, which, independently of the quantity of substance considered, determine its physical behavior. The chemical potentials which Gibbs was the first to introduce as coefficients into the fundamental equation of thermodynamics, were afterward interpreted by Maxwell as the intensities with which chemical substances tend to expel themselves from the mass or compound containing them, while Larmor has identified the chemical potential as the "marginal available energy per unit mass at constant temperature." The potentials are thus the mathematical symbols of the forces which set chemical action going and as such are closely connected with the "surface tension" and "surface energy" of modern physics and biology. Gibbs's conditions for the complete and permanent equilibrium of an isolated homogeneous substance are that the pressure and temperature should be constant throughout its mass, since changes of pressure and temperature obviously disturb mechanical and thermal equilibrium; while the potentials of the chemical components of the substance should be equal, since differences of chemical potential disturb chemical stability and precipitate chemical change. For an isolated and reversible chemical system which is physically heterogeneous, as water and steam enclosed in a boiler, or a colloidal mass or solution, Gibbs gives the following criteria for complete equilibrium and stability: "If the energy of the system remains constant (as in the total material universe), its entropy (unavailable thermal energy) must have attained a maximum value for perfect equilibrium. If a reversible system is isentropic or adiabatic, i. e., so enclosed that neither heat nor other energy can enter it or leave it, its entropy is then constant, and its intrinsic energy should be a minimum for complete equilibrium. But when the system is reversible and isothermal, i. e., so fed with heat that its temperature is kept constant, its free or available energy (ψ) should have attained a minimum value for constant volume, while its thermodynamic potential (ξ), (which differs from ψ only by an added constant), should be a minimum for

¹In order to understand the delicate distinction between adiabatic and isothermal systems we should remember that the temperature of a body is a measurable intensity, it possesses no quantity, and its tendency to give up or receive heat in relation to adjacent bodies; but the quantity of heat added to a body means the amount of work absorbed or absorbable by the body through change in the temperature of another body, so that addition of heat to the body does not necessarily change its temperature nor does change of temperature necessarily imply absorption or development of heat. This distinction was first noticed by the great chemist, Joseph Black, in his theory of latent heat (1759-63), which may be summarized as follows: A solid liquefies or a fluid vaporizes through heat uniting with the solid or fluid body and a fluid solidifies or a gas liquefies through loss of heat, but in no case is this increase or diminution of heat detected by the senses or the thermometer. Black, who, like every one else in his day, believed heat to be a material substance, named that heat "latent heat" which alters the condition but not the temperature of a body, but he never published a detailed account of his theory, and in 1788 Deluc asserted himself to be its author. Trevor has recently given the following instances of the distinction between quantity of heat and change of temperature: "When a mass of air is adiabatically compressed or when it expands into a vacuum, the temperature of the mass changes, but no heat is added to it. When heat is added to a block of metal the temperature of the block rises. When heat is added to a mass of liquid water and overlying water vapor supporting a constant pressure, the temperature of the mass is not altered. Heat may be added to a mass of potassium sulphocyanate and water in the proportion of 100 to 1, and the temperature of the mass fall." "cess of forming a mixture, and the temperature of the mass fall." "seen from these illustrations that an isothermal system (maintained at constant temperature) and an adiabatic system (isolated from external heat or other forces) are two entirely different things, although they sometimes assume to be the same thing."

*Transactions of the Connecticut Academy, vol. 1, 1876, pp. 309-382; vol. 2, 1877, pp. 360-413; vol. 3, 1878, pp. 384-424; vol. 4, 1879, pp. 354-404.

¹See also the article on "The Principle of Least Action" in the same volume.

constant pressure. Any disturbance of these maxima and minima⁸ will, on the other hand, destroy equilibrium and precipitate chemical change. In a homogeneous substance the thermodynamic potential of a given mass of a homogeneous body stands in a definite linear relation to the chemical potentials of its components and the chemical and thermodynamic potentials of any component of invariable composition are identical for unit mass. In other words, spontaneous chemical change in a body of invariable composition will be identical with heat change. Gibbs's equation for the thermodynamic potential is therefore a close approximation to what happens in nature, as stated in the so-called Third Law of Thermodynamics of Berthelot, viz.: Every spontaneous chemical transformation will tend to produce the substance or system of substances whose formation requires the greatest evolution of heat.⁹ Graphically Gibbs showed that the thermodynamic potentials can be represented as depressions on a solid model called the thermodynamic surface. When the lowest minimum of free energy, indicated by the lowest depression on the diagram, has been attained, we have complete, stable and permanent equilibrium, or what Gibbs calls a "phase of dissipated energy," at which no further spontaneous change of substance or state is possible, unless the system is acted upon by external forces of considerable magnitude. For example, a crystal or mass of ore embedded in the rocky substance of a mountain has attained a definite phase of dissipated energy as the result of physicochemical changes acting through long periods of geological time. We may destroy its mechanical equilibrium with pick or crusher, or we may disturb its thermal equilibrium or chemical potentiality by the use of heat or strong reagents; but by itself the substance constitutes a true phase of dissipated energy, an inert mass, which is incapable of spontaneous change because its free energy or chemical potentiality is practically nil.

The mathematical expressions for the thermodynamic potentials were first stated more or less indefinitely by Lord Kelvin in 1855, and definitely by the French physicist, F. Massieu, in 1869; but they were best interpreted and applied to all natural phenomena by Gibbs,⁴ who expressed these potential functions as follows:

Let ϵ , t , η , v , and p represent the energy, temperature, entropy, pressure, and volume of a given material system, then $\psi = \epsilon - t\eta$
and $\xi = \epsilon - t\eta - pv$

where ψ and ξ represent the thermodynamic potentials at constant temperature, and at constant temperature and volume respectively. The potential ψ was rediscovered in 1882 by Helmholtz,⁵ who called it the "free energy" of any system at constant temperature, because it represents that part of the total energy of the system which is not bound up with its thermal or molecular changes, but is only concerned with changes in its mass or structure, and is thus "free" to take part in physicochemical transformations. This variation of free energy in a reversible system between any two stages of chemical change at uniform temperature is wholly available for mechanical effect. As interpreted by Gibbs, the equation $\psi = \epsilon - t\eta$ means that the

⁸Gibbs has expressed these criteria of equilibrium algebraically, as follows: For all changes in adiabatic systems with unaltered energy, the variation of the entropy must vanish or be negative ($d\eta_{\epsilon} \leq 0$). When the entropy remains unchanged in such systems,

the variation of the energy must vanish or be positive ($d\epsilon_{\eta} \leq 0$).

For isothermal systems, the change of free energy must either vanish or be positive ($d\psi_t \leq 0$), or with constant atmospheric pressure, the total thermodynamic potential must vanish or be positive ($d\xi_{tp} \leq 0$).

⁹For a compound substance, the equation for the thermodynamic potential is $\xi = \mu_1 m_1 + \mu_2 m_2 + \dots + \mu_n m_n$, where μ_1, μ_2, \dots and m_1, m_2, \dots are the chemical potentials and masses of the components respectively. When the substance is a body of invariable composition, Gibbs's equation reduces to the simple form $\xi = \mu m$, which is Berthelot's Third Law. (*Transactions of the Connecticut Academy of Arts and Sciences*, iii, pp. 143-150.)

¹⁰*Transactions of the Connecticut Academy of Arts and Sciences*, iii, pp. 144 to 148.

¹¹*Sitzungsberichte der Königlich preussischen Akademie der Wissenschaften*, i, pp. 22 to 39, 1882.

spontaneous chemical activity of any material system at uniform temperature is a function of this temperature (t) and "the variables which express the distribution of the matter in space (ϵ, η)."¹⁰ As interpreted by Helmholtz, the change of free energy of any chemical system along isothermal paths is equivalent to the difference between its $\psi = \epsilon - t\eta$ means that the change of any chemical system along isothermal paths is equivalent to the difference between its total or intrinsic energy (ϵ) and its "bound" or unavailable energy ($t\eta$). From this expression for the unavailable energy of an isothermal system ($t\eta$), we see that the entropy of the system (η) is a coefficient or determinant of its unavailable energy, since to obtain the latter, we have only to multiply the entropy by the temperature. As the trend of the entropy is upward and positive in adiabatic transformations (in which no heat is ultimately gained or lost, because the system is self contained and isolated from external forces), so the trend of the free potential energy will be downward and negative in isothermal transformations (at constant temperature).¹⁰ The equation $\xi = \epsilon - t\eta + pv$ means that if a reaction occurs in a chemical system at constant atmospheric pressure as well as constant temperature, the amount of energy available for mechanical effect during any change of state will be modified by the addition of the constant $p v$ to the original expression for "free energy" ($\epsilon - t\eta$). For this reason the potential has been called "the modified available energy" by Larmor, while Duhem has called it the "total thermodynamic potential" for systems at constant temperature and pressure. The formula for available energy at constant temperature alone was given by Lord Kelvin as $\epsilon - t\eta + t\eta_0$ + constant, which he called the "motivity" of an isothermal system, implying that it is the potential energy or motor power which any reversible chemical system possesses between two stages at constant temperature. It will be seen that the "motivity" differs from the free energy potential ($\epsilon - t\eta$) only by a slight added constant, which (says Larmor) "is immaterial as regards its application." The free energy potential (ψ) is clearly the best criterion for spontaneous physicochemical change and for equilibrium in natural processes because the condition under which it is applicable—uniformity of temperature—is more relatively probable, whether in nature or in the laboratory, than either constant entropy or constant pressure. Not only is the temperature of any living body normally constant, but all biological phenomena have temperature limits beyond which they cannot take place and optimum temperatures at which they take place to best advantage.

If, following Gibbs's argument, we compare two states of a reaction taking place in a material system at constant temperature, we have, as a consequence of the original equation for change of free energy:

$$\psi' - \psi = \epsilon' - \epsilon - t(\eta' - \eta).$$

"If we suppose the system brought from the first to the second of these states without change of temperature and by a reversible process in which W is the work done and Q the heat received by the system,

$$\text{then } \epsilon' - \epsilon = W - Q,$$

$$\text{and } t(\eta' - \eta) = Q \text{ (unavailable thermal energy)}$$

hence $\psi' - \psi = W$ (free energy or capacity of system for external work).

and for infinitely small reversible change in the state of the system in which the temperature remains constant, we may write $-d\psi = dW$. Therefore $-\psi$ is the force function of the system at constant temperature just as $-\epsilon$ is the force function for constant entropy.¹¹ This means that ψ and ϵ

¹⁰"The necessary increase of the entropy function (η) defines the trend of adiabatic transformation; the necessary decrease of the available energy function (ψ) defines the trend of isothermal transformations. . . . The entropy is the convenient analytical function to employ when the temperature is different in different parts of the system." Larmor, *Proceedings of the Royal Society*, London, Ser. A, lxxxi, No. 5, 541, pp. xliii-lix, 1905.

¹¹Gibbs, *Transactions of the Connecticut Academy of Arts and Sciences*, iii, pp. 145 and 146. Gibbs reminds us, in regard to these isothermal changes of state, that, for their validity, "it is not necessary that the temperature of the system should remain constant during the reversible process to which W and Q relate, provided that the only source of heat and cold used has the same temperature as the system in its initial and final state. Any external bodies may be used in the process in any way not affecting the condition of reversibility, if restored to their original condition at the close of the process; nor does the limitation in regard to the use of heat apply to such heat as may be restored to the source from which it has been taken."

measure the actual work done by chemical systems at constant temperature or entropy respectively, exactly as if they were the Jacobian force function in purely mechanical systems. Furthermore, Gibbs (1878), and after him Helmholtz (1882), discovered that the electromotive force of a galvanic cell is identical with the free energy of chemical decomposition in the cell, and the relation of free energy to the surface energy of biology is sufficiently indicated in Boltzman's aphorism that the struggle for existence of living matter is a war for free energy. The equation $\psi = \varepsilon - t\eta$ (or $\varepsilon = \psi + t\eta$) is clearly then, the thermodynamic pathway into nature, if we are to treat of natural processes as physico-chemical or energetic phenomena. Or, as Gibbs put it, in 1878, "the transition from the systems considered in ordinary mechanics to thermodynamic systems is most naturally made with this formula . . . the mechanical properties of a thermodynamic system maintained at constant temperature being such as might be imagined to belong to a purely mechanical system and admitting of representation by a force function."¹² The potentials ψ and ε were, for this reason, called the isothermal and adiabatic potentials of thermodynamic systems by Helmholtz,¹³ who reasoned as follows:

$$\psi = \varepsilon - t\eta$$

By differentiation $\frac{d\psi}{dt} = \frac{d\varepsilon}{dt} - \eta - t \frac{d\eta}{dt}$

But since $\eta = \frac{d\varepsilon}{dt}$ we have $\frac{d\psi}{dt} = -\eta$

$\frac{d\psi}{dt}$ is called the temperature-coefficient of ψ . Reversing the original equation of Gibbs, $\psi - \varepsilon = -t\eta$ and substituting the temperature coefficient for η , we obtain the Gibbs-Helmholtz equation: $\psi - \varepsilon = t \frac{d\psi}{dt}$ a result which

had already been obtained independently by Lord Kelvin in 1855.¹⁴ "This equation," says Nerst, "contains in a general manner, all that the laws of thermodynamics can teach concerning chemical processes, viz., that in every chemical reaction, the change of free energy (ψ) represents "the maximum amount of work which can be obtained from the reaction in question," and "that this maximum work will actually be done if the reaction proceeds in an isothermal and reversible manner." "Every future development in thermodynamics," Nerst insists, "will be an addition to the above equation,"¹⁵ and he then proceeds to classify physicochemical phenomena by the Gibbs-Helmholtz criterion, as follows:¹⁶

(1) If $\psi = \varepsilon$, then the changes in free and total energy are equivalent at all temperatures; the temperature coefficients of both $\left(\frac{d\psi}{dt}, \frac{d\varepsilon}{dt}\right)$ will be zero, and the phenomena defined by this condition will not be influenced by changes of temperature, a state of affairs which could only

be true of the ideal frictionless systems of pure mechanics. Now the so called second principle of Berthelot asserts the capacity for external work (chemical energy) and heat development during a chemical reaction are equal to each other; that is, $\psi = \varepsilon$. But Nerst's brilliant lecture and the experimental data he adduces point to the conclusion that in Berthelot's equation ($\psi = \varepsilon$), "we are dealing with a law more or less approximate at ordinary temperatures, but true in the neighborhood of absolute zero." This important generalization was already implicit in Gibbs's original equation ($\psi = \varepsilon - t\eta$) for when $t = 0$ (absolute zero of temperature), then the bound energy ($t\eta$) is null, and $\psi = \varepsilon$; but Nerst goes a step further in assuming that $\frac{d\psi}{dt} = \frac{d\varepsilon}{dt}$ when $t = 0$. This hypothesis goes beyond

the laws of thermodynamics, and would have to be justified by experiment. Berthelot's theorem is, then, only relatively accurate and a far truer approximation to the facts is to be found when

$$(2) \varepsilon = 0, \text{ for then } \psi = t \frac{d\psi}{dt}, \text{ and we have the law}$$

of Clausius, that the work done by a chemical system is proportional to the absolute temperature, as in the expansion of perfect gases or the behavior of solutions at infinite dilution.

$$(3) \text{ If } \psi = 0, \text{ then } \varepsilon = -t \frac{d\psi}{dt}, \text{ a case which could only}$$

have a real existence, when ψ is very small in comparison with ε over a wide range of temperature; this condition obtains in dissociation, evaporation, fusion and all properly physico-chemical phenomena.

(4) In the important case where $\varepsilon = 0$ and $\psi = 0$, the second law of thermodynamics would again not apply. Of such cases Nerst instances the movement of a mass at right angles to gravity, or the passage of one optic isomer into another; and he concludes that the two laws of thermodynamics are not adequate to account for all natural phenomena. It would, perhaps, be more accurate to say that they would be inapplicable to any "natural" phenomena, if such there be, in which heat and cold do not play a part. But we cannot conceive of a ray of light falling from the farthest star without some evolution of heat. All material systems, as Gibbs said in 1876,¹⁷ are in reality, thermodynamic systems. For where $\varepsilon = 0$ and $\psi = 0$, then both energy and free energy would be null and non-existent and we should be reminded of the ironic symbolism and simplicity of the old Talmudic sentence: All things proceed from above save heat and cold. This brings us to the important question: How far does the second law of thermodynamics apply to physiological (*qua* biological) phenomena. In approaching the question we should not forget that thermodynamics, although a new way of looking at things a new vista into nature, is, in the end, only a human science like any other, and is qualified by the same limitations that have hampered man everywhere in his attempts to interpret the facts of his experience, viz., the limited and fallible character of his mind, and the fact that his senses are not as fine as they might be. *Der Mensch begreift niemals wie anthropomorphisch er ist*, said Goethe, and wherever man has fallen into the theologian's error of obtruding his personal preferences and egotism between his limited mind and the external facts, he has utterly failed to comprehend the latter in a truly scientific manner. "Human science," says Larmor, "still retains an aspect essentially anthropomorphic; it is conditioned by the limitations of our outlook as determined by the coarseness of our senses."¹⁸ The advantage of thermodynamics as an intellectual instrument of precision lies in the fact that, being an impersonal, mathematical science, it is not concerned with the final causes, i. e., the ultimate nature of the forces it deals with, but only with their ascertainable dynamic effects, or to quote Goethe again, "*die Mathematik ist, wie die Dialektik, ein Organ des inneren, höheren Sinnes; in der Ausübung ist sie eine Kunst wie die Beredsamkeit. Für beide hat nichts wert als die Form; der Gehalt ist ihnen gleichgültig.*"

Modern physiologists have come to be more and more in favor of a dynamic interpretation of the

¹²Gibbs, *American Journal of Science*, 3, 5, xvi, p. 442, 1878.

¹³Helmholtz, *Sitzungsberichte der königlich preussischen Akademie der Wissenschaften*, 1882, (Oswald's *Klassiker*, No. 124, p. 271).

¹⁴From the Carnot-Clausius equation $\sum \int \frac{dH}{t} = 0$, Lord Kel-

vin obtained the relation $\frac{d\varepsilon}{dt} = t \frac{d\eta}{dt}$, but since $\varepsilon (= \psi + t\eta) = w - h$, we have $\frac{d\varepsilon}{dt} = -\frac{dw}{dt}$, whence $\varepsilon = w - t \frac{dw}{dt}$.

which is the Gibbs-Helmholtz equation in terms of the work done (w) as the equivalent of free energy (ψ). Conversely, for a particular configuration, $H = t \int \frac{d\varepsilon}{t}$, and for a constant tem-

perature $w = \varepsilon - H (= \psi - t\eta = \psi)$, "which show how H and w may be determined for all temperatures from a knowledge of the intrinsic energy of the body, and of [one of] these functions themselves for a particular temperature." (*Quart. J. Math.*, April, 1855; reprinted in *Phil. Mag.*, 1878, 5 s., i, 9-10.) The credit of having discovered the most important relation in thermodynamics belongs therefore to Lord Kelvin, but he did not, like Gibbs and Helmholtz, push his result to its ultimate consequences. When asked by Professor Larmor, in 1907, why he did not follow up his important discovery, he replied in a characteristic letter of eleven words: "Yes, it is all there; there is nothing to be added." See Larmor, *Proceedings of the Royal Society*, London, 79, A, 1907, p. 108.

¹⁵Nerst, *Experimental and Theoretical Applications of Thermodynamics to Chemistry*, New York, 1907, pp. 3 and 4.

¹⁶Nerst, *London*, 1907.

¹⁷Transactions of the Connecticut Academy of Arts and Sciences, iii, 108.

¹⁸Proceedings of the Royal Society, London, 1908, Ser. A, lxxxii, No. A 543, p. xxxviii.

material facts of their science because, beginning with the work of Harvey and Steven Hales, the mechanical hypothesis, crystallized in La Mettrie's *L'Homme Machine*, has turned out to be the only one that yielded worthwhile results. As Professor E. B. Wilson has recently remarked,¹⁹ biologists of the school of Linnaeus, Cuvier and Agassiz, who were influenced by the bias of final causes, settled biological problems for themselves by saying that creatures are what they are because the Creator "made them so" in the first instance. But a vast array of real facts has convinced modern biologists that creatures have acquired their specific characters through some automatic process in virtue of which nucleated protoplasmic structures have the power of doing what they have done before. We may believe with Darwin that the origin of species is to be sought in long continued (eventually) "natural" selection, gradually developed through environmental stress in the struggle for existence. Or we may maintain with De Vries that evolution is not continuous but discontinuous, species originating *de novo* or *per saltum*, in a spontaneous or explosive manner, so that the failure of any individual species to survive is due, not so much to environmental stress, as to some primary defects of structure in its own body. It may be that evolution proceeds by slow gradations or by leaps and bounds or (what seems most likely) is capable of both continuous and discontinuous processes, the apparently spontaneous result having "a long foreground," in the sense of being the end-product of a complex series of physicochemical changes. In any case, Darwin and De Vries have given a reasonable answer to the question "Why?" but have not told us "How." In other words, evolution accounts for the survival of the fit but does not explain the origin of the fit, a problem which even Driesch has not solved, and which Kant, Cuvier, and Lamarck believed to be insoluble. Natural selection and saltatory variation (mutation) explain the origin of structural adaptations, so that their transmutations can be verified, if need be, in the laboratory, but of the origin of organic and functional adaptations, as the regeneration of tissues, automatic regulation of form, development of embryos from fractions of the ovum, parthenogenesis, etc., these theories tell us nothing, because the "power of adaptation" which is assigned as a reason is the very thing we are called upon to account for and explain. Of good approximate answers to the latter question, Professor Wilson instances Herbert Spencer's definition of life as the continuous adjustment of internal to external relations, Professor Brooks's aphorism that life is response to the order of nature, and Max Verworn's attempt to define life as "the metabolism of proteids." Professor Crampton has recently summed all this up in the equation *adaptation = life*, that is, the creature that cannot adapt itself to life cannot make provision to secure the maintenance of its kind and must itself ultimately die out in the war for existence.²⁰ Darwin calls his great work *The Origin of Species*, which means that he did not intend to discuss the origin of life,

but he tried to express one view of it in his subsequent doctrine of pangenesis—that "every separate part of the organism reproduces itself" through transportation of gemmules from different parts and organs to the ovum. The hypothesis of pangenesis has long since been discarded, but its essence survives in Starling's doctrine of the "hormones," chemical irritants which set up cellular changes and specialization of tissues through their catalytic or stimulating effects upon the ovum or the organism itself. Not to mention the remarkable analogy between the hormones and the animal extracts of therapeutics or the bacterial products of "immunochemistry," the origin of secondary sexual characters has been attributed by Cunningham to stimulant hormones from the testes and ovary.²¹ Starling found that, contrary to expectations, section of the nerves supplying the mammary glands in rabbits does not produce the inhibitory effect of Battey's operation (nonovarian ovariectomy), but that parturition and lactation took place even after section of the spinal cord, whence it is inferred that the growth and functional activity of the mammary glands is not a nervous reflex but is due to the stimulus of chemical secretions from the ovaries themselves. Thus the chemodynamic view of life is justified by this "somatogenic" theory of the origin of adaptations as well as by the "blastogenic" theory, familiar to us as the Roux-Weismann hypothesis of preformed germs in the nucleus. In Mendel's law we have a mathematical statement of the permutations and combinations of the determinants involved in the heredity of specific characters that suggest the finite relations in a chemical reaction and the supposed physical mechanism of which seems borne out by microscopic investigations of the germ cells. Here, as in the working theories of astronomy and physical chemistry, the Augustinian monk has attained to the ultimate aim of the man of science, the power to predict and control phenomena. But neither Darwin's theory nor Mendel's law covers all the facts and a school of Neovitalists has arisen who attempt to explain biological events by referring them back to "vitalism" or a definite "vital principle." These terms, which derive from the "animal spirits" of mediaeval times, only beg the question and were invented to conceal our ignorance from us. Neovitalism may be a comfortable form of belief, but it can never be a real working hypothesis, since, like other forms of intellectual complacency, it drives the subject into a blind alley and sidetracks the chances of further investigation. Most prominent among neovitalists is the distinguished morphologist Driesch, who, in his recent Aberdeen lectures,²² rejects the mechanicochemical theory of life, because he thinks that such morphogenesis as the regeneration of a newt's leg can never be explained by chemical activity alone, and because protoplasm, which experimental morphology has shown to be the agent in morphogenesis, cannot be likened to any machine whatever. Driesch defines protoplasm as a "polar bilateral structure" capable of regulating its development symmetrically in any of the three dimensions of space, and as a "har-

¹⁹E. B. Wilson. *Scientific American* Supplement, New York, 1967, p. 346, 1968. Professor Wilson's argument has been closely followed in the above.

²⁰*Popular Science Monthly*, 1xxiii, p. 449, 1968.

²¹*Ursachen der Entwicklungsgeschichte*, xxxi, pp. 372 to 427, 1908.

²²Hans Driesch. *The Science and Philosophy of the Organism*, London, 1968.

monious equipotential system" having the same potency for development in all its parts, whether alike or different in structure. From this Driesch argues that the functions of protoplasm cannot be explained in terms of mechanism, since a machine, the smallest part of which is identical in structure and function with the whole machine itself, is unthinkable. But chemical action *an und für sich* is no less mysterious and transcendental than life itself. For example, we might say that a lump of potassium cyanide or a stick of dynamite are also harmonious equipotential and polar-bilateral systems in that their poisonous or explosive properties are the same for the whole mass or any smallest part of it and by preestablished harmony would accommodate themselves to any known dimension of space. To paraphrase a witticism of Professor T. H. Morgan's, the harmony which the actual hen displays *in esse* is found by Driesch to exist in the egg as *in posse*.² In other words, Driesch's truism is not necessarily wrong; the difficulty is that in attempting to make the life process seem more miraculous than either chemical or physical phenomena it tells us nothing essentially new. Are vital processes, even if more inexplicable, really any stranger than the catalytic effects of light, the phenomena of radioactivity, the way in which colloidal metals duplicate the action of ferments and enzymes, the spontaneous behavior of an inactive saturated chemical solution whenever a microscopic crystal is placed in it or the way in which the latter heals itself mechanically (if it were alive, we should say instinctively) whenever it is injured? Although every laboratory fact cited by Driesch, especially the brilliant experimental work of Herbst and Loeb, points to a chemodynamic view of life, no chemist or biologist dreams that he can explain life as a finality by any mere array of technical terms.³ In the words of Herbert Spencer, "we cannot think of life as imparted into the protoplasm from without and yet we find it impossible to conceive of it as emerging from the cooperation of the components." The most fruitful field of investigation to date has been that most accessible to our senses, in which life is assumed to be dependent upon dynamic changes of substance. In order to understand the bearings of this thermodynamic view, let us go back to the beginnings of life upon the globe.

(To be continued.)

BLOOD EXAMINATION IN THE PRESENCE OF GANGRENE.

By DR. S. WILE, M. S., M. D.,
New York.

An article by Coons and Bratton (*New York Medical Journal*, July 31, 1900, p. 205) has dealt with the Prognostic and Diagnostic Value of the Leucocytes and Differential Count in Acute Abdominal Infection (Appendix). According to the au-

thors' statement among their 184 tabulated cases, they "include only those cases in which there was either a leucocytosis or an increase in the polynuclears—hence acute cases or chronic conditions with acute exacerbations." It is noteworthy, however, that of six patients reported with leucocytes less than 10,000 in number, four patients had gangrenous conditions. One of the four cases presented a condition of "beginning gangrene in an old appendicitis, and is referred to at length, because without the physical signs, one might be misled from the blood count alone. Without the history, the blood count reveals very little, but with the physical signs, history, leucocytes 4,300, and polynuclears 79.8 per cent., it is safe to say that we are dealing with no ordinary case of catarrhal appendicitis." One other interesting statement is the following: "We have records of a few hundred blood counts in septic processes, but in not a single instance has the infection been so sudden and intense that the polynuclears did not reveal the septic process by a marked increase in their relative number. The graver the case, the higher the percentage of polynuclears." The question of gangrene is an important one to the surgeon as well as to the patient. Immediate operation in the presence of gangrene is imperative. Does the blood count serve as any index for operative intervention? Most assuredly it does not. A blood examination divorced from the clinical history gives little reliable information. Frequently will operators be misled if the blood examination is made the sole basis for surgical intervention. No condition reveals the weaknesses of blood examination, as at present conducted, as does a gangrenous appendix.

Dr. Coons and Dr. Bratton have omitted from their table one type of case that is perplexing but fortunately very uncommon. I refer to those conditions of gangrene attended by no leucocytosis and by no increase in the polynuclears. The history gives all the information; the blood examination tells nothing regarding the pathological condition nor the indication for operation. For example, a patient of Dr. Meeker gave history of acute onset, moderate fever, slight localized abdominal tenderness. The blood examination on three successive days was as follows:

Lymphocytes,	35	37	37
Polynuclear neutrophiles,	63	60	60
Polynuclear eosinophiles,	2	2	3
Total leucocytes,	6200	6800	6200

On the day of the third count operation was successfully performed and Dr. Meeker reported the following condition: "Moderately long appendix, two inches of which were bound in adhesions. A strangulation gangrene of the lower end of the appendix, the tip of which presented free in the abdominal cavity. There was a drop of pus in the gangrenous tip." Had the patient been allowed to get out of bed and walk about the appendix would probably have ruptured with a resultant peritonitis. The blood picture told none of this story because the strangulation of the appendix had apparently cut off the channels of absorption and the general system of the patient was not called upon to indicate its power of reaction.

Da Costa is quite right when he states that "the average count in puerile and gangrenous appendi-

² It is, of course, not the case that the egg is a "resident in the egg," he certainly cannot mean that the chemist and physicist are capable of explaining what has taken place. He probably considers that the conceptual shorthand of physics and in other language." Karl Pearson, *The Grammar of Science*, London, 1900, p. 333.

citis is higher than the maximum count in the catarrhal form of the affection." The high average is, however, more dependent on the purulent conditions than on the gangrene. Dr. Coons's and Dr. Bratton's figures also corroborate my findings. Out of twenty-two cases of gangrene of the appendix there were only three with a leucocytosis over 20000 and none over 25000. Out of sixty-two cases of abscess of the appendix there were twenty-three with a leucocytosis over 20000 and seven with more than 25000. Da Costa states that "counts of less than 20000 cannot be depended upon to reflect the character of the local lesion since an increase to practically this figure may be found occasionally in mild catarrhal cases as well as those with purulent foci."

Dr. Coons and Dr. Bratton in their conclusions state that with the polynuclears below seventy-five per cent., "if there is a leucocytosis, one may look for an old infection, well walled off, maybe an acute exacerbation." To this might have been added "possibly gangrene" merely as a phrase of caution.

Da Costa has classified appendicitis with absence of or only slight leucocytosis as suggesting (a) simple catarrhal appendicitis, (b) fulminant appendicitis, or (c) a localized pus pocket from which no absorption occurs.

Wood notes "if pus is found in small amounts and is well shut off from the general peritoneal cavity, the leucocytes may not rise or the increase may be so slight that it hardly exceeds the normal maximum of 10000. . . . Gangrenous and perforating cases show a low leucocytosis." Ewing reports that with gangrenous appendicitis there is "well marked leucocytosis in nearly all cases except in the fulminant and asthenic type of the disease in which the leucocytosis may fail." He also states: "The blood changes follow no definite rule in those dangerous forms of the disease which pursue a mild course for a time but suddenly develop peritonitis from perforation." The mild course referred to may be due to a gangrenous process. The real position in regard to blood tales and operation is particularly well emphasized in Ewing's statement: "Nor can the question of operation in frank cases be decided from the examination of the blood alone, which indicates only what damage actually exists, while the operation is intended to meet the conditions which may later arise." The blood alone merely indicates the relation of the resistance of the patients to the particular toxins absorbed. The blood does not indicate the pathological condition of the appendix or peritoneum. There is no relation between the height of the leucocyte count and the size of the appendiceal abscess or the extent of

Nor is it a safe statement that "patients without leucocytosis rarely need operation and usually recover under palliative treatment as also do many with leucocytosis." This represents unwarranted ultra conservatism. Bloodgood (1900) reported a gangrenous appendix with leucocytoses varying from 13000 to 25000. If the leucocytes had been 10000 instead of 13000 would the indication for operation have been less? Douglas is not overstating in placing little value on the total leucocyte count in determining the presence of pus or gangrene. Lilienthal expresses the surgical judgment by disregarding the leucocyte count in determining whether or not an operation is to be performed. Osler places

the average total leucocyte count of appendicitis at about 12000 to 15000. He calls attention to the facts that the polynuclear neutrophiles may increase to ninety per cent. or ninety-five per cent. and that even in cases of abscess formation the leucocyte count may be normal or subnormal. Forty-seven cases out of the sixty-two cases of appendicular abscess reported by Coons and Bratton had less than eighty-five per cent. polynuclear neutrophiles, and twelve out of twenty-two cases of gangrenous appendix had less than eighty-five per cent. of neutrophiles.

Sondren states that "a relative percentage of polynuclear cells below seventy per cent. with an inflammatory leucocytosis of any degree excludes the presence of gangrene or pus at the time the examination is made. . . . In adults a purulent exudate or gangrenous process is decidedly uncommon with less than eighty per cent. of polynuclear cells and the probability of their presence increases with this percentage." Coons and Bratton report three cases out of twenty-two with gangrene and less than eighty per cent. polynuclears. They also report seventeen out of sixty-two cases of appendicular abscess with less than eighty per cent. polynuclear neutrophiles.

Gibson's chart graphically indicating the disproportion between the total leucocyte count and the relative percentage of polynuclear neutrophiles is serviceable for purposes of prognosis and diagnosis of the general systemic effects of toxic absorption. It is valueless as a reliable indicator of the presence or absence of gangrene. Operation alone can determine gangrene unless, clinically, evidence is present. The absence of leucocytosis does not exclude gangrene nor abscess formation, nor does the presence of a high leucocyte count necessarily indicate gangrene.

Leucopenia may be due to typhoid fever, grippe, malaria, or merely to malnutrition or starvation. McArthur reported an interesting case with leucocyte counts of 4200, 4400, 4500 which later he found was probably due to an absolute starvation plus large doses of a headache remedy. In considering the leucopenia of appendicitis these facts must be recalled.

Emerson suggests that a low count may mean a poor reaction or that the infection is so mild as to elicit little or no reaction. If by the term infection one understands toxic absorption it is clear that with little absorption of toxins there will be little reaction induced. Therefore the polynuclears will give little evidence of the danger of the toxic materials absorbed. The leucocytosis will then in no wise indicate the potential dangers from the infecting agent. The total leucocyte count does not parallel the severity of the infection or serve as a single indicator of the possible prognosis.

Leucocytosis is an evidence of an individual's power to overcome the results of an infection—it is an index of body resistance. The relative increase of polynuclear neutrophils parallels, approximately, the degree of toxic absorption. Therefore gangrenous conditions of the appendix without marked absorption show little or no increase of the relative polynuclear neutrophils, while the total leucocyte count may be scarcely altered. If the patient is on starvation treatment a leucopenia may exist. The

low leucocyte count (4200) and low relative polynuclear count (sixty-three per cent.) in the case I have cited were quite in accord clinically with a temperature of 99° F., and general freedom from all symptoms save tenderness over the appendix area. Such low counts, however, give no inkling of the dangers lurking in the appendix—perforation and peritonitis. From the surgical point of view great harm would have been done the patient had operation been delayed until the blood picture warranted it for the hæmatological indication might have presented only after perforation and possibly peritonitis.

Blood examinations afford symptomatic facts to be interpreted only in the light of the clinical history of the patient. In surgical conditions, as appendicitis, the hæmatological facts may have corroborative value in determining the time of operation. The operation, however, should never be based merely upon the blood examination. In gangrenous appendicitis, particularly, the blood examination demands most careful interpretation to afford diagnostic aid to the surgeon. Its prognostic value is limited to the time at which the blood was taken for examination. It has no prognostic value for the future pathological developments. Therefore frequent blood examinations are required to keep a record of the prognostic indications of the blood conditions. The indications for operation arise from a consideration of the history, physical examination and clinical facts elicited. The blood examinations merely supply part of the clinical facts.

2493 BROADWAY.

COMPLICATION OF FRACTURE OF THE NECK OF THE FEMUR IN A MULTIPARA.*

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Literature on the subject in the practice of obstetrics is very vast. Under complications I understand accidents in obstetrics meaning before, during, or after the puerperium. I shall not attempt to deal in this paper with complications generally, but to elucidate fully this rare one. Let me, therefore, reiterate that ectopic gestations, rupture of the uterus, placenta prævia, post partum hemorrhage, and many more complications which are too numerous to mention are, more or less, of common occurrence. These remarks are merely intended to show that the voluminous literature on the subject fails to reveal a complication as the one following, which is primarily my object in reporting same, and not to repeat the complications of common occurrences as the ones referred to above.

CASE.—Family history: Mrs. A. W., thirty-six years of age, born in Russia, multipara. Her father died at the age of ninety-three from senility. Mother died at the age of seventy from typhoid fever. Patient had two brothers and one sister living and well. There was no history of tuberculosis or cancer as far back as she remembered. Her husband was physically well developed and denied ever having had any venereal diseases, and stated to have always enjoyed good health.

Personal history: Patient had the usual diseases of childhood. Commenced to menstruate at the age of fourteen and had always had regularity and painless menses. She

married at the age of twenty and had given birth to six children, without instrumentation, all of whom were living and enjoyed excellent health.

History of present trouble: During her pregnancy with the last child she made no complaint nor had she any ill effects as the result of pregnancy, but enjoyed good health until the evening of February 11, 1908, which was the time of her delivery. She summoned her accoucheur and his examination revealed a normal position of the child to the mother's pelvis, and such being the case he awaited a spontaneous delivery after sufficient time had elapsed, but as the expected prognosis did not mature and finding it to be a case of dystocia, he summoned another physician and delivered her by means of a high forceps operation. After a few days the child succumbed as a result of the injuries sustained by the use of the instruments.

On February 12th and 13th, two days after the delivery the patient remained in bed with perfect ease and made no complaints aside from those usually accompanying the after effects of the anæsthetic.

On February 14th, the third day after delivery she experienced a transferred pain in the right hip joint radiating to the knee, which was very excruciating upon the slightest disturbance of the limb, thus rendering change of posture impossible with the single exception of extension of the limb, which lessened her pain to a considerable extent.

As a result of her suffering, the attending physician, together with others, treated her internally for approximately two months for some nervous affection, unsuccessfully, but her pain still persisted.

On April 14, 1908, which was a little more than two months after delivery, I was the next unfortunate one summoned to afford her relief, if possible. I found the woman in a dorsal recumbent position, emaciated appearance, and an expression of prolonged suffering. Her temperature was practically normal; pulse 96; respiration 22; heart and lungs normal. Palpation of the abdomen caused no pain and exhibited no abnormalities. Vaginal examination showed the cervix to be soft and flabby; and the uterus filled with a pus like fluid which she discharged in large quantities, causing discomfort. Inspection of her right limb showed the region of the upper part of the right femur to be larger than the similar region on the left. The foot was slightly everted, a dull pain was present in the hip joint when at perfect rest, but the slightest disturbance of an examination caused agonizing suffering.

On the following day I deemed it advisable to administer an anæsthetic for two reasons, which are more or less evident: for the purpose of cleaning her uterus in order to relieve the puslike discharge previously referred to, and principally for diagnostic purposes.

In attempting to flex the femur under anæsthesia (ether being employed) I found the same yielded to flexion to an abnormal degree, and while it was impossible to elicit crepitus (as is the case of all old fractures) I readily formed an opinion that there existed a fracture.

I cleaned her uterus, and a few days later when she was free from the after effects of the anæsthetic, I sent her to the Pennsylvania Hospital of this city, and the surgeon in charge made an incision over the hip joint, and probing therein showed it to be an impacted fracture.

She made a slow, but thorough recovery, barring, of course, the usual accompanying deformity of such fractures. Her emaciated condition that existed previously has now changed to a healthy appearance, together with an increase of weight.

After perusal of the history of this case, you undoubtedly will debate in your mind the ætiologic factor of the fracture, especially in view of the late diagnosis of same.

We are all aware that fractures unite even without the interference of a physician, so the question legitimately presents itself why did not this one? Observation of cases of fractured legs show that a patient will walk if there is little fragmentary displacement and in such cases usually there has been an impaction which keeps up the continuity of the bone. In this case it is very likely my predecessors had overlooked the condition for the reason there had been no factors in the history for any such fracture.

*Read before the Society of Obstetricians and Gynecologists, April 28, 1909.

The causes of fracture as classified in all text-books of surgery are predisposing and exciting. Among the former we may mention old age, diseases of bone, such as osteomalacia, or diseases of the synovial membranes. In this case, however, the woman was young, had enjoyed good health previous to this occurrence. She had had absolutely no pain whatsoever until labor, therefore, we may justifiably exclude the predisposing causes. Among the latter causes of fracture are external violence and muscular action; external violence however predominating over the muscular action.

The fact that violence of any kind had been denied by the patient and family, and especially the absence of any such cause by the attending physician at the time of delivery leads us to the presumption that a fracture would not have been anticipated.

In concluding my remarks, reasoning by exclusion, I desire to emphasize particularly that this fracture must have been caused at the time of delivery by the unforeseen negligence of the attending physician by causing a slight twist of the thigh, or endeavoring to manipulate the instruments, flexed the leg more than the normal capacity could endure, and, as a result, fracture of the neck of the femur followed. In addition thereto, it is plausible to believe that it may have been caused after delivery, but the patient positively states that she was not out of bed, but rather rested herself, and knowing there would be exaggerated pain upon the slightest movement, it is pretty fair to assume that she remained in bed silently, and, consequently, there was not disturbance to cause any such fracture.

On the other hand, it would be ridiculous to conclude that the fractured neck of the femur was caused by a previous disease of the hip joint when the pain was experienced but two days after her labor; and, additionally, we have the history of good health.

I trust that the publicity of this report will be productive of some good in the way of obviating the puzzling conditions of any such similar cases should they occur.

1735 SOUTH EIGHTH STREET.

DO THE SAPROPHYTES, SO CALLED, PRODUCE
TOXINES WHICH HAVE SELECTIVE AT-
TRACTION FOR THE BRAIN AND NERVE
TISSUE AND THUS CAUSE THE IDIO-
PATHIC DISEASES OF THESE
STRUCTURES?

By BERNARD R. LE ROY, M. D.,
Athens, Ohio.

It is with much hesitation that the writer asks the foregoing question, and then offers his testimony which seems to point clearly in the direction of the guilty organisms which have been overlooked, yet have been the cause of more suffering and misery in this life than all other animated forms of matter.

In my earlier efforts along these lines the thought was forced upon me that there was more truth than poetry in the old, old saying that "cleanliness was next to godliness," and to me it means much more than a poetical thought! It is truth itself.

Faithfully has the writer followed out a certain line of investigation, making note of the many changes, but, adhering to the thought, that a normal person was free from unpleasant odor, and that a diseased person was afflicted with varied odors, and that many diseases are as readily recognized by their odors as by any other method; this is a truth that cannot be denied. The first step was to examine into the odors of the nerve diseases in which the writer was most interested, paralysis and the epilepsies. Now, it is well known that all paralytics, without reference to the cause, have an odor that is very peculiar, and peculiar to that disease; no other diseased condition known to the writer will or can produce the same odoriferous emanation that is readily noticed in all cases of paralysis. Again, the odor of paresis is as nothing when compared with the odor emanating from an epileptic! Now, why should these diseases produce such vile odors? What is it about the disease or diseased person that produces these infernal stenches? Surely there must be a reasonable cause, and if so why not try to discover it, and when found try to remove the cause of the vile odors and perhaps, perhaps, mind you, the removal might modify or change the course of the disease. Why not, pray?

It is some years now since the writer first became imbued with this idea, and he cannot do better than relate the incident. But first let it be known that he had had an idea that the cause of these diseases could be found through the searching power of chemical analysis alone, and had been working diligently along these lines for some years, when one day a patient called for relief from a severe attack of leucorrhœa:

CASE I.—This patient said that leucorrhœa had been present for some months and that she had failed to obtain relief. An examination was made and the cause found, the laceration corrected, and the disagreeable trouble ended. Now she returned and complained of symptoms indicating engorgement of the pelvic cavity, erotic thoughts and dreams, unsatisfied sexual longings, was very nervous, irritable, and complained very much of loss of sleep, and was to me clearly and rapidly entering upon the life of a neurotic. Examination did not reveal any particular wrong except that a certain odor was very evident and was of such a peculiar nature that it may be spoken of as a "sexual odor." It was the same odor noticeable when the normal sexual organs are being examined, except in this case the odor was intense. Making use of sterile cotton the parts were carefully cleansed and the cotton sent to the laboratory for examination. In time word was returned that the specimen contained myriads of spore bearing organisms and that the bacteriologist did not know just what germs they were, unless they were the smegma bacillus. This report did not satisfy me, for I believed that the cause of that odor had much to do with the cause of the woman's condition of body and mind, so I determined to experiment and watch the results. Knowing that sulphur was a good germicide I unhesitatingly packed the vagina with wool very heavily impregnated with the flowers of sulphur, powdering the external parts with the same and adjusting a well fitting napkin, sent her off to her home and to bed. On the third day she returned and a more pleased woman will seldom be found, free from unpleasant thoughts and feelings. She had slept as nicely as an infant. This treatment was kept up for several weeks, and the patient improved so rapidly that it proved a star case; she being an educated woman, spoke interestingly of her changed condition, and has done more to cause me to think and study along these lines than I would wish to confess.

Now, why the relief after such simple germicidal treatment? I have followed the lines doggedly and hope to give an intelligent answer.

By this time the writer was forming his thoughts in order to make a careful enquiry into the horde of saprophytes which inhabit the human body, for evidently some one or more of these microscopic organisms were the partial if not the whole cause of many mental and nerve diseases which, because of our ignorance of the cause we are wont to classify as "idiopathic"; so he started in to inspect every case presenting, and to enquire more carefully and more fully into the mental and nervous symptoms, not overlooking the slightest symptom.

About this time the second case to be studied presented:

CASE II.—The patient was a girl, aged fourteen years, tall, nervous to a degree, was said to suffer from St. Vitus dance. I found the child suffering from anemia complicated with a severe form of chorea. No vaginal examination was made, but the odor was very pronounced and a trial was decided upon. The alimentary tract was mildly but thoroughly cleansed and kept clean as near as we could make it, then baths were ordered and the surface of her body was scrubbed with soft soap and water, then gently rubbed with a five per cent. solution of sulphuric acid in water; every external crevice and fold of her body was carefully bathed with this acid wash and permitted to dry upon her skin; this was done every day for a few days then every three or four days for some months. The results surprised us, but to hasten the recovery the sulphate of quinine, one ounce to the quart of acid wash, was added, this seemed to be a better germicide than the plain acid water (and I afterwards proved it to be so in the laboratory). The relief of the nervous symptoms was slow but sure, her general health improved very fast. I finally prevailed upon her parents to make use of the vaginal douche, using a weaker solution of the same acid quinine sulphate solution, used for her body, after the general bath was taken. Within the next few days the "odor" had entirely disappeared from the child, and her health seemed to improve in rapid strides, the chorea seemed to vanish and did not return, the child waxed fat and hearty and remained in good health afterward.

Now, why did she improve under this form of treatment?

Faithfully have I carried this form of treatment out in every case presented, where the mental or nervous symptoms would warrant me in believing that there were indications of incipient nerve disease present, and through the kindness of the superintendent of the Athens State Hospital I have been permitted to make an extended study of the bacteriology, as well as to try out this form of treatment on upward of one hundred patients, and at this writing, January, 1909, the treatment is being given to the same patients, only modified to meet hospital requirements. I will briefly mention a few of the hospital cases.

CASE III.—Girl, aged nineteen, was afflicted with chorea so badly that she could scarcely walk alone. Stepping up behind her I suddenly called her name and she immediately went into choreic spasms which threw both her feet from under her so that she fell to the floor. This girl was given the same treatment as the preceding case, and nothing else; and within one month the patient had made such rapid improvement that her family physician, who called to see her, did not believe me when I told him of the treatment given the girl, but repeatedly asked me to tell him what the medical treatment was that I had given her, when in truth she did not get a particle of medicine for the chorea during the three months that she was under my care. This patient nearly recovered from the chorea, but not fully, and I believe that she would have fully recovered had she been given the same treatment as I have outlined in above.

CASE IV.—A woman, aged about thirty-eight, had been treated in this hospital before, and had been here several months before given this treatment. She was exceedingly

nervous, anæmic, sleepless, and so active that she could be restrained with difficulty. Her history was bad, a case of hereditary affliction. I found her thin in flesh, anæmic, constipated, vaginal discharge abundant and evil smelling, scented the ward wherever she went, had never taken a douche of any kind. The case had been diagnosed as depressive mania, maniacal form. I started in with my scrub bath, followed with the solution of the acid sulphate of quinine mentioned before, followed with a douche of full strength of the same solution, which was given with care and thoroughness. This was repeated every day for one week, then twice each week for three months, when she was sent home on a trial visit so much improved in general health that her husband expressed gladness in her good appearance and plumpness of body.

In this case improvement was rapid and steady and I would ask why did she improve under this form of treatment? No odor of any kind could be noticed after two months' treatment; was this merely an accident? Again was I told of the changed mental life following this form of treatment, and this patient went into minute detail as to "how she would think and think of evil things," but not so now, for the pressure had been removed. Again I ask, how did this form of treatment remove the pressure from her nerves, from her brain; and why did she improve so rapidly after this treatment was given to her?

During the four months the writer was employed as acting assistant physician in the Athens State Hospital for the Insane, he had charge of the female departments, including the receiving ward, which had fifty-three patients, it being the suicide ward. And although the patients were bathed regularly, he ordered every patient to be subjected to the "scrub bath" described before, followed with the acid rub down and then the two quart vaginal douche. All this was done with care and exacting thoroughness, and every wrinkle, fold, and cavity of the skin was scrubbed clean and then disinfected with the acid solution, because we found that it takes an acid to destroy the spores of the bacilli.

The diseases if classified would have ranged from top to bottom of Kraepelin's classified list of mental diseases.

The treatment of patients in this hospital is completely covered by isolation, seclusion, and restriction as mechanical methods, and tonics and physicking and drugs inducing vomiting and sleeping as the medical method, and one, only one physician, ever made use of the baths as an aid in treatment. And this only semioccasionally. Now, what was the result of the acid treatment? I had no occasion to use any of the aforementioned methods, not a hypodermic, not a dose of medicine other than I have stated, but would resort to the bath and douche, then have the patients wrapped in heavy blankets and put them to bed, and we found that it was not very difficult to keep them in bed. Sleep would come to them and rest would follow, and thus we tided them over the menstrual periods, which we found to be the most exciting period of the majority of the patients. From a ward of restless human animals, under this treatment they rapidly quieted down and became, to me, a very interesting lot of well behaved patients. Again, while this caused much added work to the attendants, they soon learned that it repaid them with interest, in the patients' good behavior and improvement along all lines, and thus made their work easier and

very much more interesting. The patients soon manifested a deep interest in this new form of treatment, and many, many times, expressed their gratefulness to me for the relief and improvement noticed by them and their friends.

In addition the score or more of patients suffering from arteriosclerosis in its many phases, were given one grain doses, three times each day, of the sodium sulphocyanate (Merck) in water solution with wonderful effect, but this will form the nucleus of another paper.

CASE V.—Mrs. T., wife of a chemist, was taken sick three years ago. The family history was clouded, acute sickness dated from a miscarriage; and patient had been treated by a specialist, of New York, for some considerable length of time; and as the patient grew worse and became unmanageable, the physician advised commitment to a State hospital. To do so she was brought to Ohio. She was placed under my care as a last chance before being probated. I found her to be a well developed woman, about thirty years of age. College education. For some months she had refused to meet her friends nor would she do anything expected of her, but was controlled entirely by that negative condition met with in dementia præcox, catatonic form. Often it would require the combined force of five or six people to dress the patient, and everything else was in keeping with this act. After much time I succeeded in making a careful examination of this patient, found her suffering from a severe laceration with badly infected endometrium, the odor arising from this was fearful, and when she menstruated the odor throughout the house was awful. She was taken to Columbus, O., and placed in the Grant Hospital, where the proper surgical aid was rendered. While in the hospital Dr. Stockton and Dr. Kinsman were called into consultation on the case, the diagnosis confirmed, and treatment advised. She remained in the hospital for a number of weeks under Dr. Kinsman's care, when she was brought to this city but slightly improved as to her mental condition but much improved physically. That stubborn negativism seemed to become more and more intensified than ever, she refused to eat, to sleep, to do anything reasonable. About this time she menstruated, and the odor was so offensive that the nurse rebelled, it was at this point that my treatment was commenced and carried out with care, attention was likewise given to the alimentary tract; and to the surprise of all she improved so rapidly that she voluntarily went to the piano and played and sang a number of songs, resuming her natural place in her father's household. The improvement was steady for four months when she was taken on a visit for nearly four weeks, no treatment was given her and she returned almost as much a wreck as she was before. Again treatment under a skilled nurse was given her and the response was quick and certain, so that after five months' treatment she was returned to her eastern home nearly a well woman. She is still improving and is attending to her household duties, and seems to be her old self once more.

Now why did she improve so rapidly under this form of treatment? Why did the odor disappear and not return as she improved in health?

The writer could give several hundred examples, but it would take too much space. But enough has been said to cause men who are in a position to think, to try this form of treatment, and then help solve the riddle.

In all the cases attention was given to the alimentary canal, with the same care as the external cleansing was given. Thus sleep and restful periods were obtained, all forms of excitement were withheld, and absolute rest, followed quickly, once the treatment was given and continued. Why?

So far I have mentioned only female patients. I hope to have the pleasure to present a paper along these lines concerning male patients alone, and also papers on the chemical and bacteriological studies

made on these patients and others. I am not dreaming when I say that to the absorbed toxins and endotoxines, generated by the so called spore bearing saprophytes of the human body are due the varying degrees of mental and nerve disorders, from simple absentmindedness to asymbolia, from the simple nervousness to the most intractable disease of the brain or nerves, heredity like traumatism, only playing the part of a weakening agent, at which time the toxins, produced by the spore bearing saprophytes (so called) get in their deadly work, forcing a learned profession to dub that work "idiopathic"!

That these saprophytes produce toxins and endotoxines, which, when injected into the living animal, produce varying degrees of paralysis the writer has positive knowledge; and, also that the action is slow and insidious under ordinary circumstances. There is one point upon which I am most certain of my position, that is, that these toxins have a selective attraction for the brain and nerve tissue.

IS TUBERCULOSIS DECREASING IN CITIES OF BETWEEN THREE HUNDRED THOUSAND AND HALF A MILLION INHABITANTS?

By LAWRENCE IRWELL, M. A., B. C. L.,
Buffalo, N. Y.

The report of the Census Office for 1907 shows that in the registration area, which includes 48.8 per cent. of the population of continental United States, there were 117.9 deaths from all forms of tuberculosis out of each thousand of deaths from all causes in the six year period 1901 to 1906. The registration area does not include any southern State.

The inhabitants of Cleveland, Pittsburgh, and Cincinnati are not very dissimilar. The first named has a comparatively small colored population, while the two latter contain respectively about seventeen thousand and fourteen thousand five hundred negroes. The following figures explain themselves.

	YEAR 1907.				
	Cincinnati	Pittsburgh	Cleveland	Buffalo	Detroit
Population according to Census Office Report for 1907	347,123	383,895	478,864	386,724	377,494
Total registered deaths	6,423	7,378	7,717	6,629	6,062
Number of registered deaths from tuberculosis (all forms)	926	534	709	590	455
Approximate number of deaths from tuberculosis if 117 per 1,000 of total deaths is taken as a standard	751	863	902	775	709

The colored population of Buffalo is small, as is that of Detroit, the total deaths of negroes from all causes being only forty-six in the former city in 1907, and ninety-five in the latter—171 in Cleveland.

It has been suggested that 117 per thousand of total deaths is too high a tuberculosis mortality for cities having a small colored population, but the answer is that out of the entire number of deaths in the registration area in 1907—687,034—only 43,302 of the decedents were reported as colored in any degree.

As there is, in my opinion, no doubt that Dr. Maurice Fishberg's estimate (*Medical Record*, June

12th, 1909) that twenty per ten thousand of population is not in excess of the actual tuberculosis death rate of any city in the United States which has at least three hundred thousand inhabitants, I append figures calculated upon that basis. To facilitate comparison, the number of registered deaths from all forms of tuberculosis in the five cities named above is repeated.

	YEAR 1907.				
	Cincinnati	Pittsburgh	Cleveland	Buffalo	Detroit
Approximate population according to Census Office Report	347,123	383,895	475,864	386,724	397,494
Number of registered deaths from tuberculosis	926	534	709	590	455
Number of deaths from tuberculosis if twenty per ten thousand of population is taken as a standard	694	767	931	773	735

The hypothesis that there were only 543 deaths in Pittsburgh from all forms of tuberculosis in twelve months although there were 926 in Cincinnati in the same period, is obviously untenable even when one notes that only a single year is being considered.

In cities of moderate or large size, the law usually requires physicians to report cases of tuberculosis to the department of health, or some similar authority, but this duty is frequently neglected. Almost all phthisical persons have learned of this requirement, and the majority of them protest against it. In some instances the doctor hears—"don't notify the board of health; it is only bronchitis"—the moment he steps inside the sick room. Another appeal, often pathetic, is—"if I die of consumption the company won't pay my life insurance; they'll say I had it when I applied for the policy, so, doctor, don't report that I have anything the matter with my lungs." In a great many cases of this character, the good natured physician, having persuaded himself that his patient's condition is exceptional, decides that he need not notify the board of health, and after the grim destroyer has made his accustomed visit, a certificate is written upon which "bronchopneumonia," "la grippe," "heart disease," or almost anything except the truth, appears as the cause of death. If, however, the words "tuberculosis pulmonalis" are on the death certificate, the obliging doctor is liable to be reprimanded, or fined for having omitted to report the case. When, therefore, a sufferer from phthisis, whose condition has not been registered in accordance with the statute or city ordinance, departs this life, the certificate seldom discloses the true cause of death.

In large cities instances are not uncommon in which patients in the earlier stages of consumption assure their physician that they never expectorate, although their relatives know that they expectorate profusely. The doctor, having discovered "only one sore spot," professes to regard the case as "purely bronchial," and forgets such troublesome details as Calmette and cutaneous tests.

The figures which follow, taken from the *Census Office Mortality Statistics* for 1907, are both important and significant, although nothing can be absolutely proved by examining the data for only one year. The *Census Office* report for 1908 has not yet been published.

	YEAR 1907.				
Total registered deaths	from Cin-	diseases in Pitts-	named: burgh	Cleveland	Buffalo
"Heart disease"	423	432	503	581	454
"Bronchopneumonia"	169	420	126	215	188
Pneumonia (lobar and unqualified)	373	538	555	407	449

Limited as the statistics under consideration undoubtedly are, a careful study of them in conjunction with such facts as I have been able to ascertain with regard to the climatic and general condition of the five cities named, has led me to the conclusion that in Pittsburgh about two hundred deaths from tuberculosis were, in 1907, registered as "bronchopneumonia." In Cleveland, over one hundred deaths due to tuberculosis seem to have been registered as pneumonia; and in Buffalo, a hundred and fifty or more deaths from tuberculosis appear to have been credited to "heart disease" which, of course, includes some thirty different disorders. The statistics of Detroit show a suspiciously low tuberculosis mortality accompanied by a comparatively high death rate from both "heart-disease" and pneumonia. In my opinion, fully one hundred deaths from tuberculosis have been recorded as the result of "heart disease," while almost another hundred, due to the same cause, have been attributed to pneumonia. The number of deaths registered in Cincinnati as produced by tuberculosis is high, yet I have been unable to detect any obvious error in the vital statistics of that city. Until last year (1908) the milk supply of Cincinnati was particularly bad, one half of it being from "slop fed" cows. There are, however, no clear signs that even the infant mortality from tuberculosis was exceptionally high as a consequence of the use of this inferior milk. It is only fair to add that "marasmus," "debility," and "inanition" when written on the death certificates of children often mean tuberculosis.

If phthisis or any other form of tuberculosis is being "rapidly stamped out" (Woods Hutchinson), as some enthusiasts wish the public to believe, the evidence of any marked decrease between 1901 and 1907 is not apparent to those who search below the surface. Some decrease has necessarily taken place as a result of the cosmic process by which those individuals who are most susceptible to the attacks of tubercle bacilli are gradually carried off, leaving a race slightly more resistant to these microorganisms than its immediate predecessors.

Twenty-five years ago a number of competent observers asserted that Koch's discovery of the cause of tuberculosis, made two years previously, would result in the wiping out of the disease within a quarter of a century. Nothing of the sort has happened, and the probability is that no decided decrease will take place until segregation of all consumptives is made compulsory by law. In the United States, antiexpectoration ordinances have, up to now, had little effect, sometimes because the so called "gutters" of asphalt streets are as dry as the sidewalk, sometimes because ignorant and thoughtless persons do their utmost to circumvent such ordinances by expectorating down gratings into cellars, into handkerchiefs which dry in their pockets, etc. At this time it may be well to recall the opinion of Dr. Frederick T. Roberts, of Londond (England), which, although ridiculed when expressed in

1898, seems to have some foundation: "I venture to predict that so long as the world lasts, consumption will be one of the chief scourges and dreads of its inhabitants."

The use of such terms as "bronchopneumonia," "heart disease," "rheumatism," "Bright's disease," is involuntarily tolerated by the census office, but it is very unsatisfactory for statistical purposes, because the names referred to do not clearly indicate the cause of death. In making this statement, I realize, of course, although I am not a physician, that cases occur in which the exact cause of death cannot be determined without an autopsy, and it may be that in instances in which complication of diseases exists post mortem examinations would be of limited value.

425 PORTER AVENUE.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Closed August 16, 1909.)

XC.—How do you treat typhoid fever? (Answers due not later than September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVIII has been awarded to Dr. W. A. Wallace, Spartanburg, S. C., whose article appeared on page 403.

PRIZE QUESTION LXXXVIII. THE TREATMENT OF EPISTAXIS.

(Continued from page 462.)

Dr. J. J. Sullivan, Jr., of Scranton, Pa., says:

According to Casselberry, the bleeding is from the anterior part of the septum in about ninety per cent, although it may occur from any part of the nasal mucous membrane. For those who can use the head mirror and nasal speculum I would advise the following line of treatment: (1) Clear away all blood by hot saline irrigation. (2) Sit patient up straight, head perfectly level, basin held under chin. Introduce a pledget of cotton wet with hydrogen peroxide into nasal cavity. After bleeding is checked, place a piece of dry cotton in the nostrils to exclude the air. My reason for cleansing the nose is that blood clots act as a shield to the bleeding areas, hiding it from view, and the bleeding continues beneath the clot. (3) If the bleeding still con-

tinues examine the nose under reflected light, locate bleeding spot, and apply a Simpson splint of Bernay's sponge, cut to desired size and lubricated with clean oil. Inject a few drops of water into the meshes of the sponge causing same to swell and exert pressure. (4) Tamponage of the anterior and posterior nares may be practised as a last resort in extreme emergency. This is a dangerous method on account of the liability of internasal sepsis, and should be practised only when the other methods have failed. Introduce a doubled strong silk suture long enough to pass from nose to throat (this is important) through an Eustachian catheter or tied about the eye of a soft rubber catheter. Introduce through the nose, seize the string with a forceps, and draw out through mouth. Remove catheter, cut string—giving two ligatures—leading from nose to throat. Tie the ends of one and loop it over the ear. It is useful in case another postnasal tampon is necessary. A piece of iodoform gauze is now rolled loosely, cigarette shape, doubled on itself and tied to the middle of the silk suture making a plug the size of a walnut. The index finger is now hooked behind the soft palate and the gauze drawn by the nasal string into the pharyngeal vault. The ends of the nasal and mouth strings are now tied and marked by a piece of gauze to distinguish from the reserve strings. Both are now attached to the ear by adhesive straps. Pack the nose loosely with iodoform gauze, cut in one inch strips and wet with hydrocarbon oil to prevent adherence to the nasal membrane on removal. The packs can be retained for twenty-four hours if no symptoms of infection appear.

Recurring epistaxis from the anterior part of the septum is usually caused by ulcer and dilated vessels. It is my practice to first cocaineize the area and, in ulcer, to curette the area down to the perichondrium. This allows the vessels to contract properly. Suitable compression is now applied. Light cauterization of the bleeding point or dilated vessels, using the flat end of the cautery blade at white heat. In both cases an ointment, ten grains of gallic acid to the ounce of an oil, should be applied several times a day.

Operative cases. Direct pressure to part with Simpson's splint or oil gauze.

When reflected light is not used, I would advise numbers one and two as described and the following if necessary. Wrap a piece of absorbent cotton loosely about a probe, so that it forms a cone about three inches long and one inch wide at its external end. Dip it in hydrogen peroxide and pass along the floor of the nose to the pharynx. When it is well in the nose, place the index finger against the cotton plug and withdraw the probe. After the ebullition gas has subsided, repeat, placing another cone firmly over first. A third and even a fourth smaller plug may be needed. If oozing still continues place outside a cotton plug with Monsel's solution. This hardens and allows no blood to trickle through. If bleeding still persists to a dangerous degree, anterior and posterior nasal tamponage, as described, may be practised.

Medicinal. Calcium chloride, grains 30, repeat it in three hours. Morphine sulphate, grains $\frac{1}{4}$ (in adult). The use of adrenalin in severe hæmorrhage is practically useless on account of being washed

away from contact with bleeding area by the rapid flow of blood.

Dr. Henry I. Berger, of Indianapolis, Indiana, remarks:

The first indication is that the physician should not become excited when seeing the copious flow of blood, and second to gain the confidence of the patient and the friends. The treatment will then depend upon the severity of the hæmorrhage, and may be divided into the immediate and subsequent treatments.

When the familiar methods, as the application of cold over the back of the neck and over the nose, and elevation of the limbs fail to stop the hæmorrhage, an investigation of the cartilage of the septum at its lowest border should be made because this is the usual source of hæmorrhage due to the erosion of blood vessels. This bleeding area should then be cocaineized and cauterized by using any of the following, galvanocautery, lunar caustic, or chromic acid.

But what are we to do in case of emergency? The first recourse we have is to pack the nares. Since the bleeding is usually unilateral it is necessary to pack only one nostril. The head should be tilted backward while packing the nose and then pressure should be exerted toward the median line. A Bernay sponge may be employed in place of the gauze packing. It should be remembered that the gauze should be sterile, and one long narrow strip should be used. Absorbent cotton will answer the same purpose. If the hæmorrhage is not controlled quick enough, the patient should be told to breathe through the mouth, and firm continued pressure for a few minutes should be made, on both alæ of the nose. In the meanwhile styptics can have been procured, the most useful of all is tannic acid. It is best employed in solution by dissolving enough of the powder in half a wine glass of water until a syrupy liquid is obtained. A pledget of cotton saturated with this solution should be applied to the bleeding place and retained there until the hæmorrhage ceases.

However there are cases of epistaxis which do not respond so readily to treatment. Here we must resort to packing the posterior nares with absorbent cotton. Bellocq's cannula serves as a guide or a gum elastic male catheter is just as good. In emergency a piece of wire (7 inches long) or a hair pin sterilized by boiling and fashioned after the shape of a platinum loop and having its end protected can be employed. The technique is familiar to everybody. I will therefore ask you to keep only the following in mind: 1, That the size of the plug for the posterior nares should be of the same size as the choanæ, $1\frac{1}{4} \times \frac{1}{2}$ inches; 2, that the cotton employed should be absorbent cotton and should be antiseptic (medicated) in preference to aseptic cotton so as to prevent purulent otitis; 3, that no plug should be allowed to remain in position more than twenty-four hours. After removal a copious lavage of the nares should be given. Warm sterile water or normal saline can be employed. Too much pressure should not be made for fear of causing the hæmorrhage to reappear; 4, that every plug has two

strings. One emerges from the anterior nares and the other from the mouth. Both ends should be tied in front of the nose interposing a piece of sterile gauze thereby occluding the anterior nares.

The constitutional effects after severe epistaxis are similar to those of secondary anæmia due to hæmorrhage. The indications are to restore the blood lost, to quiet and to support the patient. Enterocolysis, hypodermoclysis, and intravenous infusion are at our disposal.

After the hæmorrhage has ceased, one should make a rhinoscopic examination and seek for the presence of hypertrophy of the posterior end of the inferior turbinate, atrophic rhinitis, syphilis, tuberculosis, tumors, and ulcers. Recurring hæmorrhages should arouse the suspicion of cardiovascular and blood diseases, hæmophilia, scurvy, and hypertrophy of the heart.

In conclusion, I would ask you to remember the possibility of vicarious menstruation, and that epistaxis is a frequent prodromal symptom of typhoid fever.

Dr. Norman J. Lebharr, of New York, observes:

Mild cases of epistaxis need very little treatment. In most cases the bleeding does very little harm and stops spontaneously within ten or fifteen minutes. To aid in checking the hæmorrhage the patient should be kept quiet and the head held in such a position that the blood will flow from the nostril instead of running back. Applications of cold should be made to the nape of the neck or directly to the nose, or hot water (120° to 125° F.) may be used. Pressure of the alæ of the nose against the septum is useful.

In all cases of nasal bleeding, it is advisable to insert a speculum, where possible, and with the aid of a forehead mirror and good light to ascertain the point from which the blood is flowing. Care must be taken, however, not to start the bleeding afresh by disturbing the parts too much or by removing clots that have already formed. I have seen a very severe hæmorrhage started anew by a too persistent effort to discover the exact location of a bleeding area. In the great majority of cases the use of the speculum will reveal an erosion or ulcer somewhere in the anterior of the nose, generally on the cartilaginous septum. A styptic applied to these parts will suffice to check the bleeding. Adrenalin chloride (1 in 1000, children 1 in 10,000 solution) applied on a small piece of cotton or lint to the bleeding point will arrest the hæmorrhage. Or a piece of cotton, saturated with hydrogen peroxide, can be applied with equally good result. Monsel's solution, iron perchloride, a solution of alum or tannic acid, iron ammoniosulphate and alum are all valuable as styptics. Among the articles found in every household which can be made use of by the physician in an emergency, and which are useful on account of their styptic properties are lime juice, lemon juice, and vinegar. The time honored use of the cobweb as a styptic is mentioned only to be condemned as a dirty relic of the barbarous past. So, too, is the use of newspaper and wrapping paper with which the nostril is often plugged by the laity.

To prevent recurrence, during the interval be-

tween attacks, the ulcer should be attended to. Sometimes cauterization of this with solid silver nitrate will be sufficient to cure; but usually it is best to touch it with the galvanocautery, the point of which should be heated to a cherry red and quickly touched to the spot several times, until the surface is thoroughly seared. In most cases a single treatment will suffice, but in others a subsequent cauterization may be found necessary.

In the more severe cases, where bleeding occurs from points far back in the nares, other methods must be employed. Insufflation of powders is often of value. Powdered matico leaves or powdered suprarenal gland are useful but alum or tannic acid should not be used as they are both extremely painful. Injections of hot water prove useful where insufflations fail. The water should be thrown in both anteriorly and posteriorly and should first be lukewarm and then gradually made hotter until reaching a temperature of 127° or 140° F., according to the tolerance of the patient. If these general measures fail, particularly if the patient has lost much blood, plugging of the nares should be resorted to. The nasal passages are first thoroughly cleansed with salt solution, and the patient allowed to blow his nose gently, so as to get rid of some of the more easily removed clots. Aseptic gauze is taken and cut into strips, a half inch wide and four inches long. These are immersed in a solution of adrenalin chloride (1 in 1000) or hydrogen peroxide. With the aid of a nasal speculum and a thumb forceps, these strips are packed tightly into the anterior nares and carried back well into the choanæ, both in the middle and inferior meatus. It is best, in order to facilitate removal, to attach each piece of gauze used to a string. When in spite of anterior packing the hæmorrhage shows no inclination to yield it will be necessary to tampon the posterior nares. The anterior packing must first be removed and the passage again thoroughly cleaned. Then a Belloq's cannula, or a soft rubber catheter with a string attached is passed into the nostril and made to appear in the pharynx, where it is grasped and drawn forward, through and out of the mouth. A tampon about the size of a walnut, one small enough to enter the choanæ but not so small as to be drawn through the nasal passages, is made out of absorbent cotton. This is attached to the string and gently pulled into place, leaving sufficient length of string attached to enable the operator to fasten it externally to the cheek by means of a strip of adhesive plaster. Without the latter precaution there would be great difficulty in removing the tampon. These tampons should be removed at the end of twenty-four hours.

Sufferers from epistaxis may need general treatment applied in the intervals between attacks. The treatment may be that of the local trouble as mentioned before, or it may mean treatment appropriate to the cause of the bleeding. Venous stasis, because of difficulty of return of blood to the right heart, of arteriosclerosis, of hypertrophy of the left heart, of vicarious menstruation, of anæmia and chlorosis and of the hæmorrhagic diathesis, occurring in patients commonly known as "bleeders," each needs treatment directed to the cause.

(To be concluded.)

Correspondence.

LETTER FROM LONDON.

The Report of the Whiskey Commission.—The Bannato Cancer Fund.—The Hospital Sunday Fund.—Poisoning with Carbon Tetrachloride.

London, August 11, 1909.

The Commission which was appointed over a year ago to inquire into certain questions relating to whiskey has just issued its report. One of the chief points at issue was whether patent still spirit could be properly described as whiskey. The commission expressed the opinion that the term whiskey could be properly applied to any spirit manufactured from malt, malt and unmalted barley, or other cereals, whatever the nature of the processes or apparatus used for distillation. Some interesting points relating to whiskey have been elicited by this inquiry.

It appears that the word whiskey is not older than the end of the eighteenth century, the spirit which had been manufactured in Scotland at least two centuries earlier having been known as *aqua vita*. All whiskey is made by mashing grain, which is then crushed and extracted with hot water, yielding a "wort" which is fermented to produce a "wash." The difference in the mode of manufacture resides in the methods of distillation. In the old pot still the fire is applied directly to the vessel containing the fermented liquor, or wash, and at least two distillations are required. The object of the patent still, invented in 1831, was primarily economy, the loss of heat being diminished and the clean spirit being obtained by a single process. The product of the patent still is more nearly pure ethylic alcohol than the product of the pot still, the latter containing a larger proportion of secondary products. These products, though present only in very small quantity, appear to give to the whiskey the qualities which the connoisseur finds palatable. The commissioners assert that the majority of Englishmen who drink whiskey seldom drink anything but a blend, patent still whiskey being used mainly for diluting the flavor of the pot still whiskey. Further, it appears that a blended whiskey kept in wood undergoes certain changes commonly called maturing, which do not take place to anything like the same degree in the patent still.

With regard to the medical aspects of the inquiry and the value attaching to whiskey in the treatment of disease, the commissioners express the opinion that no difference in the results obtained could be attributed to the mode of preparation of the whiskey. This conclusion seems a little in conflict with that contained in the following paragraph of the report, in which it is said that in its dietetic use flavor plays a part of considerable importance, that a maturer whiskey is preferable for dietetic consumption to a new whiskey, and that whiskies of different flavors may have a particular dietetic value in special instances. The most important observation under this heading is that suggesting that patent still whiskey is a more deceptive beverage than the more highly flavored pot still whiskey, since the latter is likely to be drunk in a greater degree of dilution.

The commissioners do not recommend any additional provisions for the protection of the consumer

of whiskey. They think that he gets what he asks for, or rather what he is willing to pay for. The general conclusion of the report is a definition of whiskey as a spirit obtained by distillation from a mash of cereal grain saccharified by the diastase of malt.

With regard to brandy, the commissioners adopt the view that it must be the distilled product of the grape with the addition of some cane sugar and coloring matter. But it would appear that unless the consumer takes advantage of the provisions of the French law and purchases brandy with a warranty, he cannot be sure that the liquor he obtains may not be made in whole or in part from the fermented product of apples, pears, cherries, plums, or other fruit. The name of rum, the commission considers, should be limited to a spirit distilled directly from sugar cane products in sugar cane growing countries. Gin is made by adding the flavor of juniper and other herbs to plain, flavorless grain spirit. In its concluding sentences the report recommends that in prosecutions under the Sale of Food and Drugs Act the presiding magistrate should be authorized to obtain the assistance of two assessors, and suggests that a committee of skilled persons might be formed under government authority to advise on technical questions which affect the administration of the act by local authorities and the practice of public analysts.

The trustees of the late Mr. Harry Barnato, who bequeathed a sum of money amounting to a quarter of a million sterling for the establishment of a charity in memory of his brother, Mr. Barney Barnato, have decided to use the bequest in the building and endowment of an institution for the study and treatment of cancer. The new establishment will be administered, except as regards its finance, in connection with the Middlesex Hospital. Those connected with that hospital have had a vast experience in dealing with patients suffering from cancer, and a most painstaking research by competent observers is being carried on within the special "cancer wing" connected with the hospital. Fortunately a site was available adjoining the hospital, and this has been duly acquired. It is proposed to erect a building capable of containing fifty beds and a research laboratory, but no definite plans have yet been made. The Barnato Fund will be entirely devoted to the construction and endowment of the new buildings, and the Middlesex Hospital authorities will not be relieved in any way from their present responsibilities in connection with the main hospital or with the special cancer wing.

The Council of the Metropolitan Hospital Sunday Fund have this year distributed the sum of £67,212 to the various hospitals, dispensaries, etc., of London. This is the first time that the Battersea General Hospital, usually known as the Antivivisection Hospital, has been included in the list of institutions receiving a grant. The reason why it has not previously appeared on the list is that the hospital was not founded and maintained with the sole object of relieving the sick and suffering poor, but also for keeping prominently before the public the work of antivivisectionists. The members of its medical staff were narrowed down to medical men who, rightly or wrongly, do not believe in vivisection, and the distribution committee had felt that

under these circumstances they were not justified in granting an award to an institution thus limited in its scope and work. This year the committee had been approached by various members of the council, including some of the clerical members, with regard to the Battersea Hospital, and the committee, while still disapproving of the way in which the hospital was carried on, decided to bring the matter before the council. Mr. Thomas Bryant moved an amendment to the effect that the grant should be omitted, but, as no seconder arose, the amendment was dropped. The report was then adopted and the awards were ordered to be paid. The largest amount, as usual, goes to the London Hospital.

A fatal case of poisoning by carbon tetrachloride used as a hair wash occurred recently, and Sir William Collins asked Mr. Herbert Gladstone, the Home Secretary, whether he proposed to take any steps to restrict the sale or use of this compound. Mr. Gladstone wrote in reply: "My attention has been called to the use of tetrachloride of carbon as a hair wash and to the very great danger involved. I am informed by the Privy Council that tetrachloride of carbon is not a poison within the meaning of the Pharmacy acts, and there are therefore no restrictions as to its sale." It is thought, however, that the Pharmaceutical Society will take up the matter, as under a certain un repealed statute of the old pharmacy act this preparation can be scheduled as a poison.

Therapeutical Notes.

Skin Disinfection with Iodine.—Under the title *Skin Disinfection with Iodine in Abdominal and Other Operations*, Dr. Charles Jewett contributes to the *Medical Record* for August 14, 1909, the results obtained by him in his work. The method was first published by Grossich in the *Zentralblatt für Chirurgie* for October 31, 1908. The procedure as practised by Grossich is as follows: Some hours before operation the operation field is shaved dry and is then painted with a 10 or 12 per cent. tincture of iodine. No water or other liquid than the iodine tincture must be permitted to come in contact with the skin. The surface is covered with a dry sterile dressing. On the operating table shortly before the first incision the painting is repeated.

In Dr. Jewett's work care is taken not to wound the skin in shaving and, unnecessarily, perhaps, the field has usually been cleansed carefully about twelve hours before the iodine application with soap and water and a gauze compress, shaved, dried, and protected with a dry sterile covering. The process is so simple that even an inexperienced nurse can scarcely go astray in carrying it out.

The tincture of iodine should be especially prepared for the purpose and should be kept in a bottle well stoppered with a rubber or glass stopper to maintain the due proportion of iodine.

It will be remembered that the tincture of iodine of the *United States Pharmacopæia*, revision of 1909, contains 7 per cent. of iodine and 5 per cent. of potassium iodide. The preparation which has been used by the writer differs from the official tincture only in the reduced proportion of alcohol.

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HOOKWORM DISEASE AND THE SOUTH-
ERN NEGRO.

An important address was lately read before the Hampton Negro Conference by Dr. C. Wardell Stiles, chief of the Division of Zoology of the Hygienic Laboratory of the United States Public Health and Marine Hospital Service, entitled Hookworm Disease in its Relation to the Negro. An abstract of the address was published in *Public Health Reports* for July 30th, and the bureau has now done a great service by reprinting it in pamphlet form. Dr. Stiles succeeded admirably in the difficult task of imparting to his hearers in simple language an adequate idea of the origin, nature, and consequences of uncinariasis, and good results ought to follow such a plain exposition.

It is well known that Dr. Stiles's observation of the disease has been extensive, but he tells us that it has been relatively greater among the whites than among the negroes. Exact studies, he says, have not as yet been conducted in this country over any great area in regard to the comparative prevalence of hookworm disease in the two races in given localities, but statistics thus far available for Georgia* and Florida indicate that in our Southern States it is more common in the negroes than in the whites; yet its severity is apt to be less in the former than in the latter, so that many cases among the blacks

go untreated and even unrecognized, though they serve all the same as sources of infection.

Pollution of the soil with excrement is the chief means of spreading the disease, and Dr. Stiles finds that even such primitive devices as privies are oftener lacking on farms occupied by negroes than on those in the possession of the whites. Consequently it is not only on account of the greater prevalence of hookworm disease among the blacks, but also by reason of their more defective safeguards against general contamination of the soil, that negroes are the leading disseminators of the infection. They are therefore particularly appealed to to take measures to restrict their activities in this direction, and simple directions are given by Dr. Stiles regarding the situation, construction, and management of privies under circumstances which preclude the establishment of water closets with proper sewer connection.

But it was not alone to the reduction of the part played by the negroes in infecting the whites that Dr. Stiles asked his hearers to devote intelligent and conscientious effort; he showed them also very clearly the influence of the debility induced by the hookworm disease in neutralizing the measures now commonly resorted to for the prevention and cure of tuberculous affections, to which individuals of the colored race are well known to be particularly prone. It has been estimated, he says, that hookworm infection about doubles the chances of death in cases of tuberculous pulmonary disease. Thus it is clearly demonstrated that by taking proper precautions against spreading uncinariasis the negro will be acting in his own interest as well as in that of his white neighbor.

TWO RICHMONDS IN THE FIELD.

Within a week two separate announcements have been made to the world, from two different men, of the discovery of the North Pole. Last week we recorded our satisfaction at the discovery of the pole by Dr. Cook, whose story we did not doubt at the time and do not question now. At present we add our congratulations to Commander Peary, of the navy, whose independent discovery of the pole is also beyond question. There is glory enough for two—for a member of the medical profession and for an officer of the navy. Beyond all peradventure, "Old Glory" has been planted at the North Pole in advance of any other colors. Moreover, it has been done twice. That the two announcements were made almost simultaneously is an amazing fact, but we need not wonder on that account that the actual discoveries were almost a year apart, for many

things may happen to delay an Arctic traveler on his homeward journey as well as on his advance to the pole, so that the length of time consumed by Dr. Cook in reaching Denmark may well be accounted for. Of course the cavillings of doubters were to be expected, but we look to see both Dr. Cook's story and Commander Peary's substantiated to the satisfaction of all reasonable men. All honor to them both!

TUBERCULIN TREATMENT FOR DISPENSARY PATIENTS.

For the past two years those in charge of the Phipps Dispensary for Tuberculous Cases of the Johns Hopkins Hospital have been treating suitable cases with tuberculin. Hamman and Wolman describe the methods employed and the results obtained in the August number of the *Johns Hopkins Hospital Bulletin*. The requisites for placing patients on the list of those to receive tuberculin are willingness to undergo a long and tedious method of treatment, faithfulness in carrying out instructions, a moderate amount of home comfort, and enough leisure to allow of regular attendance at the dispensary. The stage or the extent of the disease is not considered. Having been selected, the patient is given a blank book with proper arrangement for noting temperature, pulse, and numerous symptoms daily, and he is turned over to the visiting nurse, who instructs him in the method of recording the data required in the record. The nurse also visits the patient's house and inquires into his mode of life. If he has fever, he is kept in bed until his temperature becomes normal, and he is required to take two quarts of milk and two, three, or four eggs a day. In addition, many of the patients have to take one or two ounces of olive oil daily.

The old tuberculin was used at the beginning of the work, but this was replaced later by the new tuberculin, T. R., and still later the authors used the untreated filtrate, B. F., of Denys. They believe that "more importance has been laid upon the choice of tuberculin than the matter deserves," and that "the potency of all tuberculin depends upon the same substance."

They give the injections subcutaneously in the region of the angle of the scapula. This method and location were selected because the local reaction is the most delicate guide to tuberculin intolerance, and it is important that the results of the local injection should occur where they can be seen and felt. The mild method of inducing tuberculin tolerance was adopted. The patients were given an initial dose of one one thousandth of a milligramme, provided they were in good general condition and

the lesion was inactive. Patients with symptoms of absorption from a tuberculous area were given a smaller initial dose. The increase of the dose was made slowly and cautiously, twice a week while the patient was receiving the smaller doses and once a week when the dose had reached ten milligrammes. One hundred and twelve patients have received the tuberculin treatment. The results are given in the seventy-one patients who had been under treatment for at least ninety days at the time of the report. Of these, thirteen were in the incipient stage, sixteen were moderately advanced, twenty-eight were far advanced, and fourteen were "probable" cases. Thirty-five of the patients had tubercle bacilli in the sputum. Of the fifty-seven cases that could be classified, ten were apparently cured, sixteen were arrested, twelve were improved, eighteen were progressive, and in one, a far advanced case, the patient died. The paper is illustrated with many charts and tables summarizing particular features of the cases.

FOOD FANCIES.

Many millions of quiet citizens eat what they please and as much as they please; achieve as green an old age as the most pigheaded of dietiticians; are for the most part unconscious of the workings of the alimentary canal; yet do not suspect they are the most wretched of empirics, in grovelling ignorance of the glorious accomplishments of *a priori* conclusions on questions of diet. We are informed that there are, in divers parts of our fair land, sanatoria where the bills of fare are arranged in tabular form to enable one to calculate quickly the proteid, carbohydrate, and saline percentages of the various items. Carefully instructed by the house physician, the long lines of patients, pencils in hand, add and subtract till the proper proportions for each individual diathesis have been ascertained, when the orders are given to the keepers—we mean, waiters. We understand that a strict Fletcherism is enforced in these places, not fewer than thirty-five jaw movements being permitted to each mouthful; conversation being impossible, the feeders sitting "all silent and all damned," an orchestra is permitted to do its worst. If we have confounded the rituals of two sects of the diet religion, we apologize.

What do our neurologists think of thus centring the mind on the digestive system? If there is a law of diet, it is that there are as many laws as individuals. "One man's meat is another man's poison" is an aphorism founded on profound observation; to attempt to marshal the multitudinous dyspeptics into platoons and regiments is useless and unkind. Vegetarians there are, but they quarrel among them-

selves as much as they do *en masse* with the carnivorous; the utmost freedom of individuality should be accorded them. Raw meat feeders may deserve respect if not imitation; breakfast food devotees, who prefer to pay four times the price of bread for the same thing, are harmless except under persecution; back to Nature cranks should be permitted to proceed thither crabwise, unhindered. Never should a concerted attack be made on these people; they should be allowed to destroy themselves individually. They should not be permitted to organize in gangs to molest normal diners; we object to these monomaniacs, as we do to prohibitionists, precipitating themselves upon persons of normal appetite and thirst who wish to be let alone.

We know gentlemen who for seventy years and more have partaken of meat three times a day and of fried potatoes, hot bread, strong coffee, sausage, scrapple, hash, *pâté de foie gras*, tea, high balls, claret, champagne, and all kinds of abominations unto the dietetician, without apparent impairment of their health. One conspicuous sign of their sanity is their noninsistence upon this diet as suited to everybody, babies, for instance, and convalescents. They watch, unperturbed, neighbors who think a steak and "French fried" the acme of an evening meal, or who devour poached eggs at that sacred function; who cut lettuce and put sugar on it; who take cold meat and marmalade for breakfast; who love pie so that they would take it hypodermically if they could. Unmoved, they regard their bitter enemies, armed, some of them, with scales, attacking their Salisbury steaks or their wheat hurled from a torpedo tube. Why will not the shadow of a shade feeders be equally tolerant? This particular form of interference with personal liberty is contagious and demands prompt stamping out. At luncheon recently an old friend attacked the writer violently for mingling a second cup of coffee with cream, emphasizing warmly the action of caffeine on the heart; he paused only to gulp his fourth litre of German beer.

MINOR POINTS IN OBSTETRICS.

McGill University, in Montreal, has a deservedly high reputation for its medical teaching, and even when a member of its corps of instructors speaks only to nurses we expect to derive benefit from what he has to say, for in these days one can hardly teach nursing without giving instruction in medical practice also. Consequently we find material for our professional improvement in an address delivered before the Nurses' Association last spring by Dr. H. M. Little, lecturer in obstetrics in the university

mentioned, published in the August number of the *Montreal Medical Journal*.

It is not uncommon for the obstetrical nurse to find herself charged with the responsibility incident to an emergency, but ordinarily she cannot be expected to act on her own initiative beyond the period of a few hours which may be occupied by the actual process of parturition. Nevertheless, Dr. Little expresses himself on some points that would not usually come up for consideration during that period. One of them has to do with the employment of the binder. Dr. Little tells us that at the present time it is very largely used in England and in Canada, less in Germany, and comparatively little in France and in the United States. He himself appears to regard it as harmless, if properly applied, during the time that is spent in bed and distinctly useful when the woman begins to walk. Probably the use of the binder is of no great moment, but doubtless it is comforting to the patient, and our predilection is in favor of its employment from the time that the placenta has been expelled.

Another point discussed by Dr. Little is that of the length of time for which the parturient woman should remain in bed after delivery. It is the custom in Canada, he says, to keep her in bed for from ten days to three weeks. Most of us in the United States probably feel that this protracted confinement to bed is unnecessary, and Dr. Little says that experiments with early rising, in the first part of the first week, have indicated its great value, particularly when the patients are kept under careful observation, the result at the end of two weeks being found quite as satisfactory as when they remained in bed for the usual ten days, if not more so.

It seems that Dr. Little shaves the vulva (including, presumably, the pubic region) in all cases of labor, and he states that he has not yet found a woman who objected to it, either in hospital or in private practice, when the reason for it had been explained to her. It is certainly to be hoped that the problem of asepticizing the region of the external genitals and the anus will be solved in such a manner as to do away with the supposed necessity of depriving patients of a natural adornment and inducing a period of disagreeable prickliness.

Dr. Little must have been misreported in one particular. He is made to say: "The patient has for the greater part of nine months been under a tremendous strain, which increases as she approaches an ordeal more fatal in its direct consequences than the acquisition of any disease save tuberculosis." Surely he does not really believe that the mortality of childbed exceeds that of any other than tuberculous disease; yet that conviction seems to us to be the obvious meaning of the statement quoted.

THE HENRY PHIPPS PSYCHIATRIC WARD AT JOHNS HOPKINS.

It is a far cry from the stone walled dungeons, the manacles and the whips, the repugnant food, and the generally misguided and cruel treatment of the lunatic a century ago to the psychiatric ward about to be added to the Johns Hopkins Hospital, Baltimore, through a munificent endowment by Mr. Henry Phipps. Through the courtesy of Mr. George Atterbury, the architect charged with the preparation of the plans, we are enabled to present the plans of three of the floors, with a description of the more important features of the building.

THE contrast to old methods is even more marked than if this was to be a brick and stone palace after the style of the hotels that house our recent millionaires, for the whole tone of the new ward is that of a comfortable and even luxurious home. Tiling, iron, and stone are to be used only where absolutely required, and decorated walls and ceilings, artistic electroliers, soft rugs, easy chairs, and lounges, together with books, musical instruments, billiards, and other domestic games will furnish the building with a homelike atmosphere. The theory of nonrestraint is held as far as practicable and all necessary safeguards are ingeniously masked. Iron bars will have vines trained over them and windows will be protected by plants covered with glass shelves. One of the large recreation rooms is fitted with a stage and complete scenery and lighting plant, while an organ is installed upon which to base an occasional orchestral concert. A roof garden from which it is impossible to fall, a large interior court treated as an informal garden with fountains and bay trees, and a private section of the room for special cases will afford plenty of space for outdoor exercise to the patients.

The new ward is situated on the southeastern portion of the Johns Hopkins property between Monument, Jefferson, and Wolfe Streets, and Broadway. To harmonize with the other buildings, it is built simply of dark red brick with slate roof and stone trimmings. The general functions of the building comprise research, educational and clinical departments, and an outpatient department and these are kept distinct. The clinical department is divided for general and private patients; the entire top floor, separated into suites of varying sizes, is devoted to the latter. In the main, the educational and research departments are on the north side, while the clinical departments face south.

The basement, which is well above ground, contains an outpatients' waiting room with toilets for both sexes, four examination rooms, a room for electrical treatment, a class demonstration room, and

rooms for apparatus and storage of records. The first floor has a main entrance, besides separate entrances for patients and students, the administration offices, chemical and clinical laboratories, coat and toilet rooms for men and women, the main vestibule and entrance hall, and waiting rooms for visitors and male and female patients. The second floor has an octagonal library, thirty feet in diameter, a consultation room, and a small research or reading room; the director's suite is on this floor and comprises an anteroom, a secretary's office, and the director's office, private room, and two research rooms. Besides, there is a lecture hall seating 120, a projection room for a stereopticon, a patients' waiting room, a chart room, and a separate stairway for students.

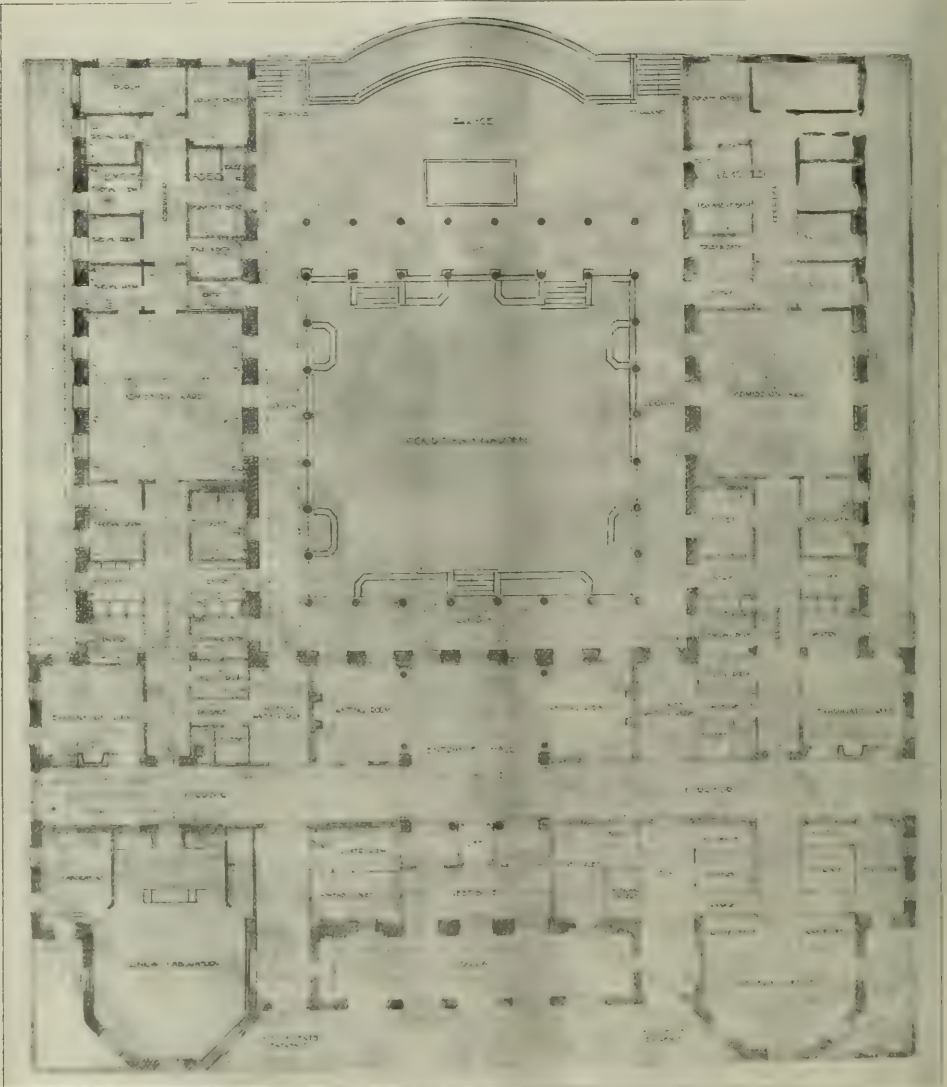
The lecture hall has several novel ideas, including one removable wall which can be replaced by a screen for stereopticon pictures, an apparatus for immediately darkening the room, every possible lighting invention, and an inclined runway over which patients can be quickly transported to the lecturer's stage.

The third floor contains the psychological laboratory with five research rooms and a histological laboratory similarly surrounded.

The fourth floor has positively luxurious quarters for the staff; for the resident physician, a study, sitting room, bedroom and bath; for the first and second assistants, two bedrooms, a common sitting room and bath; for the four junior physicians, four bedrooms, sitting room and two baths. On the fifth floor are elaborate photographing rooms, the animal hospital and research room with wash and feed rooms, besides exercising space for patients of both sexes.

So far we have described only the transverse portion of the building which constitutes the front. The patients' quarters are comprised mainly in two wings which run directly back; each wing houses one sex, and, as they are practically identical, one description will serve for both. In the basement

for excited patients, examination room, cleansing room, toilets, permanent baths, pantries, and special and utility rooms. On the second floor are rooms, nurses' rooms with baths, an examination room, and occupation rooms. The third floor comprises quiet wards, day rooms, special rooms as on

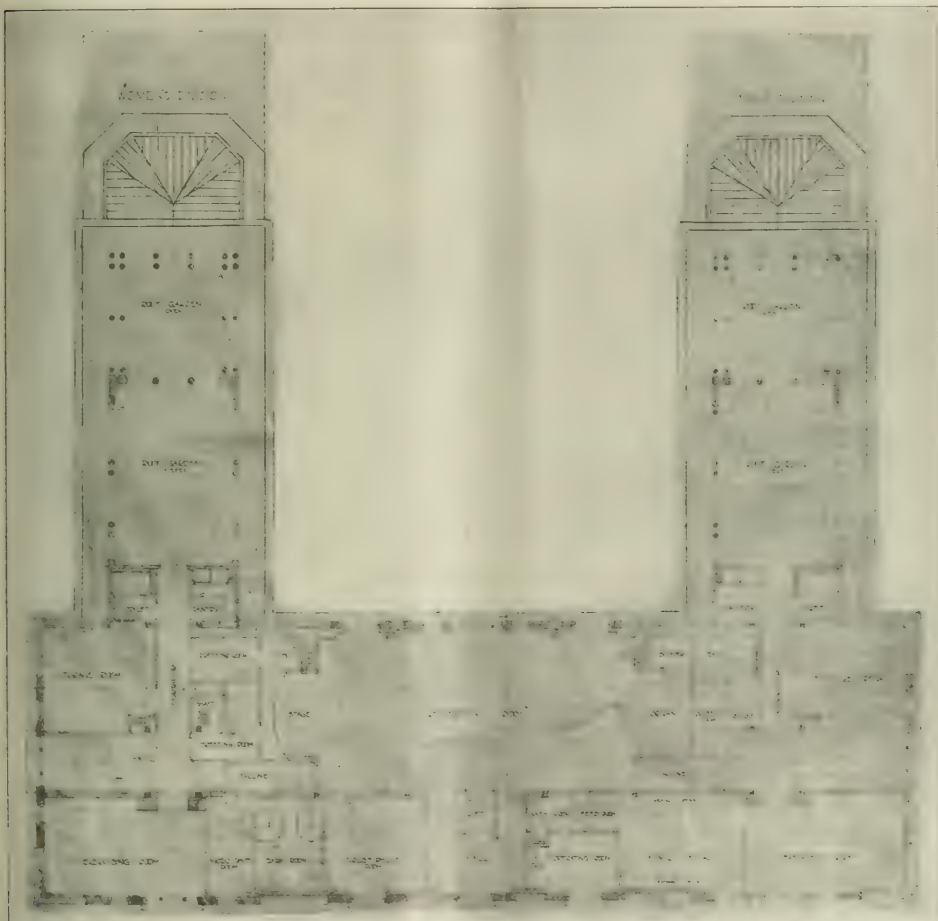


PLAN OF THE FIRST FLOOR OF THE PHIPPS PSYCHIATRIC WARD.

A portion of ward 1 and 2 shown from opposite end illustrating features of the first floor plan. Here are located the general office, the examination and admission rooms, a clinical laboratory, and separate treatment rooms.

wards for semiclosed patients, day rooms, special room, permanent baths, toilet and cleansing rooms, linen and clothes rooms, pantries, utility the second floor, dining rooms, and rooms for special psychological work. On the fourth floor are the private suites for private patients, each suite having

sitting room, bedroom, and bath, while there are single bedrooms with bath on a simpler scale; a sun parlor and day porch with a garden adorn the holes, and the tops of the doors are made semiarched to avoid giving purchase for a possible rope. Lighting fixtures are either out of reach or covered with



PLAN OF THE FIFTH FLOOR OF THE HENRY PHIPPS PSYCHIATRIC WARD.

A well equipped stage and a pipe organ are features of the recreation room on the fifth floor, the greater portion of which is devoted to roof gardens, some covered and some open. Here also are the quarters of the animals and the photographic studio.

fourth floor. On the fifth floor are a large recreation room, with stage, etc., and a roof garden.

The ward will accommodate eighty-four patients. In the modern style there are no angles in the rooms, the doors are dust proof with guarded key-

holes, and the tops of the doors are made semiarched to avoid giving purchase for a possible rope. Lighting fixtures are either out of reach or covered with heavy porthole glass. The "quiet" wards are well padded and perfectly sound-proof, and there are various ingenious architectural devices for securing absolute privacy for noisy or fractious patients.

News Items.

Changes of Address.—Dr. G. A. De Santos Saxe, to 130 West Seventy-first Street, New York.
Dr. B. A. Thomas, to 116 South Nineteenth Street, Philadelphia.

Dr. C. S. Perry, to 469 Fifty-eighth Street, Brooklyn.

A Free Dispensary for outdoor patients was opened on September 1st at the Mount Moriah Hospital New York. Several persons in the neighborhood applied for treatment, and many visitors called to inspect the new department of the hospital.

An Addition to Dixmont Hospital, Pittsburgh.—Plans have been filed for a three story building, to be erected at a cost of \$100,000 as an addition to the hospital. It will be a modern fireproof structure, and will be connected with the old building by bridges.

A New Medical School in Kentucky.—It is reported that plans have been perfected for the establishment of a medical school in Lexington, Ky., which will be a branch of the State University. It is expected that the new college will be opened early this fall.

Scientific Society Meetings in Philadelphia for the Week Ending September 18, 1909.

WEDNESDAY, September 15th.—Franklin Institute.

THURSDAY, September 16th.—Southwark Medical Society; Northeast Branch, Philadelphia County Medical Society.

The Medical Society of the County of Richmond, N. Y., held a regular meeting on Wednesday evening, September 8th, in the Staten Island Academy. The paper of the evening was read by Dr. L. Grant Baldwin, of Brooklyn, on Some Difficulties in the Diagnosis of Intraabdominal Diseases.

Fifty Thousand Dollar Gift Returned to Donor.—The \$50,000 donated by Mrs. Sophronia A. Harrington, of Winchester, Mass., for the erection of a memorial hospital in that town, has been returned to the donor, as the trustees were unable to comply with the conditions on which the gift was made.

The Iowa Health Officers' Association will hold its annual meeting in Des Moines on October 26th, and on the following day the State Board of Health will hold a conference with the health officers and representatives of the local boards of health. Programmes for both meetings will be distributed early in September.

The Geneva, N. Y., Medical Society held its regular monthly meeting on Thursday evening, September 2. Two papers were read, one by Dr. J. C. Knapp entitled Some Interesting Points in Nephritis, and the other by Dr. J. W. Short on the Medical and Surgical Significance of Inducement. An interesting discussion followed.

The National Medical Association, composed of colored physicians, surgeons, dentists, and pharmacists, held its eleventh annual meeting in Boston last week. Officers for the ensuing year were elected as follows: Dr. Marcus F. Wheatland, of Newport, R. I., president; Dr. W. S. Lifton, of Washington, D. C., vice-president; Dr. J. A. Kenney, of Tuskegee, general secretary; and Dr. A. W. Williams, of Chicago, treasurer. The next meeting of the association will be held in Washington, D. C.

Open Air Schools for Tuberculous Children in Washington, D. C.—The proposition of the Board of Education to erect two open air portable school houses for the accommodation of tuberculous pupils of the public schools has been approved by the District Commissioners, and the plan will be carried out, as sufficient funds are already at the disposal of the board. At present there will be only two of these portable schools, one for the white children, and one for the negroes, but others will be purchased later.

New Building for the New York Polyclinic.—The trustees of the New York Polyclinic Hospital have purchased a plot of ground on the north side of Fifth Street and the south side of Fifty-first Street, between Eighth and Ninth Avenues, as a site for a new hospital building which will be the largest in the city. It will be twelve stories high and will cost about \$1,000,000. The new building will be used as the headquarters of the institution and the old building on East Thirty-fourth Street will be converted into an *Hotel* for the *Board*.

The New York Postgraduate Hospital has purchased the three story and basement dwelling, at 308 East Twenty-first Street, on a lot adjoining the Fahnestock Training School for Nurses. Several other properties abutting the hospital at the northeast corner of Second Avenue were acquired recently for the purpose of building an annex.

Typhoid Fever in New York.—Twenty-five inspectors from the Department of Health are at work trying to discover the cause of the outbreak of typhoid fever in the upper east side district of New York, which is causing some alarm among the residents of that section of the city. Milk, drinking water, and food stuffs are all being subjected to tests in a search for typhoid germs. It is stated by the Health Board, however, that there is no cause for alarm, as typhoid fever is not epidemic in the city, an increased number of cases always being expected at this time of the year.

Typhoid Fever was the subject chosen for consideration at the first stated meeting of the season of the Medical Society of the Borough of the Bronx, which was held on Wednesday evening, September 8th. The following papers were read and discussed: The Present Status of Our Knowledge of Immunity in Typhoid Fever, by Dr. William Weinberger; The Clinical Diagnosis of Typhoid Fever, by Dr. Adolph Rostenberg; Diet in Typhoid Fever, by Dr. Warren Coleman; The Treatment of Typhoid Fever, by Dr. Reynold Webb Wilcox. The discussion was opened by Dr. Thomas Darlington.

Typhoid Fever Epidemics.—An epidemic of typhoid fever has broken out in Chester, Pa., among a large number of people who lived in tents two weeks in Twin Oaks, attending the camp meeting. It is said that the outbreak is due to impure drinking water. There has also been another outbreak of typhoid fever in Lancaster, Pa., which is not restricted to any particular district, the cases being scattered all over the city. The Board of Health is making a careful examination of the milk and water supplies. An alarming epidemic of typhoid fever exists in the town of Cobalt, Ont., and great anxiety is felt by the health authorities because of the lack of facilities for fighting the disease.

A Warning to Physicians.—The William Meyer Company, of Chicago, asks us to warn our readers against a man who has been obtaining money from physicians on the false ground that he represents them. In Victoria, British Columbia, where he victimized several physicians, he passed under the name of Amos Cato. He is described as being about 5 feet 6 or 7 inches tall, heavily built, with a very full face, a pasty white complexion, clean shaven, with rather protruding lower lip, and dark brown oily hair. He was well dressed, displayed several diamond rings, and wore a large blue stone in his shirt front. Warrants have been issued for his arrest at Tacoma and Seattle, Wash.

Personal.—Dr. F. M. Bauer, who was for eight years examining physician in the Department of Public Charities of the City of New York, has been promoted by Commissioner Hebbard to the position of deputy superintendent of the New York City Home for the Aged and Infirm, Blackwell's Island. As a consequence Dr. Bauer has retired from private practice.

Dr. Harvey Cushing, of Johns Hopkins University, delivered the William Banks Memorial Lecture at the University of Liverpool on August 4th. His subject was the Pathology and Surgery of Intracranial Tumor.

Dr. Allen J. Smith, for six years professor of pathology in the Medical Department of the University of Pennsylvania, has been appointed dean of that institution, to succeed Dr. Charles H. Frazier, who resigned recently.

The Queen Alexandra Sanatorium, at Davos, will be opened for the reception of patients early this fall. While the institution is national in character, it will welcome patients from all over the world, as it was founded for the benefit of all English speaking nationalities, the only qualifications needed being evidence of medical suitability and of inability to meet the heavier cost of treatment at hotels or private institutions. A donation of £25,000 lately received not only supplied the amount needed to complete the work and open the sanatorium free of debt, but provided means for equipment and future extensions. At present the sanatorium will accommodate fifty-four patients, all in single rooms, but public rooms are planned which will furnish accommodations for one hundred and twenty patients. The sanatorium is under the patronage of Her Majesty Queen Alexandra.

The Association of Military Surgeons of the United States will hold its next annual convention in Washington, D. C., on October 5th to 8th. In addition to a large representation of prominent Army, Navy, National Guard, and Public Health and Marine Hospital Service officers, several distinguished foreign physicians will be present, including Sir Alfred Keogh, director general of the British Royal Army Medical Corps, and Inspector General James Porter, of the Royal Navy Medical Corps. The convention will be held in the New Willard Hotel.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of the new cases and deaths reported for the two weeks ending September 4, 1909:

	August 28-5		September 4-11	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	497	149	539	142
Diphtheria	156	14	185	11
Measles	167	9	116	4
Scarlet fever	167	5	70	6
Smallpox	58	5	70	6
Varicella	4	1	10	1
Typhoid fever	158	14	181	11
Whooping cough	44	13	24	11
Cerebrospinal meningitis	2	9	0	8
Total	1,073	213	1,128	142

Osteopaths May Not Issue Death Certificates in New York.—The Court of Appeals of the State of New York rendered a decision some months ago to the effect that a licensed osteopath was a physician under the existing sanitary code and was authorized to grant death certificates for burial permits. In handing down this decision the Court suggested that the Health authorities might amend the sanitary code so as to distinguish between physicians. Following this the State Board of Health last March adopted an amendment to the code requiring death certificates to be signed by physicians having the degree of doctor of medicine. Dr. Charles F. Bandel, an osteopath residing in Brooklyn, asked for an injunction restraining the board from requiring the degree of M. D. pending a final decision of the matter in the higher courts. Justice Crane in denying this injunction said that "the intimation of the Court of Appeals is so pointed that I could not hold otherwise than that this restriction or regulation of the Board of Health is legal."

The East New York Dispensary, at 131 Watkins Street, Brooklyn, is being rebuilt, at a cost of \$25,000. The new building will be equipped with all modern improvements and will accommodate fifty thousand patients. A year and a half ago the staff of the dispensary was reorganized, with the result that the attendance has increased from four thousand to twenty-three thousand. There are at present thirty physicians on the staff, the following being chiefs of departments: Dr. Jacob Londoner, medical department; Dr. Adolph Bonner, surgical department; Dr. George I. Miller, gynecological department; Dr. Marcus J. Levitt, eye, ear, nose, and throat department; Dr. Le Grand Kerr, children's department; and Dr. Victor H. Pentlage, skin and genitourinary department. Dr. Leon Louria is president of the medical staff. Dr. Adolph Bonner is vice-president, and Dr. Marcus J. Levitt is secretary. All applications for positions in the new dispensary should be addressed to Dr. Marcus J. Levitt, 262 Vernon Avenue, Brooklyn, N. Y.

Society Meetings for the Coming Week:

MONDAY, September 13th.—Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, September 14th.—Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay Medical Society.

WEDNESDAY, September 15th.—Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, September 16th.—German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo.

FRIDAY, September 17th.—Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

The Health of Chicago.—During the week ending August 28, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 48 cases, 12 deaths; scarlet fever, 52 cases, 4 deaths; measles, 30 cases, 1 death; whooping cough, 73 cases, 6 deaths; tuberculosis, 77 cases, 55 deaths; pneumonia, 13 cases, 41 deaths; typhoid fever, 44 cases, 3 deaths; chickenpox, 5 cases, 0 deaths; erysipelas, 3 cases, 0 deaths. The deaths from other important causes were: Cancer, 29 deaths; nervous diseases, 16 deaths; heart diseases, 42 deaths; apoplexy, 14 deaths; Bright's disease, 34 deaths; diarrhoeal diseases, under two years of age, 175 deaths; diarrhoeal diseases, over two years of age, 23 deaths. There were 3 deaths from sunstroke, 6 suicides, and 47 deaths due to accidents. The total number of deaths during the week was 619, in an estimated population of 2,224,400, corresponding to an annual death rate of 14.51 in a thousand population. The total infant mortality was 271; 196 under one year of age, and 75 between one and five years of age.

The American Association of Obstetricians and Gynecologists will hold its twenty-second annual meeting at the Hotel Anthony, Fort Wayne, Ind., on Tuesday, Wednesday, and Thursday, under the presidency of Dr. William H. Humiston, of Cleveland. There will be three sessions on Tuesday, two on Wednesday, and the last session will be held on Thursday morning, closing at 1:30 p. m. with the induction of the officers elect. On Tuesday evening the annual address of the president will be delivered by Dr. Humiston, his subject being the Gilliam Operation for Retrodisplacement of the Uterus. This address will be preceded by an address by Dr. Ralph Waldo Lobenstein, of New York, on Rupture of the Uterus during Labor. The programme includes a long list of papers on subjects of practical interest, and the list of authors includes the names of leaders in the field of obstetrics and gynecology. The officers are as follows: President, Dr. William Henry Humiston, of Cleveland; vice-presidents, Dr. James Edgar Sadler, of Poughkeepsie, and Dr. John D. S. Davis, of Birmingham; secretary, Dr. William Warren Potter, of Buffalo; and treasurer, Dr. Xavier Oswald Werder, of Pittsburgh. Dr. Miles F. Porter, 207 West Wayne Street, Fort Wayne, is chairman of the committee of arrangements, and all inquiries relating to the meeting should be addressed to him.

The American Hospital Association.—The eleventh annual conference of this association will be held at the New Willard Hotel, Washington, D. C., on Tuesday, Wednesday, Thursday, and Friday, September 21st to 24th. The first session will be held on Tuesday, at 11 a. m. Rear Admiral P. M. Rixey, Surgeon General of the United States Navy, will deliver the address of welcome, which will be followed by the president's address, by Dr. John M. Peters, superintendent of the Rhode Island Hospital, Providence. A splendid programme of papers has been provided on subjects relating to hospital management, and among those whose names appear on the programme are the following: Lieutenant Colonel William H. Arthur, of the Medical Corps of the United States Army; Mr. D. T. Sutton, editor of the *International Hospital Record*, Detroit; Dr. W. Gilman Thompson, of New York; Homer Folks, Esq., secretary of the New York State Charities Aid Association; Dr. Frederick Brush, superintendent of the New York Postgraduate Medical School and Hospital; Dr. Thomas Howell, superintendent of the New York Hospital; Dr. Sarasen, of Berlin; Dr. S. S. Goldwater, superintendent of Mount Sinai Hospital, New York; Dr. R. W. Corwin, superintendent of the Minnesota Hospital, Pueblo, Colorado; Dr. Charles P. Emerson, superintendent of the Clifton Springs, N. Y., Sanatorium; Bertrand E. Taylor, Esq., of Boston; Rear Admiral A. Ross, of the United States Navy; and Dr. R. M. Phelps, assistant superintendent of the Rochester State Hospital, Rochester, Minn. On Thursday morning Dr. Arthur B. Ancker, superintendent of the City and County Hospital, St. Paul, Minn., and first vice-president of the association, will conduct a "Question Box," and the Thursday evening session will be devoted to the report of the special committee on the training of nurses. The last session, which will be held on Friday morning, will be devoted to the reports of the various committees of the association. According to the programme no sessions will be held in the afternoon. Programmes and further information regarding the meeting may be obtained by writing the secretary, Dr. W. L. Babcock, Grace Hospital, Detroit, Mich.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 20, 1909.

1. Heart Disease in Infancy and Childhood.
By JOHN LEVETT MORSE.
2. Distinctive Diagnosis of Cerebellar Tumors.
By ERNEST JONES.
3. Work for Patients as an Immediate and Ultimate Therapeutic Factor.
By FREDERICK L. HILL.
4. Studies in Psychopathology.
By BORIS SIDIS.

1. Heart Disease in Infancy and Childhood.—

Morse remarks that there are certain general peculiarities in the physical signs of cardiac disease in infancy and childhood. Prominence of the præcordia occurs frequently as the result of the pressure of the enlarged heart on the unossified sternum and costal cartilages. The earlier the onset and the longer the duration of the disease, the more marked is this deformity. Rickets also favors its development. Murmurs are often heard over large areas. Thrills are more common than in later life. Cardiac disease in childhood also interferes with the growth of other organs and causes a general retardation of development. On the other hand, however, the tendency to recovery is greater in early than in later life because of the reparative powers of growth. The diseases of the heart in infancy and childhood may be divided into congenital and acquired. Certain main points are of importance in the diagnosis between these two conditions. The presence of the evidences of cardiac disease in infancy or early childhood without the history of some disease in the past likely to cause cardiac disease is strong evidence in favor of a congenital lesion. Cyanosis and clubbing of the extremities without heart murmurs or other evidences of disease sufficient to account for them, and cyanosis and clubbing of the extremities without signs of venous congestion in other organs, are strong evidences in favor of a congenital against an acquired lesion. So, also, are loud murmurs without enlargement of the heart. Diastolic murmurs are practically never congenital. A combination of physical signs not consistent with those usually found in the various forms of acquired cardiac disease is strongly suggestive of a congenital lesion. The presence of other congenital anomalies favors the diagnosis of congenital disease, and the presence of the characteristic signs of the various congenital lesions make the diagnosis almost positive. The diagnosis of congenital lesions from anæmic or functional murmurs is sometimes necessary because of the common location of functional murmurs at the base. The general teaching to the contrary, these murmurs are not at all uncommon, even in infancy. When the murmurs are anæmic, there is no enlargement of the heart and no thrill. There is often, however, a venous hum and always the evidences of the causative anæmia. The author then takes up the congenital diseases of the heart, or to be more correct, the anomalies and malformations of the heart and great vessels, which may be divided into three classes: Persistence of fetal conditions, interference with normal development, and fetal endocarditis. Finally he speaks of myocarditis, functional disorders of the heart, acute pericarditis, and chronic adhesive pericarditis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 4, 1909.

1. Preservatives in Food Materials, Their Detection and Effect.
By D. H. BERGEY.
2. The Parasitology of Syphilis.
By F. G. HARRIS.
3. Regeneration of the Cornea.
By MEYER WIENER.
4. The Operative Treatment of Glaucoma by Cyclodialysis.
By ARNOLD KNAFF.
5. The General Practitioner as an Anesthetist.
By DOUGLAS C. MORIARTY.
6. The Röntgen Rays in Dentistry.
By G. F. PFÄHLER.
7. Reconstruction of the Bile Ducts.
By ARTHUR G. SULLIVAN.
8. Experience in Expression of Cataracts in Capsule by Smith Method.
By D. W. GREENE.
9. The Expression of Cataract in Its Capsule. With Report of Forty Operations.
By H. V. WÜRDEMANN.

1. Preservatives in Food Materials.—Bergey has made a large series of tests to ascertain with what degree of certainty the presence of preservatives may be detected in food by means of the anti-fermentative action of the preservatives on trypsin. The studies of Bliss and Novy show that of the ordinary digestive ferments trypsin is injured to the greatest extent by formaldehyde, aside from the effect of the preservative on the food constituents themselves. These results are confirmed by those of Sheperd, who found that nitrous acid affected pancreatic digestion in higher dilution than it did the other ferments which he employed. For these reasons Bergey regarded trypsin as a delicate indication of the presence of preservatives in food. The tests for the detection of preservatives in food were carried out by the addition of small amounts of the food to a definite volume of a sterile solution of casein and determining the inhibiting influence of the preserved food on the tryptic digestion of the casein by the addition of a few drops of an alcoholic solution of acetic acid to the mixture at the end of a period of digestive action. The evidence which scientific investigators have collected all shows that the addition of chemical preservatives to food substances is injurious to the consumer in several different ways: 1. The use of preservatives permits the use of food substances that are of inferior grade or that are not perfectly fresh. 2. The food preservatives when taken into the body must be eliminated subsequently; this operation entails extra labor on some special organ or organs, and this extra labor will sooner or later lead to direct injury. 3. Many of the food preservatives are direct poisons, and their constant ingestion induces chronic poisoning with its concomitant effects. 4. The food preservatives have an anti-fermentative effect on the different digestive ferments, especially on trypsin, and thus retard digestion and interfere with assimilation. 5. The food preservatives act on the food substances in such a manner as to render them less easily digested or even wholly indigestible, and make it necessary for the body to deal with partly digested food or deprive it altogether of nutrition, especially of nitrogenous food. 6. In consequence of the use of food preservatives digestion and assimilation are interfered with, and the general nutrition of the body suffers through organs that are overtaxed and injured in attempting to eliminate the poisonous chemical substances, and in attempting to deal with imperfectly split food substances that may be in such a state as to preclude their utilization, especially on

account of the lack of digestive ferments, because of the loss entailed through the destructive action of the food preservatives. The author concludes: "We should not allow the greed of unscrupulous manufacturers and dealers to overrule our knowledge of the evil effects of the use of food preservatives. The medical profession owes it to itself to uphold the laudable position assumed by Dr. Wiley in his crusade against food adulteration, and any course which falls short of this will stultify the profession in the eyes of educated humanity of to-day and for all time to come."

2. **Parasitology of Syphilis.**—Harris remarks that as seen with the dark ground illuminator the *Spirochæta pallida* is so characteristic that there is absolutely no difficulty in identifying it. The chief characteristics are as follows: 1. **Size.**—The spirochæta vary in length from 7 to 21 micra, being from one to three times the diameter of a red blood cell. It is not uncommon to see the organism longer than this. 2. **Shape.**—They are seen to consist of an extremely slender thread closely wound in a corkscrew form, the windings being very acute. In fresh preparations the windings are absolutely regular, but as the specimen gets older the organism changes form, the most frequent change being an irregularity or obliteration of the windings in the central portion. 3. **Position of Ends.**—The ends of the pale spirochæta are sharp and terminate on the periphery of the spiral and not in the centre as in the other forms of spirochæte. This peculiarity is very characteristic, but is seen only when the organism rotates on its long axis. 4. **Motility.**—When the specimen is freshly prepared the organism is very active and possesses the following motions: (A) A rotation on its long axis in either direction; this motion is very rapid, but not necessarily accompanied by a change of position; as the specimen gets older this motion grows less. (B) It progresses from place to place, but not so rapidly as the other forms of spirochæte commonly met. (C) It has a quick and spasmodic bending or twisting motion. This form of movement increases as the specimen gets old, and at times one sees an organism bent in the form of a circle, resembling somewhat a crenated red blood corpuscle. It is not uncommon to find two organisms joined end to end. Again, one sees two or three organisms lying side by side. The number of organisms found varies in the different lesions. They are most numerous in chancres, condylomata, and mucous patches, and vary from two or three in a field to sixty or eighty. Patients who have received some treatment show fewer organisms than the untreated ones. A few days' local treatment with calomel or other mercurial preparations causes a marked diminution in the number present in the chancre, although they are very numerous in the enlarged inguinal glands.

7. **Reconstruction of the Bile Ducts.**—Sullivan describes the operative technique which he has followed in eight dogs thus: The procedure depends on the use of a rubber tube, at one end of which a rubber sponge, or an ordinary surgical sponge, is securely attached. The tube should be approximately the size of the common bile duct, and the diameter of the sponge should not be greater than one half the diameter of the duodenal lumen. The length of the tube depends on the length of the bili-

ary passage to be reconstructed. The common bile duct is exposed, ligated, and cut across just above the ligature. Two plain catgut No. 1 sutures are introduced in the opposite edges of the gaping duct, and in the rubber tube, in such a manner that when the sutures are tied down, the knots will be on opposite surfaces of the duct, and the tube drawn within the lumen of the duct a distance of approximately 1 cm. The tube is then applied to the anterior surface of the duodenum, and at approximately every inch is sutured to the duodenal wall with fine catgut. At a point about opposite the ampulla of Vater, an incision is made in the duodenum, just large enough to allow the insertion of the sponge and attached tube into the lumen of the intestine. The sponge is shoved down inside the intestine, and the opening in the duodenum is sufficiently repaired so that the cut edges snugly encircle the tube. At this point—where the tube penetrates the intestinal wall—a No. 1 plain catgut suture is inserted, taking a good bite of duodenum and a small bite of the tube, so as not to encroach on the lumen of the tube. This suture does two things—it prevents the peristaltic pull on the sponge from tearing the two duct sutures free, and it minimizes biliary colic, as has been demonstrated in dogs. The duodenal walls are then sutured over the tube so that for about 2 cm. before the tube penetrates into the intestine, it runs in a canal made by overlapped duodenum. The great omentum is then drawn up, and a suitable area selected with which to cover the exposed portion of the tube. This area is traumatized by slightly drawing a dry sponge over it a few times, and similar friction is applied to the duodenum and gastrohepatic omentum on either side of the tube. The omentum is then placed so as to cover the tube and extend beyond it a centimeter or two in all directions, and is held in position by several fine catgut sutures.

MEDICAL RECORD

September 1, 1909.

1. Cancer in Man and Animals, By E. F. BASHFORD.
2. Yellow Fever Prophylaxis in Cuba, By ARISTIDES AGRAMONTE.
3. A Further Contribution to Our Knowledge of Intestinal Dyspepsia, By MAX EINHORN.
4. Forensic and Clinical Aspects of Transitory Frenzy, By HARRIET C. B. ALEXANDER.

1. **Cancer.**—Bashford gives a review of our knowledge of the cancer question. Cancer is not limited to white men. The liability to cancer of all races of mankind, and of all vertebrates, even when living in natural conditions, has been established as a fact. Where the disease was said to be rare, *e. g.* in Japan, excellent statistics exist showing over 25,000 deaths from cancer annually. Carcinoma of the lips, tongue, cheek, breast, uterus, etc., are as common in hospitals in England as throughout Hindustan. Carcinoma is found in savage races. But carcinoma and sarcoma occur not only throughout the human race but also throughout the other vertebrates, bird, frog, fish (trout), mouse, etc. The lesions can now be reproduced experimentally. The number of deaths assigned to cancer has increased from year to year in practically all countries. This increase is made to appear most alarming when it is taken up as a national problem, *e. g.* in England.

Germany, or the United States, without due regard to the universality of the phenomenon. When due regard is paid to its universality in man and in animals, to the varying value of the data used for statistical purposes in different countries, and in the same country at different times, as well as to the varying accuracy of the statistical methods employed, he very much questions if those persons who have made exaggerated statements to the effect that the recorded increase of cancer represents a true and relatively increased liability to it, have any excuse whatsoever for enhancing the reasonable anxiety of the lay public. The question of the hereditary transmission of cancer has not been settled either one way or the other for man. Our author summarizes that from a survey of cancer in man and animals the following conclusions stand out. The first confirms that at which Waldeyer arrived in 1867 from his studies on man; the cells of vertebrates, *e. g.* of the skin, possess or acquire some property or properties in common, in virtue of which they may be transformed into cancer cells under what appear to be very different circumstances. The second is the application of the law of age incidence to vertebrates generally, irrespective of the absolute duration of life. Third, the disease originates in a circumscribed area. Fourth, when all due weight is given to this origin in cells within a circumscribed area, the relation between these cells and the organism as a whole is of moment. To these conclusions the experimental reproduction of all the lesions of cancer has enabled us to add many others. At this early date it is sufficient to have thrown a little light on four aspects of the aetiology of cancer. First on the constitutional conditions favorable and unfavorable for the growth of cancer cells. Second, on how cancer cells after having passed into a phase of low proliferative energy may reacquire high powers of proliferation and of resistance to changes in their environment. Third, on the possible nature of the indirect association irritants have to the disease. Fourth, the cancer cells, even when of the same organ, have been resolved into a larger number of varieties able to maintain their individuality than was previously conceivable. These varieties are of the nature of specializations or differentiations unrecognizable by histological methods. Experiment has put many older explanations out of court. No evidence has been obtained in favor of an hereditary, congenital, or embryonic explanation of aetiology, nor has any analogy been discovered with known forms of infective disease.

3. **Intestinal Dyspepsia.**—Einhorn is not in favor of eliminating the food stuffs, that are apparently poorly digested, but only of permitting a limited amount of these substances. In intestinal fermentation dyspepsia (disturbance of starch digestion) H. Meyer and also Schmidt have lately advised the elimination of carbohydrates. In these chronic conditions he does not consider it advisable to forbid entirely a whole group of food stuffs. It is better to give it in decreased amounts. It is also advisable to give drugs which will facilitate the utilization of the food stuffs, whose digestibility is diminished in that particular patient. It is self understood that our principal aim must be directed not to drugs but to a suitable arrangement of the diet.

In dyspepsia intestinalis universalis fluid and semi-fluid diets are indicated, milk, kumyss, raw and soft boiled eggs, meat powder, sanátogen, or similar preparations, soups, fine gruels, and leguminous vegetables in mashed form, crackers or zwieback, tea, cacao, malt, and beer. As soon as the patient improves, the diet should be increased by adding fish, rice, mashed potatoes, and later white bread, scrambled eggs, and a small quantity of tender meats. After a rational treatment the bead test very soon shows a better result. In the cases of partial intestinal dyspepsia the food stuff that is not so well digested should be reduced and should be given in finely subdivided form. Just as in functional diseases of the stomach, a generally invigorating treatment is of great importance also in intestinal dyspepsias (where no organic trouble is present, as ulcers, cancer, etc.). Thus hydrotherapeutic and electrotherapeutic measures are of value. Climatic cures, life in the open air, free from care, will be of great assistance in accomplishing a considerable improvement or an entire restoration to health.

BRITISH MEDICAL JOURNAL.

August 21, 1909.

1. The Infection of Consumption, By C. THEODORE WILLIAMS.
 2. Three Demonstrations on Congenital Malformations of the Palate, Face, and Neck, By Professor ARTHUR KEITH.
 3. Light, Pigmentation, and New Growth, By WILFRED WATKINS-PITCHFORD.
1. **The Infection of Consumption.**—Williams takes up the various sources of infection in pulmonary tuberculosis. 1, Husband and wife infection. In one out of three cases where consumptives married three wives, one wife survived, and out of nine cases where consumptive husbands married twice, the last wife survived in three instances, giving a total of thirteen husbands to thirty-one wives, of whom twenty-seven died and four lived in apparently good health. It would appear that the infecting husbands were often in an early stage of the disease when infection took place, and some survived their wives by many years. 2, Infection through the air passages by inhalation. Though it is improbable that inhalation is the principal means of lung infection, there is every likelihood of some infection taking place through the upper air passages, and that the bacilli enter the lymphatics of the mouth and infect the lymphatic glands of this region and the tonsils, which are often the seat of tubercle. The frequent occurrence of strumous submaxillary and cervical glands may be due to this cause. 3, Infection through the intestines. The most important item in this form of infection is that of milk and meat, and after the conclusive evidence of the British Royal Commissioners, confirmed by numerous other authorities, there can be no longer any doubt as to the danger to the human body, and especially to children, from bovine tubercle bacilli contained in milk. The danger of infection from the meat is not so great. 4, Infection through the skin and mucous membranes by wounds. This is not a common method of infection, but sundry cases are on record which prove its possibility and indicate the undoubted danger from that source. 5, Hospital infection. The statistics our author refers to do

not testify to much danger of infection to those who have the care of consumptives, but show that with proper precautions such service is quite safe. At the same time occurrence of tuberculosis among the porters, especially among those who handle the sputum, demonstrates where the true danger lies, and inculcates the importance of dealing effectually with this element of danger. He concludes that ingestion of tuberculous material by the intestines is the commonest, inhalation by the air passages comparatively rare, except that which occurs in the upper air passages, affecting the lungs through the lymphatics. Infection through wounds of the skin and mucous membrane is not common, but occurs among those who handle sputum and other tuberculous material where proper precautions are omitted. Infection by coition, though it occurs occasionally, is rare. Finally, all infection from consumptive patients can be avoided if the well recognized precautionary measures are adopted and carried out thoroughly.

3. **Light, Pigmentation, and New Growth.**—Watkins-Pitchford observes that cancer appears as an unregulated process of growth, the possibility of which has probably existed from the times of man's earliest ancestors. The process will be most fruitfully investigated when it is considered as one to which the whole community of metazoan life is liable. He concludes that the external pigmentation of animals is, primarily, but one of several agencies serving to protect the enclosed tissues from excess of illumination, that the pigmentation of certain internal tissues assists in controlling and directing the multiplication of those cells which habitually undergo fission, and that the "intention" of the particular color selected for the blood of the higher vertebrates is similar to that with which we make use of ruby glass in the window of a photographic dark room. The favorite color scheme of the animal kingdom comprises that which will best arrest the more actinic rays of the sunlight, and is represented by the series black, brown, red, orange, and yellow. This scheme, is reproduced, in miniature, in the races of mankind—with the striking exception of the white man. The production of pigment in response to increase of illumination is a vital and not a physical process, and is probably an inherent reaction to provide against some consequence dangerous to the organism. Reflecting and dispersing surfaces, pigment, scales, feathers, hair, posture of body, and light avoiding habits are among the agencies which protect the tissues of the animal body from excess of illumination. The protecting agencies in man are limited to the pigmentation of his skin. His erect attitude causes him to present the ventral surface—which has for countless ages been directed downward—to direct illumination. In the matter of protection from light man stands isolated in the domain of biology. The white man is the last link in a chain, almost interminable in length, of pigment controlled and pigment protected creatures, and—without hairy coat and without color—he is fitted only for a nocturnal existence. It seems probable that no other animal in its natural state exposes its body so constantly to bright daylight and direct sunlight as does civilized man. We may look to find a relative increase of liability to cancer associated with a relative decrease in pigmentation. His main

proposition is that cancer is the result of the loss by the cell of its "instinct" for orderliness in multiplication, and that this "psychosis" of the cell is usually consequent upon undue actinic stimulation. The author then takes up the specially frequent localization of cancer, mammary glands in women, pyloric region of the stomach, the bladder, the face, kidneys, femoral region, etc. Cancer houses usually appear to be unwholesome dwellings, often affording special facilities in their immediate neighborhood for the irradiation of their anæmic inhabitants. The increase of cancer within the last seventy-five years is perhaps due to diminished protection from light and increased exposure to illumination. Woolen garments have been largely replaced by cotton, and black and brown clothes by those of a light color. Narrow streets and dark houses are no longer tolerated, and suburban life has largely replaced that of the city. Artificial illumination has become greatly more actinic in its character. The habit of snuffing has yielded to the vastly more prevalent usage of smoking tobacco by means of a pipe. A manifest deduction from his principles is that cancer may be prevented by efficient protection of the body from light. Natural protections, such as hair upon face, to be encouraged. The clothing to be absolutely light proof. The ventral surface of the thorax and abdomen to be specially protected. The tobacco pipe to be discarded at thirty-five. The essential difference between a simple (pathological) hyperplasia and a malignant hyperplasia is perhaps a psychic one—a question of inheritance or noninheritance of orderly instincts by the principal actors. The sites of selection by cancer are also common sites for simple hyperplastic lesions. Prevention of irradiation may possibly obviate both disorders.

THE LANCET.

August 21, 1909.

1. The Present State of Our Knowledge of the Bacteriology and Pathological Anatomy of Leprosy,
By J. M. H. MACLEOD.
 2. Malformations of the Heart,
By ARTHUR KEITH.
 3. The Early Signs of Rheumatism of the Heart,
By A. M. GOSSAGE.
 4. Five Cases of Tumor of the Large Intestine simulating Disease of the Uterus or Uterine Appendages,
By VICTOR BONNEY.
 5. A Case of Henoch's Purpura Associated with Angioneurotic Edema,
By ALEXANDER DON.
 6. Antipyroid Vaccination with Attenuated Live Cultures,
By ALDO CASTELLANI.
 7. The Results of the Use of Fibrinolysin in Cases of Fibrous Contraction,
By ROBERT H. STRONG.
 8. An Unusual Type of Stomatitis in an Infant,
By A. H. BREHAUT.
 9. Motoring Notes,
By C. T. W. HIRSCH.
1. **Leprosy.**—MacLeod delivered an address on the present state of our knowledge of the bacteriology and pathological anatomy of leprosy before the second international scientific congress on leprosy held at Bergen, August 16th to 19th. He says that the researches of the last twelve years, since the first Lepra Congress, have only more firmly established the lepra bacillus of Hansen as the specific cause of leprosy; although up to the present time all the postulates of Koch have not been fulfilled by it, yet the fact that it occurs universally in leprosy in all its forms, that all the symptoms of leprosy can be explained as the direct or indirect result of a pathological process produced by it, that it is ab-

sent in all other morbid entities, and that it possesses characteristics which distinguish it from all other microorganisms, render its position as the leprosy exciter as unassailable as that of the plasmodium of malaria or the spirillum of relapsing fever. The knowledge of the morphology of the bacillus has been advanced of late by the introduction of special staining methods to demonstrate the young homogeneous bacilli, the old, granular and dead bacilli, the resistant fat in the bacilli, and the fat in the gloea which holds them together. By these methods it has been shown that a large proportion of the bacilli in the tissue are dead, that even in young, newly formed lepromata dead bacilli occur, while in older lesions the majority of the bacilli are dead. The classification of the lepra bacillus is a matter for discussion at the present time. Until recently the bacillus was believed to belong to the class of schizomycetes, but the finding of a cladothrix arrangement by Barranikow and others, and of branching forms like actinomycetes, have rendered it probable that it belongs to the class of the streptotrichæ. In the bacilli small spheres have been noticed, and have been described as "spores," but the evidence that they are true spores is not conclusive. Up to the present time no lower animal has been found which is susceptible to leprosy. An immunizing serum has not yet been obtained, and all attempts to extract from lepromata a substance which would produce in leprosy patients a reaction analogous to that produced by tuberculin in tuberculous patients have been unsuccessful. It is a well known fact that leprosy patients may react to the old tuberculin, but this reaction is of comparatively little significance, as individuals may react to the old tuberculin without being tuberculous. Leprosy patients also react to the products of other microorganisms. The Carrasquilla serum method has not fulfilled its promise, and the results from it have been so disappointing that it has been practically abandoned. The path of entrance of the lepra bacillus is a point of importance with regard to the prophylaxis of the disease, but it is still *sub judice*. It would seem most probable that the bacillus may gain entrance in various ways. Probably the most common mode of invasion is via the nasal mucosa and upper respiratory tract. This view is corroborated by the frequency with which nasal symptoms form one of the earliest manifestations of the disease, such as rhinitis, chronic coryza, ozæna, epistaxis, lepromata in the nasal mucosa, and the presence of lepra bacilli in the nasal discharge. The lepra bacilli may also gain entrance via the mouth and infect the tonsils, and they have been found in the sputum. With regard to the alimentary tract being a path of infection, the evidence at the present time is less conclusive. Nothing suggestive of an initial lesion producing definite symptoms has been located there, nor has the bacillus been found in food stuffs, except in the human milk. The invasion of the bacilli may take place through the skin, especially when the stratum corneum has been abraded by traumatism, or its resistance lowered by some form of dermatitis. The genital organs may also be the means by which the bacillus gains entrance, and in this case the infection probably takes place from lepromata situated on the penis or in the

vagina. Although the testicles are frequently involved there is no distinct evidence of infection from the semen. Congenital leprosy has not been proved to occur, and in this the disease shows a strict parallelism with tuberculosis, for infants of leprosy parents are not born with leprosy, but may become infected subsequently as a result of a hereditary weakness or predisposition and an existence in an environment in which contagion is liable to occur. After gaining entrance the lepra bacilli may be found widely distributed throughout certain of the tissues of the body. They may occur in the skin, eyes, mucous membranes, lymphatic glands, viscera, and peripheral nerves. They are absent from the muscles, bones, and joints. They do not occur in physiological secretions unless pathologically contaminated. According as the bacilli show a special predilection for the peripheral nerves in contradistinction to a more general invasion of the tissues with the formation of nodules or lepromata in the skin and viscera, so the two great types of the disease are produced—namely, the maculoanæsthetic and the nodular types.

2. **Malformations of the Heart.**—Keith, in his third Hunterian Lecture, speaks of the absence of the septum ovale, abnormal foramen in the posterior part of the intraauricular septum, premature closure of the foramen ovale, abnormal septum in the left auricle, interbulbar or infundibular foramina, interventricular foramina, irregular interventricular foramina, atrophy of the left auricle, hearts with one ventricle, and development of the interventricular septum. He has thus brought to light the fact that there is buried in the heart an unrecognized element which is more frequently malformed than any other part of the heart; it has helped to demonstrate that the left auricle is dual in its composition.

3. **The Early Signs of Rheumatism of the Heart.**—Gossage says that, while pericarditis gives the usual well recognized signs of its presence, recent endocarditis causes no physical signs whatever. Affections of the myocardium in rheumatism may be divided into the inflammatory and the toxic. Inflammatory lesions cause a loss of tone in the muscle which surrounds the mitral valve, allowing of mitral regurgitation. Thus an apical systolic murmur is the sign of rheumatic myocarditis, and is, indeed, the only sign of inflammation of the heart apart from pericarditis. In the majority of cases the presence of such a systolic bruit is diagnostic of myocarditis, but in a small minority a regurgitant murmur may result from general dilatation without any inflammation. Poisoning of the heart muscle in rheumatism causes a general dilatation of the heart and sometimes a mitral diastolic murmur. Dilatation may or may not be associated with inflammation of the myocardium, but the diastolic murmur may be taken to imply an absence of myocarditis at the time it is heard. As far as the immediate welfare of the patient is concerned the toxic action of rheumatism is more important than the inflammatory, since it is to the consequent failure of tonicity and contractility that death during an attack is due. For his future welfare the inflammatory lesions become of chief account. Myocarditis is probably always associated with endocarditis, so that there is danger of permanent damage to a valve and the inflammation in

the muscle itself may lead to such local damage that tone is never regained, leaving a permanent widening of the orifice. It is probable that the muscle may sometimes completely recover both from the poisoning and the inflammation, but in other cases the muscle never again becomes healthy after their disappearance. Such occasional permanent damage to the muscle by the toxine would explain the different behavior of different hearts after rheumatism. In some hypertrophy readily takes place and there is a ready compensation for valvular lesion, whilst others rapidly fail. Again, some hearts respond readily to drugs like digitalis, whilst others are feebly, or not at all, affected.

LA PRESSE MEDICALE.

July 3, 1909.

1. Infection of the Blood by Bacteria of the Intestines.
By M. GARNIER and L. G. SIMON.
2. Acute Appendicitis or Strangulated Hernia.
By AUGUSTE BROCA.
3. The Tendency of Cancer to Spontaneous Cure.
By R. ROMME.

1. Infection of the Blood by Bacteria of the Intestines.—Garnier and Simon have found in all the cases which they have observed, man as well as animal, that the bacteriæmia is always circumspect. Among the microbes found in the blood the anaerobic were more frequent than the aerobic. In all cases with bacteriæmia the anaerobic microbes were found, sometimes also the aerobic, but never were aerobic microbes alone. A anaerobic microbe, resembling the *Bacillus perfringens*, was found most often, while the colon bacillus was never observed.

July 7, 1909.

Vomiting from Chloroform, By P. BLANLUET.

Vomiting from Chloroform.—Blanluet says that the vomiting from chloroform anaesthesia is seldom found in children, often in adults, and in females more frequently than in males. It is not only annoying to the patient but also impairs the solidity of the sutures. Postanæsthetic pneumonia and bronchitis are caused more often than is generally accepted, by solid or fluid particles inhaled during vomiting. Many early fatalities after chloroform anaesthesia are due to the nausea; the closing of the glottis accompanying the retching imprisons in the body an excessive quantity of chloroform, the amount of carbon dioxide is increased, while the amount of oxygen is decreased. The vomiting also weakens the patient. The author then discusses the theories advanced to explain the pathogenesis. The vomiting is a reflex action, the centre of which is situated in the medulla oblongata and is influenced by various impressions; thus originates the nervous, the gastric, and the toxæmic theories. The treatment proposed is according to the theory as to the ætiology held by the operator. But the best course to be followed would be: The patient should be given a light diet the day before operation, consisting mostly of peptonized milk. Veronal, morphine, scopolamine and morphine will reduce the amount of chloroform. Only absolutely pure chloroform should be administered at 38° C. The author then gives other well known regulations, and insists that the patient should be kept under the influence of chloroform until he is returned to his bed, thus avoiding movement of the body. The patient should

be kept in an even temperature, and his bed after the operation should be placed in a well aired room. If there has been much secretion and swallowing of saliva the stomach should be washed out before the patient regains consciousness. But if vomiting occurs the patient should drink albuminous or warm water, ice cold or very hot applications should be applied to the stomach, and an injection of ergot or picrotoxine may be given.

July 10, 1909.

1. Diagnosis and Treatment of Insufficiency of the Suprarenals.
By EMILE SERGENT.
2. Eosinophilia and Exudative Diathesis in Nursing.
By R. ROMME.

1. Suprarenal Insufficiency.—Sergent defines the suprarenal insufficiency as a diminution or suppression of the functions of the suprarenals. The symptoms are besides the bronzing of the skin a small and irregular pulse; tachycardia; a feeling of cold; a tendency to collapse, to faint; anorexia; vomiting; constipation or diarrhoea in acute cases; general malaise; encephalopathy, which can be chronic, subacute, or acute asthenia. The treatment he proposes consists in suprarenal organo-therapy.

July 14, 1909.

1. Congestive Pulmonary (Edema of the Apex Simulating Tuberculosis).
By C. CAUSSADE and PIERRE QUESTRE.
2. Clinical Coprology Ascarides Simulating Ulcer of the Stomach.
By R. GAUTHIER.

LA SEMAINE MEDICALE.

July 7, 1909.

- Surgical Treatment of Spastic Paralysis: Förster's Operation,
By FELIX ROSE.

Surgical Treatment of Spastic Paralysis.—Rose gives a review of the fifteen cases which have been reported, in which Förster's operation has been performed. Two of the patients succumbed, the other patients received marked benefit.

July 14, 1909.

- How to Execute a Pubiotomy, By Prof. R. DE BOVIS.

How to Execute a Pubiotomy.—De Bovis concludes his article by stating that at present, at least in France, Cæsarean operation is in favor. It presents only a very small percentage of danger if it is performed before the escaping of the amniotic fluid, as otherwise we should be obliged to perform Torsion's operation or drainage, although both these operations are very dangerous.

EDINBURGH MEDICAL JOURNAL

August, 1909.

1. The Promotion Address Delivered to the Medical Graduates of 1909.
By Sir THOMAS R. FRASER.
2. A Clinical Lecture on Retroversion of the Uterus and Its Treatment, with Special Reference to the Operation of Shortening the Round Ligaments.
By N. T. BREWIS.
3. The Anatomy and Histology of the Pregnant Tube.
By JAMES YOUNG.

2. Retroversion of the Uterus.—Brewis recommends the following operation. After curetting the uterus, an incision is made immediately above the pubes, extending for a distance of about two and one half inches. The incision is made through skin, superficial fascia, and fat. Retractors are then placed at one end of the wound, one being placed parallel to Poupart's ligament, the other parallel to

the inner aspect of the thigh. Strong traction is now made with those retractors, so that the edges of the wound are widely separated, and the inguinal canal area is exposed; but before reaching the inguinal ring, a well defined layer of deep fascia has to be reflected. This is best done by dividing it parallel to the fibres of the external oblique until the external opening of the ring is exposed. The suprapubic transverse incision has two advantages over the one commonly used. Its position above the pubes renders it less liable to contamination, and it also permits of free retraction and good exposure of the inguinal area. Before proceeding further divide the intercolumnar fascia, pick up with a hook the mass, filling up the external ring, then separate carefully the ligament from the fascial sheath. Having done this, you will be able to draw out the ligament. In doing so, make gentle, steady traction, and withdraw it until it presents a distinct shoulder. This indicates that a point near the uterine horn has been reached. Treat the ligament of the opposite side in a similar manner. Divide both ligaments near the pubic spine and suspend them. Make equal traction on both to keep the uterus in the middle line. Pass two fingers of the right hand into the vagina to ascertain that the fundus is in the desired position, and at the same time introduce a Hodge pessary. Pass a stout catgut suture through each ligament at the outer end of the ring, passing the suture through Poupart's ligament, the round ligament, and the external oblique muscle successively. Draw the ligature tight—take care not to include the nerve. Close the external ring carefully with strong catgut. The ligaments are now anchored, but for additional security pierce the aponeurosis in the middle line and again about an inch from the external ring and draw the detached end of one ligament through. Repeat this manoeuvre on the other side, and suture both ligaments to the fascia in the middle line, and also at the other points where they emerge through the aponeurosis. If the ligaments are long enough, the ends may be farther carried down to each pubic spine and fastened there. Bring the fat and fascia together with medium catgut, and, lastly, close the skin wound with a subcuticular stitch of fine catgut. Keep the patient in bed a fortnight. Remove the pessary before dismissal. The article is well illustrated.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirty-fourth Annual Meeting, Celebrating the Centennial of McDowell's Operation, Held in New York, April 20, 21, and 22, 1909.

The President, Dr. J. RIDDLE GOFFE, of New York, in the Chair.

(Concluded from page 470.)

The Administration of Anæsthetics.—Dr. HERMAN J. BOLDT, of New York, said the competency of the anesthetizer was more important to the surgeon in many instances than the competency of his first assistant. As to the safest anæsthetic, it had been demonstrated that, of ether, chloroform, and the A. C. E. mixture, ether was the least dangerous

to life. This was shown in an investigation of about 386,000 anæsthesias collected by him for a paper in 1897. It would be misleading, however, to make this statement without modifications. Some patients did not take ether well. They fell into a condition that rendered a continuance of its administration very hazardous, but they would tolerate chloroform with no untoward symptoms whatever during the anæsthesia.

The belief that ether was more injurious to the kidneys than chloroform did not coincide with the author's experience. In nearly every instance of ether or chloroform narcosis there had been subsequently transitory albuminuria of mild degree, with renal elements in the urine. The casts were usually noted for periods of from three to fourteen days after the anæsthetization.

To assert that any one anæsthetic was devoid of risk, or that any one method of administering an anæsthetic was entirely free from danger, was to assert a fallacy. The author believed that nitrous oxide gas mixed with oxygen was the safest anæsthetic of any at our command, and the time for which it might be administered was almost unlimited.

Speaking of the legal aspects of administering anæsthetics, Dr. Boldt said that in very many localities it was legally permissible to have a nonmedical person take charge of the administration of the anæsthetic, and that, too, where the requirements to practise medicine were as strict as in the State of New York. If the statute could not be so amended that a nonmedical person might administer the anæsthetic without the surgeon being held responsible, then a law should be passed which would compel all institutions where anæsthetics were used to employ a thoroughly qualified anæsthetist, whose duty it should be to be present and to give instruction at every anæsthetization (for not fewer than one hundred consecutive anæsthesias) to every interne who was assigned to such duty. This would mean extra expense to the hospitals, yet in justice alike to the patient and to the surgeon there should be such a law.

Anæsthetics in Hospitals and Private Practice.

—Dr. JAMES T. GWATHMEY, of New York, said the administration of anæsthetics as a specialty was recognized in only a few of the larger cities of America to-day. So intense had been the interest in surgery that anæsthetics had been used only as a means to an end, and this fully explained the attitude of the profession on this subject in America at the present time. The advancement in anæsthetics in England had been rapid.

In the light of recent discoveries no surgeon was justified in adopting some one anæsthetic and method of administration exclusively. There were four general anæsthetics in common use, and there were three methods of administration. These anæsthetics and methods were mentioned. Nitrous oxide gas with oxygen was the only nonpoisonous anæsthetic available to-day. Unfortunately, it was considered by men of large experience adapted to only about thirty per cent. of the surgical cases that came to us, namely, those of weak, anæmic men and middle aged women. These patients should have the benefit of this anæsthetic whenever possible. Nitrous oxide gas and oxygen, supplemented by ether,

could be used in at least sixty per cent. of all cases. Nitrous oxide gas and oxygen could and should be used as a preliminary to ether in at least eighty per cent. of the surgical cases. Oxygen administered with warm chloroform, either by the closed or open method, doubled its value as regarded life, and given in this way it was as safe as ether and air. Ethyl chloride was used principally as a preliminary anæsthetic or for very short operations, and while not so safe, generally speaking, as nitrous oxide gas, was safer than this gas in certain selected cases.

The problem to-day was not the matter of life and death upon the table, but what methods and combinations would give the best results and leave the patient just as we found him. To do this, the anæsthetist should be responsible with the surgeon for the preliminary medication, to quiet the nerves of the patient, in addition to the usual routine procedure. He should also be informed and consulted if the patient was nauseated after the operation. In the vast majority of cases there was now no nausea or vomiting, but we should not be satisfied until we could assure all patients that they would come out of the anæsthesia in an absolutely quite and natural state.

The Proper and Improper Methods of Administration of General Anæsthetics.—Dr. S. C. GORDON, of Portland, Me., read a paper on this subject in which he said that the first and most important point to be observed in the administration of an anæsthetic was a proper preparation of the patient, both physically and mentally. The dread of the anæsthetic was oftentimes much greater than that of the operation, and much might be done to prevent this. Second, there was usually too much haste in its administration, and too large a quantity was used. Inhalers were very faulty in construction. The simplest was always the best. The drop method of administration was the true one. The cover of the mask should be porous and allow the transmission of air through it during respiration. Third, careful attention should be paid on the part of the anæsthetist, who should have an acquaintance with the ordinary, normal condition of the pulse and respiration—a medical man or trained nurse preferred.

Renal Excretion during the Administration of Chloroform and Ether in Gynecological Surgical Operations.—Dr. J. WESLEY BOVEE, of Washington, read a paper with this title, in which he summarized as follows: 1. From the study of sixteen cases it would appear that the rate of excretion of urine was markedly lessened under anæsthesia produced by ether or by chloroform. 2. Such diminution was greater from chloroform than from ether. 3. While chloroform produced a diminution in urea output, this continued to maintain a nearly normal proportion to urinary excretion, while ether produced a greater proportionate lessening of urea than of the urine. 4. These two anæsthetics, when carefully and skilfully administered, had little effect on the production of casts and albumin in the urine, inducing it in some, stopping it in others, and in others either not producing it or not materially modifying such production. 5. The Trendelenburg posture greatly retarded the rapidity of urinary output.

The Advisability of Making the Practical Administration of Anæsthetics a Required Part of the Medical Course.—Dr. REUBEN PETERSON, of Ann Arbor, Mich., read a paper on this subject, saying that the necessity of such instruction was shown by the experience of the past. There was inconsistency in requiring proficiency in the so called scientific branches of medicine, while the student was graduated without having given an anæsthetic. It was feasible to establish such a course as a part of the already overcrowded curriculum. This could be done by the proper utilization of much time now wasted in unsystematic teaching. The whole question of the proper administration of general anæsthetics in hospitals and in general practice was dependent upon the scientific teaching of the subject to undergraduates.

The Trained or the Untrained Anæsthetist?—Dr. HUNTER ROBB, of Cleveland, tentatively proposed the following suggestions: 1. That a skilled anæsthetist, holding an appointment in the medical school as one of the faculty, and in the hospital as one of the staff, be appointed at a proper salary to teach and demonstrate the administration of anæsthetics and to personally administer them to the private patients and to those in the general wards who were in a debilitated condition. 2. That in connection with a carefully prepared course of lectures on anæsthetics and their physiological action, each student should be required to administer anæsthetics to dogs or other animals a certain number of times. 3. That the lecturer next take the students the rounds of the operating rooms and point out to them the details in connection with the service and the points to observe in giving an anæsthetic to the human being. 4. That each student should be detailed to give the anæsthetic at a certain number of operations, under the guidance and criticism of the instructor or one of the more advanced students. In this way we could be assured that all of them would have at least a fair amount of general experience. 5. That the senior instead of the junior interne be detailed to administer the anæsthetic, as he would have had the opportunity of following and also of assisting in the administration of the anæsthetic in a considerable number of cases by the time he had reached the position of senior assistant. The author did not present this as a detailed plan, but in order to give an outline which could be developed according to the various conditions which existed in the different hospitals.

• Dr. ROBERT L. DICKINSON, of Brooklyn, N. Y., detailed his experience with visiting anæsthetists in some Brooklyn hospitals.

Improved Methods of Obtaining Anæsthesia in Hospital Practice.—Dr. J. CLARENCE WEBSTER, of Chicago, said that the routine administration of ether, as practised in America, was to be condemned because of unpleasant or dangerous sequelæ. His method consisted in administering nitrous oxide gas with oxygen (two per cent.) until the patient was unconscious, then ether until complete anæsthesia was obtained. The latter was then abandoned, and the operation was performed under the influence of the nitrous oxide gas and oxygen mixture. This might or might not be followed by pure oxygen for

twenty minutes. This method meant greater safety and fewer unpleasant or serious after results. Local anæsthesia should also have a more important place in practice, and should supersede general anæsthesia in certain cases.

A general discussion followed. All those who took part in it expressed themselves as being fully convinced of the great need of having more expert anesthetists in America.

Conservatism in the Surgery of the Pelvic Organs.—Dr. HERMAN J. BOLDT, of New York, said that the excision of a part of an ovary, the seat of small cystic degeneration, or the puncturing of small cysts, did not deserve the name of conservative surgery, because the small cystic degeneration was without significance. Plastic surgery on suppurating Fallopian tubes was considered as bad surgical judgment rather than as conservative surgery, because the patients upon whom such a procedure was undertaken were not cured by it. The removal of a pedunculated subperitoneal myoma should not be considered as conservative. It was only a common sense procedure. Good judgment must be used in interstitial multiple myomata and in multiple subperitoneal myomata, if the latter had attained to more than four or five centimetres in diameter. To retain the uterus in such cases was conservative surgery. It was also conservative surgery to retain the whole or a part of the uterus in cases of an abscess in the uterus. A case of the latter class was related in which about one third of the uterus had been removed and the woman subsequently conceived and was delivered at term.

In cases of ovarian tumors an attempt should always be made to retain functionally active ovarian stroma from the base of the tumor. In all cases of doubtful character of the tumor a frozen section of it should be made, if possible, by the pathologist of the hospital, and his report on the character of the tumor be obtained before the abdomen was closed. The operation had been done forty-five times in cases of bilateral tumors during the past twenty years, and, with one exception, there had been no occasion to regret the procedure. The menstrual function had been retained in all patients and some had conceived and been delivered at term.

Remote Results of Ovariectomy.—Professor HOFMEIER, of Würzburg, Germany, read this paper, in which he said that in Group I, retention cysts, fibroids, dermoids, pseudomucin cystoma, carcinoma—ovariectomy in all sorts of tumors of this group gave excellent results. The danger of secondary affection of the other ovary did not exist. The danger of a later spontaneous (idiopathic) affection was very slight. Therefore, the removal of the one diseased ovary would be sufficient. With reference to the slight possibility of secondary implantations of the pseudomucin cystomata, special precaution during the operation was required. If there was a suspicion of carcinomatous degeneration of the removed tumor, the removal of the other ovary, which seemed to be healthy, was not absolutely necessary in young women. In cases of illness, as shown by microscopical examination, relapse would surely follow in spite of the removal. In case it was healthy, a cure was possible by leaving it. In every single case, young women or their nearest relations, should

be consulted and notice of their wishes should be taken. An operation should be attempted in all cases where removal of the ovary or ovaries seemed to be possible. The resection of a beginning growth of the second ovary was allowed only in cases of retention cysts, fibroids, or dermoids. Of pseudomucin cystomata it was only allowed if the patient was ready to risk a second operation later; it was absolutely forbidden in case of carcinoma.

In Group II, comprising cystoma serosum papillare, pseudomyxoma, sarcoma, and teratoma, complete cure was possible, especially for papillomata and pseudomyxomata, even when the bilaterally developed, also for unilateral sarcoma and teratoma. If on thorough macroscopical examination the second ovary seemed to be healthy, it might be left, as the removal of both ovaries was very detrimental to the general health of young women, and as the danger of a spontaneous attack of the second ovary was not very great. The state of the ovary, however, must necessarily be watched for several years. If both ovaries were diseased, they must be completely removed with the uterus. Resection of such a tumor from the ovary was not allowable.

The Surgical Treatment of Dysmenorrhœa and Sterility in Women.—Professor SAMUEL POZZI, of Paris, France, read a paper on this subject, describing in great detail an operation for the relief of dysmenorrhœa and the cure of sterility, and said that thus far he had not observed a single failure. After this operation cervical metritis due to stenosis rapidly disappeared, including leucorrhœa. As to sterility, in more than twenty-five per cent. of his cases pregnancy followed the operation, the women going to term without any accident, and their labors were normal. Rigidity of the cervix was not to be feared, for there was no cicatricial tissue, as occurred after some amputations of the cervix.

Postoperative Peritoneal Adhesions.—Dr. GEORGE GELLHORN, of St. Louis, read a paper on this subject, detailing experimental studies of postoperative peritoneal adhesions. In summing up his experimental studies on the subject and trying to utilize them for practical purposes, he suggested that the multitude of causes of postoperative adhesions would also necessitate a multitude of preventive measures, and that, therefore, the following precautions should be considered, either wholly or in part: 1. All prophylactic measures mentioned in connection with primary adhesions. 2. Bier's hyperæmia as produced by dry heat. 3. Hypodermic injection of fibrolysin or thiosinamine. 4. Drainage with solution of aluminum acetata after certain vaginal operations. 5. Prompt provocation of peristalsis by hypodermic injection of physostigmine, together with improvement of the passive mobility of the intestines by means of mucilage. 6. Interposition of wool, provided further experiments proved its harmlessness to the human organism and its efficacy as to the prevention of adhesions.

The Significance of Peritoneal Adhesions Following Operations.—Dr. HENRY T. BYFORD, of Chicago, said that operations which led to the production of adhesions were either imperfectly or improperly performed. Extensive adhesions following poorly performed operations sometimes caused more

suffering than was felt before. He illustrated this by cases from his records which showed that serious conditions were sometimes due to postoperative adhesions of limited extent, and might be relieved by their separation, also that the mere separation of adhesions about diseased organs might lead to a cure of the symptoms, and that when the original causes of the adhesions were removed, the secondary adhesions that followed a properly performed operation were less extensive and less permanent. When postoperative adhesions were intestinal in character, muscular exercise and intestinal activity tended to relieve them without the aid of an operation. Omental adhesions caused less immediate trouble, but the omentum had not the power of separating itself as the small intestines had. They acted by interfering with the functions of the organs to which the omentum was attached and by dragging upon the stomach and colon, causing or perpetuating gastropnoia and dilatation of the stomach. The prevention of these postoperative adhesions was not to be attained by any one procedure or remedial agent, but by a properly executed technique.

Intestinal and Omental Adhesions.—Dr. JOHN G. CLARK, of Philadelphia, discussed the anatomical and pathological factors concerned in the promotion of adhesions, and described some hitherto overlooked points in the technique which led to this sequel. He also spoke of the frequency of postoperative adhesions and discussed their treatment.

Dr. HENRY C. COE, of New York, compared the present with the former after results of laparotomy. Of seventy to seventy-five patients who recovered from the operation in preoperative days, many were practically invalids for life, due to imperfect technique. Complications that were now rare had then been common. Examples were given. The reasons were unskillful manipulation, infection, the use of large silk ligatures, glass drains, bad after treatment, etc. The aetiology and pathology of omental and intestinal adhesions were discussed. Apposed raw surfaces were more likely to adhere. Gauze packing and early movement of the bowels did not prevent it. There might be a localized traumatic peritonitis, as in simple cases of interval appendicitis, etc. Medical treatment was of no avail in marked cases. It was necessary to reopen the abdomen, separate the adhesions, and cover the raw surfaces in such a manner that the adhesions would not reform.

Although it was humiliating to abdominal surgeons to admit it, up to this time we had no certain means of preventing the formation of adhesions in complicated cases. The introduction of foreign bodies, films, powders, etc., was contrary to the spirit of modern surgery. Early purgation was not always a prophylactic measure, and was often harmful. We could not obtain healthy peritoneal flaps when there were extensive raw surfaces. The future method of prevention of adhesions still remained to be devised.

Dr. J. CLIFFORD WEBSTER, of Chicago, spoke of adhesions following abdominal sections. He alluded to the faults in technique which were likely to injure the peritoneum and then lead to adhesions. In dividing the tissues with a knife or scissors, the operator should take care to bury the raw surfaces.

The same procedure was demanded where adherent structures were separated, and although it was impossible to carry this out perfectly in all cases, various manoeuvres might be employed, in many instances calculated to improve the condition of the parts. These were described in detail.

Ileus.—Dr. WILLIAM H. WATHEN, of Louisville, said that for postoperative ileus we should substitute postoperative paralytic intestinal obstruction, partial of complete, temporary or permanent. The partial or complete postoperative obstruction in the gastrointestinal tract might be either primarily paralytic or mechanical, which, if not operated on promptly, was followed by a loss of motility, and then the symptoms were often so nearly identical that a differential diagnosis could not be made. The paralytic form might be caused, first, by violent inhibitory impulses transmitted to the muscle walls of the intestines from the central nervous system by the splanchnic nerves throughout the sympathetics; second, by the destruction or impairment of the neurogenic energy and the myogenic force in the walls of the intestines upon which motility and peristalsis depended, resulting from the poisonous action of bacterial enzymes from the intestines or the peritoneal cavity upon the nerves or muscles in the bowel walls, or from traumatism; third, by the combined action of the central inhibitory splanchnic impulses, with impairment or destruction of the neurogenic energy and myogenic force in the intestines caused by bacterial poisons or traumatism. Reference was made to the researches upon the gastrointestinal tract bearing upon its anatomy, physiology, motility, and bacteriology.

Where intestinal mechanical obstruction could be timely recognized, an immediate operation should be advised, and sometimes resection of the injured bowel. Rapid work in these operations was very essential, and as little traumatism as possible to the intestines or the mesentery. In some instances enterotomy should be advised, and in other enterostomy. No food or liquid should be given by the stomach, but stomach lavage should be frequently repeated where the bowel contents had regurgitated into the stomach and were not easily vomited. The patient should be placed in the semisitting or sitting posture and the tissues of the body supplied with water by the rectum after the fashion advised by Murphy. In some instances relatively large enemas, to which might be added a little alum or some carminative, might be used, but not repeated too often, and the bowel never overdistended. This might empty the colon, thereby removing colonic obstruction to the flow of the contents of the small bowel.

Paralytic intestinal obstruction was now relatively infrequent when compared with the results of work in the past. This was due to a better preparation of patients, to a better technique, more rapid operation, more gentle handling of the intestines, and a better asepsis. Drainage should not be used where it could be avoided, but when necessary one should use the rubber split or fenestrated tube, and never use gauze except to control the dangerous oozing of blood or to isolate an infected area. Preventive treatment was more important than the postoperative.

Dr. HOWARD A. KELLY, of Baltimore, discussed the mental disturbances following abdominal sections, the nature of them, their frequency, the kinds of operations that they followed, the prognosis, and the treatment.

Dr. JOHN OSBORNE POLAK, of Brooklyn, N. Y., said that acute dilatation of the stomach as a post-operative complication occurred eight times in one thousand abdominal sections. There were two deaths in patients with low hæmoglobin percentages and low red cell counts. All patients were operated on under general anaesthesia. Six had had septic processes before operation. One had previous gastropnoia. Vomiting began from twenty-four to fifty hours after operation. There were diffuse abdominal pain and thirst, with continuous and persistent regurgitant vomiting, without peritoneal irritation, which enabled one to make the diagnosis. The treatment consisted in lavage, starvation, with the right lateroprone posture, with Murphy irrigation and nutrient enemata.

Ureteral Fistulae as Sequelæ of Pelvic Operations.—Dr. JOHN A. SAMPSON, of Albany, N. Y., discussed certain important anatomical features of the ureters from the standpoint of ureteral fistulae. In the first place, he spoke of their relation to the other pelvic structures, especially to the parietal peritonæum and to the uterus. He referred to the pelvic conditions in the operative treatment of which there was danger of injuring the ureter, such, for instance, as extreme lateral displacement of the cervix; masses adherent to the parietal peritonæum covering the ureter; intraligamentary tumors; inflammatory exudates in the base of the broad ligament; tumors lateral to the ureter; cancer of the uterine cervix; injuries to the ureter which might result in fistula, such as clamping, ligation, incision, failure of repair, and interference with blood supply. The author classified ureteral fistulae, after which he discussed their treatment and prophylaxis.

The Pathology of Ovarian Tumors.—Dr. THOMAS S. CULLEN, of Baltimore, discussed under this head retention cysts, cystic ovaries, multilocular ovarian cysts, papilocystomata, carcinomata, dermoid tumors, and teratomata.

The Influence of Corsets and High Heeled Shoes on the Symptoms of Pelvic and Static Disorders.—Dr. EDWARD REYNOLDS, of Boston, said that this was a preliminary report from the clinical and gynaecological point of view only of some of the results of experimental observations which had extended over about three years and a half upon the general subject of the influence of attitude and proportion upon abdominal and skeletal disorders. There was a large portion of the clinical field in which the patients were either suffering from both static (orthopaedic) and pelvic lesions due to a common cause, or presented symptoms which might be due to either and demanded a differential diagnosis.

The experimental investigations of balance in the erect posture was a subject very difficult of investigation. The keynote to its comprehension was to be found by studying the relation of the centre of gravity to the several portions of the skeleton. Certain types of figure tended to be free from ptoses and static ailments. Certain other types were in-

herently liable to them. The stable types of figure were but little affected by the varying types of corsets and shoes. The unstable types were greatly affected for good or evil by these articles of dress. In corsets there were types which were always productive of evil, and types which were sometimes thoroughly desirable and productive of good. From a gynaecological point of view the effect of shoes must be considered in connection with that of corsets. The authors exhibited photographs and presented full sized graphic studies from living models under differing conditions.

The Banquet.—The notable and culminating feature of this meeting, which was one of the most successful in the history of the society, was the dinner in commemoration of the first ovariectomy, by Dr. Ephraim McDowell, given at the Waldorf-Astoria by the New York and Brooklyn fellows on Thursday evening, April 22d.

Dr. J. Riddle Goffe acted as toastmaster. The speeches were not only instructive and scholarly, but valuable historical contributions. The toasts and speakers were: "Ephraim McDowell, the First Ovariectomist," by Dr. Lewis S. McMurtry, of Louisville; "Mrs. Crawford, a Type of American Womanhood," by Dr. Edward P. Davis, of Philadelphia; "McDowell's Successors in America," by Dr. Howard A. Kelly, of Baltimore; "McDowell's Successors in the British Empire," by Dr. Herbert R. Spencer, of London, England; "McDowell's Successors in France," by Professor Samuel Pozzi, of Paris, France; "McDowell's Successors in Germany," by Professor Hofmeier, of Würzburg, Germany.

Dr. E. C. DUDLEY, of Chicago, exhibited lantern slides showing the home of McDowell, Mrs. Crawford before and after operation, etc.

Officers for the Ensuing Year were elected as follows: President, Dr. Edward P. Davis, of Philadelphia; vice-presidents, Dr. Seth C. Gordon, of Portland, Me., and Dr. Edward Reynolds, of Boston; secretary, Dr. LeRoy Broun, of New York; treasurer, Dr. J. Wesley Bovée, of Washington. Washington was selected as the place of the next meeting, in conjunction with the Congress of American Physicians and Surgeons, in 1910.

Letters to the Editor.

A PROPOSED MONUMENT TO THE MEMORY OF THE LATE DR. TURNER.

HARTFORD, Conn., September 2, 1909.

To the Editor:

The late Dr. J. Edward Turner, a physician very widely known to the older members of the medical profession as the founder and projector of the first inebriate asylum in the world, built at Binghamton, N. Y., died in indigent circumstances, and was buried at Wilton, Conn. No stone or monument marks his burial place up to the present time. The Society for the Study of Alcohol and Other Narcotics, recognizing this, have appointed a committee to solicit subscriptions for the purpose of erecting a monument over his grave costing about \$600 or \$700.

Dr. Turner was the first man in the world to point

out the practical possibilities from the medical study and treatment of inebriates in an institution, and to indicate that the great alcoholic problem must be solved by a scientific study of the inebriate and the nature and influence of alcohol. His views were denied and severely ridiculed, and he was persecuted as a crank and impractical idealist, but this simply increased his ardor and energy to sacrifice both his estate and his time in the demonstration of the practical character of the first institution and the first effort to treat the inebriate medically. In this he was a medical pioneer and veritable martyr, a century ahead of his day and generation, and his writings and books indicate a knowledge of the subject which even now is just beginning to dawn on the minds of the most advanced students.

The time has come when American physicians should recognize this in a slight degree, if by nothing more than a monument of his marvelous work and studies, and it should be the duty of every one interested in this field of study to take part and assist in commemorating and showing to future generations that we are not oblivious of the real significance of his work.

Dr. L. D. Mason, of 171 Joralemon St., Brooklyn, N. Y., has been appointed treasurer of the Turner Memorial Fund and earnestly solicits contributions of any amount for this purpose, and will acknowledge the same. Subscribers to the fund will receive a copy of Dr. Turner's *History of the First Inebriate Asylum in the World*, a volume of 500 pages, published a short time before his death and containing an account of the struggles and beginnings of the first institution, at Binghamton.

It is proposed that when the contributions are sufficient a formal dedicatory service shall take place at Wilton, Conn., at which historical addresses shall be delivered on Dr. Turner and his work. Now that the alcoholic problem is coming into prominence, and is so intimately associated with the great hygienic problems of the day, it should be a privilege as well as a duty to aid in this effort to show the work of one of the great leaders in the ranks of American medicine, whose life and fortune were concentrated in bringing to the front the medical study of the drink and drug neurotic, and pointing out a broader phase of the alcoholic problem. Correspondence is solicited, either to Dr. L. D. Mason, 171 Joralemon St., Brooklyn, N. Y., or to the subscriber, who is chairman of the committee.

T. D. CROTHERS.

ANTERIOR POLIOMYELITIS.

42 GATES AVENUE,

BROOKLYN, September 4, 1909.

To the Editor:

I notice Dr. A. F. Hess's letter in to-day's issue. It may be of interest to know that in the Brownsville section of Brooklyn anterior poliomyelitis is epidemic at the present time and has been for several weeks. As it seems to be subsiding, I am making tabulations of my personal records of cases occurring during this particular epidemic. It is possible that there may be some connection between the few cases observed since August 17th on the lower

east side of Manhattan and the many which have occurred in the Brownsville section of Brooklyn previous to that date. Both sections are similar in the make up of their populations. The known existence of a considerable epidemic in the above mentioned section may help to clear up some of Dr. Hess's questions.

LE GRAND KERR.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Hæmorrhage and Transfusion. An Experimental and Clinical Research. By GEORGE W. CRILE, A. M., M. D., Professor of Clinical Surgery, Western Reserve Medical College, etc. New York and London: D. Appleton & Co., 1909. Pp. xiii-560.

A careful study of this book cannot but be an inspiration and a source of help both to physicians and to surgeons. Based as it is on the researches of eleven years, it contains a wealth of information which is found in no other book dealing with this subject. The author has been an enthusiastic worker and careful student in this field, and in this book shows the broad foundation on which he has built. The book is well written, clearly arranged, and excellently printed. The intricate subject of hæmolytic crisis is well presented, as is also the test for the presence of hæmolytic toxins in the bloods about to be mixed in transfusion. There is a detailed account of the technique of transfusion, with a description of both the suture and the cannula method. The book does great credit to American medicine.

Le Tabes maladie de la sensibilité profonde. Par le Dr. J. GRASSET, professeur à la Faculté de médecine de Montpellier. Leçons cliniques recueillies et publiées par le Dr. RIMBAUD, chef de clinique médicale. Montpellier: Coulet et Fils, 1909. Pp. 124.

The author believes the essential symptoms of locomotor ataxia are in every case due to disturbances of deep sensation, the result of the lesions in the posterior columns of the cord. This view is supported by many carefully recorded observations on the deep reflexes, anesthesia of the rectum and bladder, and the analgesias of the testicle, epigastrium, trachea, and ocular globe when subjected to pressure in tabetic subjects.

How to Nurse Sick Children. By the late CHARLES WEST, M. D., Founder of and Late Physician to the Hospital for Sick Children, Great Ormond Street. With a Preface by GEORGE F. STILL, M. D., Physician to Out Patients, the Hospital for Sick Children. New Edition. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1908. Pp. ix-52.

This little book is virtually a reprint of the original, which was issued nearly half a century ago by Dr. West. In the earlier editions he would not even allow his name to appear, and the proceeds of its sale were then, as now, given to the great institution which was founded by his efforts and which remains to-day a noble memorial of a life well spent—the Hospital for Sick Children, Great Ormond Street, London. Dr. West builded better than he knew, for since the hospital he founded first demonstrated the value of special hospitals for children the example

has been followed throughout the civilized world, and the Great Ormond Street Hospital has been well called the mother of children's hospitals.

This booklet, although written many years ago, contains a great number of practical hints which are as valuable to-day as they were when they were written, and will continue valuable as long as sick children require nursing. It is a really excellent work and in many regards has been the model for the various works upon the care and nursing of children which have appeared since its first edition was issued.

MEDICOLITERARY NOTES.

Besides reviving the Puck of Pook's Hill stories in the *Delinicator*, Rudyard Kipling begins a two part novelette, *The House Surgeon*, in the September *Harper's*.

It is asserted that the distinguished surgeon Abernethy once denied explicitly that he had any hand in devising the Abernethy biscuit, and stated that the name of the baker who originated them was the same as his own.

The undertaker's profession is, we are glad to believe, older than the doctor's. Be that as it may, antiseptics were employed by the embalmer long before surgeons learned of their peculiar value and before the word itself was familiar to them.

Our old acquaintance, Dr. Rast, reappears in *The Unborn*, by James Oppenheim, in the September *American*. This worthy medical adviser of the East Side poor might be praised by admirers for his paternal interest in their welfare, yet by scoffers might peradventure be acridly accused of "butting in." The heroism manifested by the hero and heroine of *The Unborn* makes strong demands upon our credulity.

E. T. Brewster, in *The Fly—The Disease of the House*, in the September *McClure's*, tells the story of this deadly enemy of humanity and particularly of the baby. It is explained how the fly's pleasant vices, love of light and of strong odors, may be made whips to scourge him. We hope the story will be widely copied. Poor, ignorant humanity, that has wasted so many centuries exorcising invisible devils while ignoring such tangible and vicious foes as the insects!

A favorite story, 150 years ago, was that of the young doctor's apprentice who for the first time saw the words *pro re nata* on a prescription handed to him to compound. He was a fair classical scholar, but even long and thoughtful study of the lexicon led him no further than to the literal rendering "for the thing born." Finally, light seemed suddenly to dawn upon him and, commenting inwardly on what he concluded to be an ingenious classical periphrasis, he carefully inscribed the label with the directions "For the baby."

The hookworm, which has been thoroughly discussed in this journal in several able communications, forms the subject of an article in the September *Pearson's*, by Walter P. McGuire. The idea that laziness is not a moral characteristic of the southern laborer, but a tangible physical disease, is undoubtedly a novel one to many people, and it may account for the delay of Congress in passing a bill to help the work of Dr. Stiles, who has estimated

that there are some ten million laborers in the South invalidated by the worm. Mr. McGuire thinks the health of a human being demands as much Federal consideration as that of a chicken, cow, or pig.

The remarkable serial, *Margarita's Soul*, by Ingram Lovell, draws to a conclusion. If the story is intended as a *tour de force* in imitation of the style of the late Du Maurier, it is a brilliant achievement. Every trick of that charming writer seems to have been mastered; the gossip references to real people, the sure connoisseurship in art and music, the delicate agnosticism, the admiration of democracy as a theory together with the enjoyment of aristocracy as a fact, the parade—or perhaps thorough knowledge—of idiomatic French, the love of the theatre, the fancy for dogs, a captivating dreamy reminiscence of incidents in the story, and a thousand and one little "stylistic" touches that show deep study of the model. Had Du Maurier known enough of America to thoroughly absorb the atmosphere, not only of the United States, but of Boston, we might be persuaded that this was a posthumous work. We are not intimating that *Margarita's Soul* is not a capital story, for it is; one that can be reread, too.

Among articles in the September *Everybody's* that should interest physicians are: *What Shall We Do with the Old?* by Richard Washburn Child; *Lodgings for the Rich*, by Arthur E. McFarlane, in which the doctor may learn how some of his patients live; and, as so many religious missionaries have been graduates in medicine, *The Romance of the Missionary*, by E. Alexander Powell, F. R. G. S. There is also a joke which should teach the physician to exercise his hard earned scientific precision in answering the questions of patients: "A baseball player had two fingers of his right hand pretty badly bunged up in practice, and on his way home from the grounds he dropped into a doctor's office to have them attended to. 'Doctor,' he asked anxiously as he was leaving, 'when this paw of mine heals will I be able to play the piano?' 'Certainly you will,' the doctor assured him. 'Well, then, you're a wonder, Doc. I never could before.'"

NEW PUBLICATIONS.

Whitlocke, R. H. Anglin.—Sprains and Allied Injuries of Joints. London: Henry Frowde, Oxford University Press, and Hodder & Stoughton, 1909. Pp. xi-241.

Cooper, Arden.—The Sexual Disabilities of Man and Their Treatment. New York: Paul B. Hoeber, 1909. Pp. 184.

Saleeby, Caleb Williams.—Parenthood and Race Culture. An Outline of Eugenics. New York: Moffatt, Yard & Co., 1909. Pp. 389.

Fischer, Guido.—Bau und Entwicklung der Mundhöhle des Menschen unter Berücksichtigung der vergleichenden Anatomie des Gebisses und mit Einschluss der speziellen mikroskopischen Technik. Lehrbuch für Zahnärzte, Ärzte und Studierende. Mit zehn Tafeln und 420 Abbildungen. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. x-436.

Schleich, and Jäger.—Jahresbericht über die Fortschritte der inneren Medizin im In- und Auslande. Herausgegeben von Dr. Beyer, Dr. Brassert, etc. Redaktion: Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über das Jahr 1908. I. Band. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. xii-405.

Wüllstein und Wilms.—Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp, Prof. Küttner, etc. Zweiter Band. Erster Teil: Bauchhöhlen, Leber, Milz, Pankreas, Magen, Darm, Harn- und Geschlechtsorgane, Becken und Hernien. Mit 107 zum Teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1909. Pp. vii-521 to 611.

Eadie, Robert and Andrew.—Physiology and Hygiene for Young People. New York: Charles Scribner's Sons, 1909. Pp. 353.
May, Charles H.—Manual of the Diseases of the Eye. For Students and General Practitioners. Sixth Edition, Revised. With 362 Original Illustrations, Including 22 Plates, with 62 Colored Figures. New York: William Wood & Co., 1909. Pp. vi-391. (Price, \$2.)
Eadie, Robert and Andrew.—Physiology and Hygiene for Children. New York: Charles Scribner's Sons, 1909. Pp. 204.

Ballet, Gilbert.—*Neurasthenia*. Translated from the Third French Edition by P. Campbell Smith, M. D. Illustrated with Seven Pictures. New York: Paul Hoeber, 1909. Pp. xxviii-408. (Price, \$2.)

Burton-Fanning, F. W.—The Open Air Treatment of Pulmonary Tuberculosis. Second Edition. New York: Paul Hoeber, 1909. (Price, \$1.50.)

Klebs, Arnold C.—Tuberculosis. A Treatise by American Authors on its Aetiology, Pathology, Frequency, Semiology, Diagnosis, Prognosis, Prevention, and Treatment. With Three Colored Plates and Two Hundred and Forty-three Illustrations in the Text. New York and London: D. Appleton & Co., 1909. Pp. xxix-939

Thompson, W. Gilman.—Practical Dietsetics. With Special Reference to Diet in Diseases. Fourth Edition, Illustrated, Enlarged, and Completely Rewritten. New York and London: D. Appleton & Co., 1909. Pp. xxvi-928.

Cabot, Richard C.—Physical Diagnosis. Fourth Edition, Revised and Enlarged. With Five Plates, and Two Hundred and Forty Figures in the Text. New York: William Wood & Co., 1909. Pp. xxii-579.

Basu, B. D.—The Dietetic Treatment of Diabetes. Allahabad: The Panini Office, Bhuvaneshvari Ashram, 1909. Pp. 40.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service during the week ending September 3, 1909:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Illinois—Chicago.	Aug. 14-21.	1	1
Minnesota—Duluth.	Aug. 19-20.	1	1
Montana—General.	July 1-31.	44	
Ohio—Toledo.	July 24-Aug. 7.	2	
Oklahoma—Oklahoma City.	Aug. 7-21.	1	1
Tennessee—Knoxville.	Aug. 14-21.	1	
Texas—Houston.	March 20-June 10.	20	
Smallpox—Foreign.			
Algeria—Algiers.	July 1-31.	1	1
Brazil—Bahia.	June 25-July 16.	7	3
Brazil—Pernambuco.	May 15-31.	7	
Chile—Valparaiso.	July 3-31.	1	
Egypt—Cairo.	July 1-8.	1	1
France—Toulon.	July 24-31.	1	1
India—Bombay.	July 13-20.	2	2
India—Calcutta.	July 3-10.	4	5
India—Rangoon.	July 1-17.	1	4
Indo-China—Saigon.	July 3-10.	7	5
Italy—General.	Aug. 7-8.	1	1
Italy—Genoa.	July 8-15.	2	2
Italy—Naples.	Aug. 13-20.	34	2
Portugal—Lisbon.	July 31-Aug. 7.	6	
Russia—Odessa.	July 24-31.	1	1
Russia—Riga.	July 31-Aug. 7.	4	
Russia—St. Petersburg.	Aug. 13-20.	41	6
Spain—Barcelona.	Aug. 3-10.	1	8
Spain—Madrid.	July 1-31.	1	
Spain—Valencia.	July 24-31.	1	
Spain—Vigo.	Aug. 13-20.	1	
Straits Settlements—Singapore.	July 3-10.	1	1
Yellow Fever—Foreign.			
Brazil—Bahia.	June 25-July 2.	1	
Ecuador—Durán.	July 16-31.	1	
Mexico—Colima.	July 30-Aug. 20.	1	
Mexico—Merida.	Aug. 14.	1	
Cholera—Foreign.			
China—Amoy.	July 17-24.	2	
India—Bombay.	July 13-20.	2	
India—Calcutta.	July 3-10.	28	
India—Madras.	July 10-16.	2	
India—Rangoon.	July 3-17.	3	
Indo-China—Saigon.	Aug. 20-July 3.	1	
Netherlands—The Rotterdam.	Aug. 20.	1	
Russia—St. Petersburg.	July 29-Aug. 13.	200	

Places.	Date.	Cases.	Deaths.
Plague—Foreign.			
Brazil—Bahia.	June 26-July 16.	5	2
China—Amoy.	July 17-24.	62	
China—Canton.	July 24-July 12.	45	34
China—Chang-Poo.	July 24.	1	Epidemic
China—Nang-be.	June 1-30.	61	59
Egypt—General.	July 23-29.	7	2
Egypt—Alexandria.	July 19-Aug. 2.	3	2
Formosa.	July 10-17.	3	
India—General.	July 10-17.	500	613
India—Bombay.	July 13-20.	25	
India—Calcutta.	July 3-10.	29	
India—Rangoon.	July 3-17.	3	
Indo-China—Saigon.	June 26-July 3.	8	7

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 1, 1909:

ATILLES, PEDRO DEL V., Acting Assistant Surgeon. Leave of absence granted August 4, 1909, amended to read thirty days' leave from August 18, 1909, with pay, and fifteen days from September 17, 1909, without pay.

BOGCESS, J. S., Passed Assistant Surgeon. Relieved from duty on Revenue Cutter *Tahoma* and directed to proceed to Chicago, Ill., and report to the Medical Officer in Command for duty and assignment to quarters.

BROWNE, R. W., Acting Assistant Surgeon. Granted one day's leave of absence, August 31, 1909.

CARLTON, C. G., Pharmacist. Granted thirty days' leave of absence from August 4, 1909.

CLEAVES, F. H., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from September 13, 1909.

COFER, L. E., Assistant Surgeon General. Directed to proceed to Cape Charles Quarantine Station and Fisherman's Island, Va., upon special temporary duty.

CUMMING, HUGH S., Passed Assistant Surgeon. Leave granted July 8, 1909, amended to read one month from August 9, 1909.

FABIAN, J. J., Acting Assistant Surgeon. Granted ten days' leave of absence from August 28, 1909.

FOSTER, M. H., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and detailed to accompany the Agent of the Immigration Board of the Territory of Hawaii to the Madeira and Azores Islands.

GAHN, H., Pharmacist. Granted ten days' leave of absence from September 7, 1909.

GWYN, M. K., Passed Assistant Surgeon. Leave granted August 17, 1909, for seven days from August 17, 1909, amended to read five days from August 17, 1909.

HORNING, H., Acting Assistant Surgeon. Granted seven days' leave of absence from August 23, 1909, under paragraph 210, Service Regulations.

JACKSON, J. M., JR., Acting Assistant Surgeon. Granted five days' leave of absence from August 20, 1909.

MCCLARTY, A. A., Acting Assistant Surgeon. Granted ten days' leave of absence from August 27, 1909.

MORRIS, G. A., Pharmacist. Granted seven days' leave of absence from August 21, 1909, under paragraph 210, Service Regulations.

NYDEGGER, J. A., Surgeon. Granted one month and seven days' leave of absence from September 10, 1909.

ROSENAU, M. J., Surgeon. Granted four months' leave of absence from October 1, 1909.

SPOHN, A. E., Acting Assistant Surgeon. Granted one month's leave of absence from August 1, 1909, with pay, and two months from September 1, 1909, without pay.

SPRAGUE, E. K., Surgeon. Granted one month's leave of absence from September 8, 1909.

STERN, S. O., Pharmacist. Granted seven days' leave of absence from August 24, 1909, under paragraph 210, Service Regulations.

STERN, S. O., Pharmacist. Granted fourteen days' leave of absence from September 1, 1909.

STIMSON, A. M., Passed Assistant Surgeon. Granted seven days' leave of absence from August 23, 1909.

SWEET, E. A., Passed Assistant Surgeon. Relieved from duty at Boston, Mass., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

WICKES, H. W., Passed Assistant Surgeon. Granted fifteen days' leave of absence from September 1, 1909.

WILLE, C. W., Passed Assistant Surgeon. Granted fourteen days' leave of absence from September 12, 1909.

WOLLENBERG, R. A. C., Assistant Surgeon. Directed to proceed to Rotterdam, Holland, upon special temporary duty.

Promotion.

Assistant Surgeon Francis A. Ashford commissioned a passed assistant surgeon (recess), to rank as such from August 11, 1909.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital office, Galveston, Tex., August 31, 1909, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon William H. Gammon, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 4, 1909:

COFFIN, H. L., First Lieutenant, Medical Reserve Corps. Leave of absence further extended two months.
COOK, G. W., First Lieutenant, Medical Reserve Corps. Relieved from duty at present station and ordered to report on October 1, 1909, to Colonel Valery Havard, Medical Corps, president of the Army Medical School, at Washington, D. C., for a course of instruction in that school.

EDGER, B. J., Jr., Major, Medical Corps. Granted two months' leave of absence, with permission to go beyond the sea, to take effect when discharged from treatment at the Army General Hospital, Presidio of San Francisco, Cal.

FORD, C. S., Major, Medical Corps. Ordered, upon the expiration of his present expiration leave of absence, to proceed to Fort Logan, Col., for duty.

HUGHES, L. S., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Lawton, Washington, and ordered to Fort Worden, Washington, for duty.

HULL, A. R., First Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence when his services can be spared.

IRELAND, M. W., Major, Medical Corps. Detailed as a delegate to represent the Medical Department of the Army at the meeting of the Association of Military Surgeons of the United States, to be held in Washington, D. C., October 5 to 8, 1909.

JONES, E. C., First Lieutenant, Medical Reserve Corps. Relieved from duty at present station and ordered to report on October 1, 1909, to Colonel Valery Havard, Medical Corps, president of Army Medical School, at Washington, D. C., for a course of instruction in that school.

KEAN, J. R., Lieutenant Colonel, Medical Corps. Detailed as delegate to represent the Medical Department of the Army at the meeting of the Association of Military Surgeons of the United States, to be held in Washington, D. C., October 5 to 8, 1909.

KENDALL, W. P., Major, Medical Corps. Granted leave of absence for one month, to take effect about September 10, 1909.

KNOX, H. A., First Lieutenant, Medical Reserve Corps. Relieved at present station and ordered to report on October 1, 1909, to Colonel Valery Havard, Medical Corps, president of the Army Medical School, at Washington, D. C., for a course of instruction in that school.

LE WALD, L. T., Captain, Medical Corps. Leave of absence extended six days.

MCCAW, W. D., Lieutenant Colonel, Medical Corps. Detailed as delegate to represent the Medical Department of the Army at the meeting of the Association of Military Surgeons of the United States, to be held in Washington, D. C., October 5 to 8, 1909.

MOUNT, J. R., First Lieutenant, Medical Reserve Corps. Relieved from duty at present station and ordered to report on October 1, 1909, to Colonel Valery Havard, Medical Corps, president of the Army Medical School, at Washington, D. C., for a course of instruction in that school.

NORMAN, SEATON, First Lieutenant, Medical Reserve Corps. Ordered to active duty and assigned to Fort Leavenworth, Kansas.

PHILLIPS, H. F., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and assigned to Fort Sam Houston, Texas.

PORTER, E. H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month; relieved from duty at Fort Worden, Washington, to take effect upon expiration of leave of absence, and ordered home, when he will stand relieved from active duty in the Medical Reserve Corps.

WHEATE, J. M., First Lieutenant, Medical Reserve Corps. Ordered from Fort Lincoln, N. D., to Fort Snelling, Minn., for temporary duty.

WOOLLEY, H. C., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month, with permission to apply for an extension of one month. So much of paragraph 18, S. O. 174, July 29, 1909, W. D., as relieves Lieutenant Woolley from active duty in the Medical Reserve Corps, is so amended as to take effect upon the expiration of his leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 4, 1909:

SHAW, W. B., Pharmacist. Ordered to the Naval Hospital, Norfolk, Va., for duty.

WILSON, H. D., Surgeon. Detached from the Indiana and granted leave for two months.

Births, Marriages, and Deaths.

Married.

KESSLER-COLE.—In Gassaway, West Virginia, on Tuesday, August 17th, Dr. Calvin M. Kessler, of Butler, Maryland, and Miss Carrie G. Cole.

MCCOOL-IEHLE.—In Philadelphia, on Tuesday, August 31st, Dr. Joseph L. McCool, of Marcus Hook, and Miss Marion C. Iehle.

PASCIERI-SMITH.—In Philadelphia, on Wednesday, September 1st, Dr. Giuseppe Pasceri and Miss Florence L. Smith.

RODMAN-MEMMINGER.—In Flat Rock, North Carolina, on Friday, August 27th, Dr. Samuel Sayre Rodman, U. S. N., and Miss Marjorie Drayton Memminger.

SMITH-DAVIDSON.—In San Francisco, California, on Tuesday, August 3d, Lieutenant William Hoge Smith, Medical Corps, U. S. A., and Miss Helen Davidson.

SILLIMAN-McCONNELL.—In Philadelphia, on Thursday, September 2nd, Dr. George S. Silliman, of Westbury, New York, and Miss Anne M. McConnell.

Died.

ACKERMAN.—In Fond du Lac, Wisconsin, on Wednesday, August 25th, Dr. J. O. Ackerman, aged sixty-eight years.

AKIN.—In Troy, New York, on Sunday, August 29th, Dr. Washington Akin, aged seventy-four years.

BALL.—In Washington, D. C., on Friday, September 3d, Dr. Charles A. Ball, aged fifty-eight years.

BLOSS.—In Troy, New York, on Thursday, August 26th, Dr. Jabez Parkhurst Bloss, aged eighty-three years.

BORDLEY.—In Centerville, Maryland, on Monday, August 30th, Dr. James Bordley, aged sixty-three years.

CRISPELL.—In Shelter Island Heights, New York, on Monday, August 30th, Dr. Charles W. Crispell, of Kingston, aged forty-nine years.

DIRICKSON.—In Baltimore, Maryland, on Friday, August 27th, Dr. Edwin J. Dirickson, of Berlin.

HENDERSON.—In Denver, Colorado, on Saturday, August 28th, Dr. A. Bruce Henderson, retired lieutenant surgeon, U. S. A., aged thirty-two years.

MCGUIRE.—In Mocksville, North Carolina, on Saturday, August 21st, Dr. James McGuire, aged eighty years.

RASMUSSEN.—In West Allis, Wisconsin, on Friday, August 27th, Dr. J. W. Rasmussen, aged thirty-seven years.

SHEARS.—In Chicago, on Friday, August 27th, Dr. George Francis Shears, aged fifty-three years.

TWEEDY.—In Courtland, Alabama, on Friday, August 27th, Dr. R. E. Tweedy, aged seventy-eight years.

WEEKS.—In Portland, Maine, on Wednesday, September 1st, Dr. Stephen H. Weeks, aged seventy-four years.

WHITNEY.—In New York, on Monday, August 30th, Dr. Albert Beach Whitney, aged seventy-two years.

WORTHINGTON.—In Versailles, Kentucky, on Friday, August 27th, Dr. S. M. Worthington, aged forty-eight years.

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SURGERY OF CIRRHOSIS OF THE LIVER.*

(A Résumé.)

By BENJAMIN MERRILL RICKETTS, Ph. B., M. D., LL. D.,
Cincinnati.

Cirrhosis of the liver, like many other pathological lesions, has never been wrested from the category of hopeless incurables. It has, and probably will wait, in vain, until many thousands more human lives have been sacrificed, as an offering for a want of knowledge, that will even palliate, the pangs, incident to its development, to say nothing of the shortcomings in checking or preventing its occurrence. So long as its etiology and pathology remain undiscovered, nothing but chance experimental research offers any hope. If more were practised even upon willing subjects, the probabilities are that the goal would sooner be reached.

The pathology of cirrhosis of the liver is atrophic and hypertrophic, and due to cardiac, renal, and biliary variations, when not complicated with peritonitis, tuberculosis, or various other disease which may be indefinite, as to duration, as has been demonstrated by its slow and regular progress of many years, when not disturbed by surgical interference.

Etiology. The great majority of cases are due to obstruction of the biliary tract resulting from a simple stenosis, neoplasm, concretions within it, fibrous bands about it, or direct or indirect pressure upon it by other viscera or fluid within the peritoneal cavity.

Experimental research has shown that (venous) anastomosis perfectly done will cure many cases.

Von Eck, 1877, ligated the vena porta and vena cava on a dog to determine its effect upon the portal circulation, while Tillmanns, 1899, ligated the vena porta alone on animals. Oti and Omi, 1901, found that when the vena porta and vena mesenterica were ligated in animals they always lived, but they did not think it wise to do this in man. They found that the blood was diverted through the vena cava and renal veins. During 1893, Nench, Parlow, Kahn, Massen, and Pansini showed by experiment upon live dogs that they could survive Eck's fistula. Seven of these dogs lived for months and became fat; they were well fed, but without meat. Vidal, in 1903, stated at the Congress of Surgeons in Paris, that he did not think well of Eck's fistula.

The following questions arise whenever cirrhosis

of any degree is present, and should be thoroughly considered before attempting to relieve it: 1—If progressive, should a lobe be removed early? 2—If progressive, can it not be checked should the liver be freely incised? 3—If the liver is excessively large should a lobe be removed? 4—Should the liver be drained? 5—When should the galltracts be explored? 6—If the gallducts are closed, what should be done? 7—When does the liver cease to functionate? 8—What is the cause of cirrhosis? 9—How much normal liver tissue is necessary to sustain life? 10—Can either hypertrophy or atrophy be arrested or prevented? If so, what are the limitations?

The fourteen surgical possibilities are described in the following order: (1) Incision through abdominal wall; a, temporary drainage; b, permanent drainage. (2) Puncture through abdominal wall; a, temporary drainage; b, permanent drainage. (3) hepatoctomy; a, temporary drainage; b, permanent drainage. (4) Puncture of the liver; a, temporary drainage; b, permanent drainage. (5) Cholangiotomy. (6) Cholecystenterostomy. (7) Cholecystostomy. (8) Injection of caustics into or upon the liver. (9) Ligation of vena cava and vena porta. (10) Hepatoexcy. (11) Omentopexy, omentofixation. (12) Eck's fistula. (13) Splenopexy. (14) Multiple visceropexy.

In addition to these methods Rafferty, 1900, resorted to splenectomy with attempted surgical cure of ascites due to cirrhosis of the liver.

(1) Incision through abdominal wall; a, temporary drainage; b, permanent drainage. A number of patients have been treated in this way with most gratifying results. A few have recovered permanently while others have been greatly benefited. Why this should be from simple incision with immediate subsequent closure is not understood. Among the most interesting cases of recovery, is that reported by Clay, 1907, who reports one of cirrhosis of the liver cured, as the result of an operation for the relief of strangulated umbilical hernia.

(2) Puncture through abdominal wall; a, temporary drainage; b, permanent drainage. Paracentesis abdominalis has been done for centuries for the removal of fluids of any character or to relieve distention, and its effects upon an enlarged liver, no doubt observed, but it did not become a routine curative measure until late in the last century. McSwiney, 1865, drained the peritoneal cavity twice, to alleviate the urgent symptoms, due to cirrhosis of the liver. Aron, 1868, did it repeatedly, in a given case, for the same condition, due to thrombosis of the vena

*Read before the Cincinnati Academy of Medicine, February 8, 1909.

porta, in which there was persistent biliary secretion. Wilson, 1879 (Youngstown, Ohio), contributes an interesting report, of frequent paracentesis, for cirrhosis of the liver. Courtenay, 1881, records one in the tropics in which recovery resulted from paracentesis three times performed. Duncan, 1831, Armangue, 1881, and Flint, 1883, each speak of the value of repeated paracentesis. Lithgow, 1882, gives one of the first recorded cases of recovery resulting from paracentesis abdominis (twelve times) for cirrhosis of the liver. Macdonald, 1889, reports a recovery resulting from repeated aspirations. Donate, 1885, reports a case in which he made paracentesis sixty-six times. Gravirowski, 1891, ably discussed the influence of paracentesis abdominis in atrophied cirrhosis of the liver on assimilation of fats from food and nitrogenous metabolism. Portes, 1898, in dealing with alcoholic cirrhosis made thirty punctures, removing 234 litres of fluid. Lecreux, 1902, with sixty-five punctures, removed 1,750 litres of fluid.

(3) Hepatotomy (knife); a, temporary; b, permanent. Incising the liver at various depths after having first opened the abdomen, is of recent date. It has been done for both temporary and permanent drainage with more or less benefit, whether the benefit results from hepatotomy alone or the combined influence of peritoneal irritation, resulting from incising it, or the manipulation of the viscera necessary to incise the liver or venous anastomosis resulting from the inevitable hepatoxemy to follow the repair of the liver and abdominal incision has not been determined. Each has an important influence and when all are combined that influence must be more beneficial.

(4) Hepatotomy (trocar); a, temporary drainage; b, permanent drainage. Harley was an advocate of the free use of a large sized trocar in many acute and chronic diseases of the liver, among them cirrhosis. An occasional report of this having been done has appeared. The trocar may be used with or without an incision and the results are similar to hepatotomy with knife, for the same reasons. Hornibrooke, 1886, punctured the liver for hepatic inflammation.

(5) Cholangiostome. Knowsley Thornton, 1887, described a method of draining the biliary tract by which he penetrated the right lobe to the gallbladder if open, if not, to the hepatic duct. This is a most desirable way to do it, especially when the lobe is much enlarged. Also in the event of the common duct only being occluded and the bladder contracted upon itself, this method may result in perfect drainage of the biliary tract. (Ricketts, *Transactions of the New York State Medical Association*, 1889, No. 12, p. 895.) Cut through the lobe of the liver and pull the gallbladder (when large enough) through the lobe as far as possible; anchor it so that it will become united to the liver tissue. When this is done, open the bladder at a subsequent time, drain externally. This is a modified cholangiostomy.

(6) Cholecystenterostomy consists in uniting the gallbladder to the large or small gut that drainage might be more perfected. This has been done by Combenale and Dubar, 1900. It is indeed the exception that this is done with better knowledge, because of the dangers of infection from the alimentary tract.

(7) Cholecystostomy. The operation is a rational one, when the common duct is occluded from any cause, but irrational when the hepatic or cystic duct is closed, or the gallbladder contracted upon itself. Bernard, 1901, drained the biliary tract in this way for cirrhosis of the liver. C. T. Souther, 1906, resorted to this method with fatal results.

(8) Injection of caustics. This has occasionally been resorted to upon the theory that the irritation which they produce would aid materially in increasing the activity of the peritonæum. Among the more common agents employed for this purpose are alcohol and the iodine preparations injected, both crystals and solution into the liver and upon its peritoneal covering. Beerens, 1896, to determine the effects of Vienna paste upon a cirrhotic liver, applied it to this organ after having first performed paracentesis abdominalis.

(9) Ligation of vena cava and vena portæ. Occluding these vessels by ligature has been done several times to divert the venous flow from the liver, but the results have not been altogether satisfactory. It is probably not so good as other less serious methods for the relief of cirrhosis of the liver. Pascalle, 1901, described surgical intervention in cirrhosis of the liver by "catura della vena cava e della vena porta."

(10) Hepatoxemia is done by suturing the liver to the anterior belly wall so that it may become firmly fixed to it. This was accomplished by Delageniere, 1897, in a case in which he also did a cholecystostomy. I wish to cite two of my own cases:

CASE I.—M., white, aged fifty-nine, normal weight 180, 5½ feet high, carpenter; never used alcoholic stimulants or tobacco.

History of infectious or contagious diseases negative.

Weight at time of operation 140 pounds (June, 1908), emaciated, coughing due to bronchial irritation, lower legs greatly swollen, belly distended with large liver and a small amount of fluid. Pulse 76, full, strong, and regular. Great difficulty in controlling action from bowels, feces clay colored. Urine acid, about 3xxiv daily, highly colored. Specific gravity 1.024. No albumin or sugar. Liver occupied upper half of abdominal cavity.

Before any operative proceedings were begun he was informed he could not be cured, and the probabilities were that he could not be benefited. Upon his request after having the proceedings explained in detail, he was prepared by several days of diet and use of rubber stockings; during this time he was kept quietly in bed in a recumbent position.

Operation, June 30, 1908.—One grain of cocaine dissolved in one half ounce of water was injected into the abdominal wall and cutaneous structures, five inches over the right hypertrophied lobe of the liver. At the end of twelve minutes the abdominal wall was rapidly opened upon the anterior surface of the liver. The hand was introduced into the peritoneal cavity and the stomach, pancreas, liver, gall bladder, common and cystic ducts thoroughly examined with but little inconvenience to the patient. No obstruction by concretions or otherwise could be detected, but the gall bladder was hard and contracted upon itself. The incised abdominal wall was sutured to the liver, and omentum with gauze packing, introduced to prevent union of the walls to each other.

He was returned to bed in an excellent condition. The sutures were removed on the tenth day.

Patient can care for himself, has control of bowels, swelling in lower legs and feet of but little consequence, eats well, no fluid in belly cavity, has gained in flesh, walks well, and seems delighted over the result. The improvement was remarkable. He died of exhaustion in January, 1909.

CASE II.—Male, eighteen years of age, white, aortic murmur, extensive eczites in abdomen and scrotum. Urine examination negative as to albumin and sugar. Stools clay colored. Liver about one third larger than normal. Duration of disease about one year.

Operation, August, 1908.—Technique same as in Case I, with cocaine anesthesia, about two gallons of fluid escaped through incision. Recovery from operation uneventful, with reaccumulation of fluid, which was removed at the end of thirty days through puncture in the scrotum by Dr. M. L. Chaney, who attended him.

This was again resorted to at the end of thirty more days, since which time nothing has been done. The benefit this patient has received has been remarkable. He is living, September 3, 1909, and able to take more than moderate exercise, though the ascites has returned.

(11) Omentopexy is accomplished by implanting the omentum into the tissue of the abdominal wall or upon the peritoneum overlying the anterior belly wall. It is also described as epiploplexy omentofixation and venous anastomosis, and is done with suture or other means of fixation. It is described as the Talma, Talma-Drummond and Morrison methods, and has given results for the cure and relief from symptoms far superior to any yet devised. Talma, 1889, began the first rational work for the relief of liver cirrhosis, but it was not until 1892 that von Lens (a student of Talma) reported the results of Memlen's operation, that the advantages of omentofixation were made known. In 1896, Drummond and Morrison reported the first cure due to omentofixation and drainage of the peritoneal cavity. McArthur, 1901, and Hurtado, 1902, implanted the great omentum (Morrison) into the abdominal muscles for cirrhosis of the liver. Weber, 1899, mentions a case in which the symptoms of hepatic cirrhosis were arrested by peritoneal adhesions. Morrison, 1899, cured by operation a case of ascites due to liver cirrhosis. Frazier, 1900, and Clementi, 1900, each record successful results by operations for liver cirrhosis. Roe, 1901, accomplished this with dissolution eight months later, at which time, verifying by autopsy, its effect upon the abdominal viscera (there was present a horseshoe kidney). And Landerer, 1902, did one by the Talma-Drummond method. Zuccaro, 1901, Gardini, 1901, Lastari, 1900, Annovazzi, 1901, Ballin, 1901, White (two cases), 1903, and Shaw, 1903, each report successful results from surgical operations. Keen, 1903, records a case of cirrhosis of the liver with ascites, subsidence of ascites six months after the operation, and nonrecurrence in two years. Herczel, 1902, operated (Talma) for liver cirrhosis, patient observed well one and three quarters years after. Grosz, 1903, succeeded in curing a case of cirrhosis of the liver, while Levai, 1904, did so in two, and Bindi, 1905, one case by Talma's method. Wheeler, 1905, by combining the Talma and Morrison methods, succeeded in curing a case of liver cirrhosis. Monroe and McGregor, 1906, cured a case of cirrhosis of liver by epiploplexy, and Ketchum and Thomson succeeded in doing so by omentopexy.

(12) Eck's fistula. This is accomplished by dividing the vena porta, ligating the central end and implanting the peripheral end into the vena cava, by lateral anastomosis. A patient operated upon by Vidal by this method lived four months. Hematemesis did not return, but ascites returned six weeks before death.

(13) Splenopexy. The spleen may be anchored to the anterior peritoneal wall independently, or together with an omentopexy, or hepatopexy, with most gratifying results, both as to partial and com-

plete cures. Among those who have done this, Norath reports one, Frank two, and Koch one case.

(14) Multiple visceropepy. The possibilities of hepatosplenooementopexy might well be considered. This may be accomplished at one or multiple sittings, preferably one, the primary operation. The result of either could better be accomplished by all. As a greater volume of blood could thereby be diverted with no additional risk, and without impairing the function of either.

Is the degree of benefit greater as the free surface of the peritonæum is lessened? Is not the function of the peritonæum greatly to be considered in the *modus operandi* of the treatment? Are not the benefits thus attained due to both diversion of the venous blood and increased absorption by the peritonæum resulting from the irritation and stimulation which the trauma incident to the operative procedure involves?

These questions have not been satisfactorily answered. Until they are answered, one must be content with the results thus far obtained, and be ever watchful in giving to those afflicted with cirrhosis of the liver, the benefit of the doubt with an operation.

Reports of the Talma operation with its modifications to date are: Cases reported, 1,565; patients cured, 30.4 per cent.; relieved, 19.8 per cent.; unrelieved, 39.2 per cent.; died, 10.6 per cent. (*American Journal of Surgery*, xxiii, pp. 212-213, June, 1909.)

Koch gives his conclusions in the following summary:

1. It is experimentally and clinically demonstrated that omentopexy is able to heal impaired venous circulation resulting from the obstruction or the stricture of the portal vein.

2. The ascites and the gastrointestinal hæmorrhage occurring in atrophic hepatic cirrhosis can be healed by omentopexy.

3. In advanced cases, the operation is dangerous, a much better result is generally obtained if the operation is done in the beginning of the cirrhotic process.

4. The symptoms of impaired venous circulation regress in about thirty per cent. of the operated cases.

5. The hepatic disease itself is probably not modified by the operation.

6. When omentopexy gives no result, splenopexy may sometimes be successful.

7. Eck's fistula once performed on a patient is too severe and must be disapproved.

8. In hypertrophic cirrhosis the drainage of the gallbladder may be recommended.

9. Complication of cirrhosis with nephritis does not contraindicate Talma's operation.

These conclusions are very generally accepted by the most advanced surgeons.

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TREATMENT OF MECHANICAL CONSTIPATION AND OBSTIPATION.*

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Constipation is a common ailment, and one which if permitted to run an uninterrupted course, will, through autointoxication and other manifestations dependent upon it, cause much inconvenience, if it does not in the end induce chronic invalidism. This affection is one to which not enough importance is attached by the physician, and too much by the patient. Some physicians seem to believe that they are treating constipation when they prescribe a medicine or an enema which will bring about an

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evacuation, when in reality they are doing nothing toward accomplishing a cure. Every constipated patient applying for treatment should be asked the question: "Do you desire a remedy which will secure a stool from day to day, or do you wish to be cured of the constipation so that the bowel will act regularly, without the aid of drugs or enemata?" If the first question is answered in the affirmative sense, a cathartic or injection may be prescribed, but if a permanent cure is the object a systematic course of treatment should be outlined according to the necessities of the case. A routine treatment for constipation is impracticable, because of the widely varying aetiological factors responsible for the infrequent stools, and further, because in one instance there may be but one, and in another several causes to account for the costiveness. From what has just been said, it may be inferred that a complete history, and a careful examination of the abdominal organs, the sigmoid flexure, rectum, and anus are necessary in order to arrive at a correct diagnosis.

In studying constipation, it is well to remember that there are three distinct types of this complaint: the *chronic habitual, spastic, and mechanical*. Sometimes, cases are encountered in which two or more of these varieties are combined, in such a way for instance, that there is a chronic obstruction of the bowel induced by the presence of an intestinal adhesion, angulation, or twist, which result in atony of the gut, and require independent treatment after the obstruction has been removed.

Habitual constipation, can, as a rule, be permanently relieved by rectifying errors in the patient's diet, educating him as to his manner of living, and mapping out for him a systematic course of psychotherapy, exercise, hydrotherapy, massage, mechanical vibration, and electricity, alone or in combination. During the past fifteen years, I have rarely resorted to drugs in the treatment of atonic or habitual constipation, and since I have adopted the nonmedicinal plan of treatment, the results obtained have been very much better than before, under the employment of drugs.

Spastic constipation is easier to relieve than either habitual or mechanical costiveness; I am sorry to say, however, that this condition is very often overlooked, and when correctly recognized, is often mistreated. Most frequently, this ailment is induced by mucous colitis, and can be relieved only by curing the underlying disease. When it results from a foreign body, intestinal lesion, or anything which keeps the bowel in an irritable condition and excites enteric spasm, the source of the irritation must be removed before a cure can be expected. It very often becomes imperative to do something for the temporary arrest of attacks of enterospasm, while the primary cause of the trouble is undergoing treatment. The pain and obstipation in this type of costiveness are the direct result of the simultaneous contraction of the circular and longitudinal muscular fibres of the gut, and in order to afford the patient quick relief, it is necessary to administer belladonna and opium, alone or in combination, to apply galvanism or hot fomentations over the abdomen, and to inject hot water or oil into the bowel, for the purpose of inhibiting the motor mechanism

of the intestinal tract, soothing the irritable gut, and causing the contracted fibres to relax, so that the feces may be propelled downward. Physicians at all familiar with this complaint know that the prescribing of strong cathartics, as is so frequently done by the inexperienced, serves to add to the patient's discomfort by exciting an active peristalsis, which augments the enteric spasms.

I regret that no more time can be devoted to a study of habitual and spastic constipation, but my comments in this direction must necessarily be limited, since I wish to consider more fully the aetiology and treatment of a rarely discussed subject, namely mechanical constipation.

Mechanical constipation or obstipation is of very much more frequent occurrence than is generally supposed. If physicians and surgeons were more steadily on the lookout for this complaint, and would familiarize themselves with the different impediments to the fecal current, as well as the reliable methods at hand for their relief, the percentage of cures of persons suffering from chronic constipation would become very much higher in the future than it has been in the past. In order that you may more readily appreciate and understand the object for which the therapeutic measures about to be described are recommended I will first refresh your memory on the aetiology of this type of constipation, by naming the following most common causes of mechanical obstruction of the bowel, or obstipation. They are: Congenital deformities, strictures, tumors, foreign bodies, faecal impaction, adhesions, angulations, volvulus, diverticula, enteroptosis, colonic dilatation, hypertrophy of O'Beirne's sphincter, hypertrophy of the rectal (Houston's) valves, hypertrophy of the levator ani and the sphincter ani muscles, deviated coccyx, and diseases of the rectum and anus.

Owing to the large number of conditions which may induce obstipation, I will not attempt to do more than briefly consider the therapeutics best adapted to the relief and cure of the typical forms under which each of the mechanical causes as enumerated may exist in a given case. In so far as the curative treatment of mechanical constipation is concerned, medicines are useless and physical methods do but little, with few exceptions. Consequently, in order to relieve and cure this type of constipation, reliance must be placed almost entirely upon surgical procedures.

Obstipation depending upon congenital deformities of the colon can usually be corrected by colopexy, exclusion, or in extreme cases, by colostomy or resection, when the bowel is elongated, misplaced, or angulated, and interrupts the fecal current. Congenital deformities or malformations located in the rectum or at the anus may require for their relief either a capital or a simple operation, depending upon their nature. When the anal canal is unusually narrow, its calibre may be increased by dilating it with the finger or bougie, but if this simple procedure fails, the outlet should be widened by making a deep posterior slit and letting the wound heal by granulation, during which time an occasional anal divulsion is practised. If the anus or rectum is clogged by a fibrous band or diaphragm, the band should be seized with forceps and trimmed

off, and the finger introduced occasionally, to prevent an undue contraction during the process of repair. The most troublesome cases of congenital deformity of the bowel are those where the anus is absent, and the rectum ends at a greater or less distance above its normal termination in a blind pouch, or opens into the bladder, vagina, or urethra; or the anus is normal and the rectum ends blindly at a variable distance above it. When the anus is absent, an incision should be made over its normal site, which is usually indicated by a dimple, and dissection carried upward until the lower end of the rectum is reached and freed from its attachments. The detached bowel is then opened, washed out, drained, and sutured to the skin. In this operation it may become necessary to incise the tissues back to the coccyx, to obtain sufficient room, but I do not believe one is justified in removing or turning aside a part of the sacrum for this purpose. Where the opening ends in the vagina, the termination of the gut should be loosened by an elliptical incision and the anus restored to its position, after the bowel has been freed according to the manner indicated. In aggravated cases, where the rectum terminates in a blind end, and is so high that it cannot be reached from below, or opens into the bladder or urethra, it is advisable in most instances to immediately relieve distention and give vent to the meconium by establishing an artificial anus, and leave the more radical operation until a later date, when the patient is better able to tolerate it.

Strictures which occlude the bowel to a moderate degree, induce constipation, while those which are very tight and complicated by ulceration, give rise to diarrhoea. The nonoperative or palliative treatment of intestinal stenoses consists in the administration of laxatives and oils by mouth, and enemata per rectum, to soften the stools and enable them to pass the constriction, and in regulating the diet so as to diminish the bulk of the excrement.

In order to satisfactorily relieve the patient one most sooner or later resort to one of the following procedures: (a) divulsion; (b) internal proctotomy; (c) external proctotomy; (d) excision; (e) intestinal excision; or (f) colostomy. *Divulsion* may be gradual and be performed without an anæsthetic, by means of the finger, anal dilators, or rectal bougies; or forcible, under general anæsthesia, where it is accomplished with the fingers, thumbs, bougies, or mechanical dilators. Since strictures are usually accompanied by extensive ulceration, divulsion is to be discontinued when the stenosis is more than three inches above the anus, because of the danger of rupturing the bowel and setting up a peritonitis. *Internal proctotomy* is a simple operation, and consists in passing a probe pointed bistoury through the stricture, and then dividing it at two or more points; but this procedure is not desirable, because no suitable provision is made for drainage. *External proctotomy*, barring excision, is the most useful operation thus far devised for the relief of rectal stricture. Here the index finger guides the bistoury through the constriction, when it is turned backward and withdrawn, severing the sphincter. rectum and tissues posterior to the bowel as far backward as the coccyx. Such a cut widens the rectal outlet, permits the ulcers to be easily treated,

and enables the operator to dress the wound with little pain and in a way that permits effective drainage, owing to the fact that there is no obstruction offered by the sphincter muscle. Deplorable strictures which cannot be relieved by the measures described, should be resected or removed by excision. When situated in the lower three inches of the rectum, they can be satisfactorily removed by inferior (perineal) proctectomy, or by vaginal excision; when located in the middle portion of the rectum, by superior proctectomy, or Kraske's operation; and when they involve the upper rectum and sigmoid flexure, by cælioproctectomy; and when still higher up, by colectomy or enterectomy. High inoperable stenoses are best relieved by excluding the involved segment of gut by anastomosing the upper with the lower segment, or by dividing the ileum closing one end and performing ileorectostomy, or by establishing an artificial anus in the left inguinal region.

Malignant tumors should always be excised or removed at the earliest opportunity, whether the amount of obstruction produced by them is slight or considerable. When a growth is operable and situated above the rectum, it should be resected between two sets of clamps, and the divided ends united by end to end or lateral anastomosis, by the sutures alone method in preference to the use of the Murphy button or other mechanical aid. When a tumor occupies the lower, middle, or upper part of the rectum, it should be removed by inferior, superior, vaginal, or cælioproctectomy, and the proximal end of the gut sutured at the sphincter when feasible. Inoperable neoplasms must be relieved by exclusion of the involved segment, or by colostomy. Benign tumors of the colon, causing marked obstruction, are treated in the same way as malignant neoplasms except when they are pedunculated and can be removed through the proctoscope or sigmoidoscope.

Foreign bodies in the small intestine, which are not large or encysted can often be dislodged and propelled downward by giving the patient coarse foods and an abundance of oil, in combination with cathartics or enemata. Mild friction, massage, carefully employed, may assist the downward passage of the offending body. Enterospasm is best controlled by hot abdominal fomentations and belladonna internally, to relieve irritation and cause the bowel to relax. When these measures fail, surgical intervention is indicated, and may consist in simple slitting of the small intestine (enterotomy) or the colon (colotomy), and lifting the foreign body out with forceps. Resection of a segment of gut (colectomy) is advisable in the treatment of otherwise inaccessible foreign bodies, which are large, or have become encysted, or cause extensive ulceration. Foreign bodies which have become impacted in the sigmoid flexure or the rectum and do not yield to nonoperative measures are best removed through the sigmoidoscope or proctoscope with strong intestinal forceps. From the lower rectum, where they are apt to excite sphincteralgia, firmly embedded foreign bodies may be quickly removed under general or local anæsthesia, following divulsion or division of the sphincter.

Accumulations of fecal matter in the rectum or lower sigmoid which cause obstruction are more

easily dislodged than those situated higher up in the colon. Recent colonic impactions usually yield within a few hours to high and low enemas of warm water, soapsuds, oil, or glycerine, which softens them and lubricates the bowel, but a long standing retention naturally requires patience and persistent treatment for a number of days, before its removal can be accomplished, because the mass is protected against the action of the solvents by a coating of mucus, and moreover because it irritates the intestine and gives rise to enterospasms. An impaction near the anus can be readily turned out with the finger or the handle of a spoon, while masses in the sigmoid flexure and upper rectum can always be dislodged and swept out by frequent washings, after they have been broken up through the sigmoidoscope or proctoscope with a gauge. The treatment of fecal impactions lodged in the cæcum and transverse colon, in addition to the measures already recommended, should consist in the internal administration of liquid paraffin or olive oil to lubricate the bowel and favor the propulsion of the contents downward to the rectum. The employment of purgatives under such circumstances is to be strongly condemned.

Surgical measures—enterotomy or colotomy, according to the location of the impaction—are in order as soon as the procedures hitherto recommended fall short of the desired end, and when the bowel is necrotic or ulcerated to a dangerous degree. When obstruction is complete and the patient is reduced to an alarming condition through the associated distention and the effects of virulent bacterial flora, it is advisable to open and drain the bowel, postponing the removal of the mass to a later date. Resection, or enterectomy, or colectomy, may be unavoidable in extreme cases where coprostasis is complicated by extensive ulceration or sloughing of the gut.

The degree of obstipation induced by *adhesions* varies in wide limits, according to the character and location of the bands. The calibre of the gut may be obstructed at one or several points, as the result of agglutination or the formation of firm contracting bands, which induce direct pressure, angulation, or twisting of the intestine. The treatment of obstipation induced by adhesions may be prophylactic, physical, or surgical. Among the measures which have been suggested for the prevention of postoperative adhesions are the avoidance of surgical traumatism, intraperitoneal hemorrhage, the application of a solution of gum arabic to increase the slipperiness of the intestines; the leaving of a quart of normal salt solution within the abdominal cavity, to favor floating and gliding of the loops over each other; moistening of the peritonæum with Favel's solution; lubrication of the damaged serosa with fat; covering of raw surfaces with bismuth subiodide, aristol, or Cargyle's membrane; and the injecting of fibrolysin (a sterilized solution of thiosinamine and sodium salicylate) to hasten the absorption of exudates. The administration of atropine, or the salicylate of eserine (1-60 to 1-40 grain subcutaneously) three times daily to promote peristalsis and prevent long continued contact of the intestinal coils, following operation. New adhesions can

sometimes be overcome by frequently changing the position of the patient or resorting to friction massage or mechanical vibration, but physical measures are of little use in the treatment of old or firm adhesions. When an operation is performed for the relief of obstipation induced by adhesions, much care must be exercised to avoid injury to the bowel. In recent cases, adherent loops can be separated by wiping them with a gauze compress or rolling them between the fingers. Fibrous bands which require severing should be brought outside and divided with knife or scissors while in plain view, and if vascular, a double ligature should be thrown around them in advance. When the bowel has been freed, bleeding should be arrested, and when possible all raw surfaces upon the gut and elsewhere should be sutured or protected by a peritoneal covering, before closing the abdomen. When it is impossible to liberate or resect the bowel, because of extensive contracting adhesions, the involved segment should be excluded and a short cut made for the fecal current by enteroanastomosis, or an artificial opening should be made above the point of obstruction.

Angulation and volvulus are among the most frequent causes of chronic mechanical constipation, and as a rule they are comparatively easy to correct. Angulations resulting from a very long and ptotic colon can be speedily overcome by stitching the gut to the anterior abdominal wall (colopecty), but when due to adhesions, the contracting bands must first be divided, and the bowel straightened out and then anchored to some organ or the parietes to prevent the raw surfaces from becoming reunited again; and when caused by an elongated mesentery, this can be shortened by mesocoloplication. When these operative procedures fail, the same measures recommended for relief when the bowel is incapacitated by adhesions should be put into practice.

Chronic volvulus is much easier to handle than the acute type, where in addition to the twist, one has an acute inflammatory process to deal with. Volvulus uncomplicated by adhesions can be relieved, and recurrence prevented, by colopecty, but when the legs of the loop are firmly bound together by adhesions, the segment of gut must be removed, excluded, or a vent must be made above the twist through which the fæces may escape.

Diverticula of the colon, sigmoid, and rectum, are of more common occurrence than is generally assumed. In my work on constipation and intestinal obstruction I have cited several very interesting cases which occurred in my practice. The method of dealing with these pockets varies according to their shape and location. Narrow, hollow diverticula of the small bowel and colon can be ligated and removed, or excised and the stump inverted, as in appendectomy. When of larger size and oval in shape they can be gotten rid of by coloplication, inverting and suturing the bowel over them, or by removing them by means of elliptical incision and suturing the wound. Large pouches and diverticula which have induced acute obstruction or abscess, should be brought to the surface and drained, leaving the gut to which they are attached to be resected later; but when there is not complete obstruction they should be removed at once by resec-

tion. It is only in exceptional and very aggravated cases that one is justified in resorting to colostomy or exclusion in this class of cases.

It is well known that *splanchnoptosis*, Glénard's disease, or general enteroptosis, always induces a severe type of constipation, which cannot be relieved except by restoring and retaining the ptotic organs in position. This cannot be satisfactorily attained except by having the patient rest in bed with the hips elevated, wear an abdominal supporter, or resorting to surgical intervention. The operative measures devised for the relief of gastropptosis, nephropptosis, hepatopptosis, and splenoptosis, have been fully described in the standard works on surgery, but the operations designed to overcome intestinal ptosis have received little or no attention. During the past decade I have successfully operated seventy-nine times for ptosis of the colon, sigmoid flexure, and rectum, and the results obtained, with some three or four exceptions, when there were other complications, have been universally satisfactory.

Nearly all operations performed for the relief of intestinal ptosis are done upon the colon, sigmoid flexure, or rectum because the small intestine when displaced usually returns to its position after other ptotic viscera which press upon it have been replaced. In my series of cases, the entire colon has been found collapsed in but few instances, but ptosis of the sigmoid flexure, transverse colon, cæcum, or ascending colon, have been frequently encountered. When the entire large bowel is down, it should be sutured at a number of points, working from right to left until it is attached to the anterior abdominal wall all round on a level with its natural location. In doing this, extreme care should be exercised to see that the corners or flexures are rounded and not sharply angulated, and that the suspensory sutures are grouped sufficiently close together to hold the bowel in position and at the same time prevent the intermediary segments of the gut from sagging. In extensive operations of this kind, the peritoneal surfaces of the gut and the abdomen are approximated after the bowel has been scarified. When the cæcum, the sigmoid flexure, or any single part of the colon is to be anchored, the parietes should first be denuded of peritonæum, so that the scarified intestine can be brought directly into contact with the fascia, in order to obviate a possible recurrence of the ptosis from the formation of a peritoneal ligament caused by the dragging of the bowel. Nearly all colopexies can be performed through a median incision, by the aid of a long handled needle with which to place the suspending sutures, but if the operator desires, the incision may be made through the right rectus, when the cæcum is to be suspended and the left, when the sigmoid is to be fixed. When the peritoneal surfaces of the gut and parietes are to be approximated, I use No. 1 chromicized or iodine catgut stitches which are passed through the peritonæum, fascia, and then the musculature of the bowel, and finally out through like structures on the other side of the wound; but when the gut is united directly to the fascia of the abdomen at the site of the wound, I employ Pagenstecher's linen thread and carry the stitches entirely through the abdomen on one side, then take three

deep bights in the gut, bring them out in a similar manner on the opposite side and then tie them over rubber tubing or a roll of gauze to prevent their cutting the skin, after the incision has been closed by the layer method. From three to five stitches are used at each point of fixation. If the intestine is to be anchored at a considerable distance from the wound, the technique is varied by carrying the stitches through the intestine first; they are then threaded in a long handled needle and guided by the fingers to the point of anchorage, where the needle is pushed through the abdominal wall, leaving the threads on the outside to be tied after the needle has been withdrawn.

On a few occasions, when the mesentery was long, I have divided the rectus muscle, pushed it through an opening made in the mesentery, and united it to its fellow on the opposite side, thereby suspending the sigmoid on the muscle, and have had no reason to regret having done so. In other instances, where the gut was of unusual length, and inclined to fall into twists and angulations, I have distributed it in circular fashion over the anterior abdominal wall, by multiple fixations, or by folding and suturing the mesentery and the bowel in such a way as to form an extra loop in the descending colon, and then suspending it in the usual way. In still other cases of aggravated ptosis, where there was no possibility of suspending the bowel, no matter at how many points, so that it would not sag and serve as a reservoir for faecal accumulation between the points of fixation, I have practised the following procedure: First, the bowel was suspended at two points about three inches apart, so that it hung like a swing, then the innermost borders of the outside legs of the two suspended loops were anastomosed below the sagging segment, thereby forming a direct communication between them and enabling the fæces to enter directly from the proximal part of the gut above to the distal below, without passing through the excluded segment of bowel. Again, I have shortened the gut before it was anchored, by scarifying it, and pushing the upper segment into the lower, and forming an invagination by suturing their peritoneal surfaces together,—but prefer the above described procedures to the one just mentioned. My experience with colopexy under varying conditions warrants me in prophesying that this operation will be much more extensively employed in the future in the treatment of constipation than it has been in the past.

Constipation and other manifestations arising from *dilatation* of the colon, congenital and acquired, are best relieved by reducing the size of the gut one third or more by markedly infolding it at three different points (coloplication) by means of Lambert-like sutures, which are made to take several deep bights in its musculature before they are tied, and then by fixation of the gut to the abdominal wall, when both colonic dilatation and ptosis exist.

Hypertrophy of O'Beirne's sphincter, or the thickening of the circular muscular fibres located at the rectosigmoidal juncture, occasionally induces obstipation. Under such circumstances, it is advisable to introduce the proctoscope up to a point just below the sphincter, and then dilate it with a bougie, but when the divulsor is to be left *in situ* for from

a few moments to several hours, a modified Barnes's bag or Hirschmann dilator should be employed. In some instances, however, constipation may be induced by the spasmodic contraction of O'Beirne's sphincter caused by the presence of an ulcer or an inflamed spot. In such cases topical applications like the balsam of Peru or ichthylol should be made to the ulcer, or an emulsion composed of olive oil, bismuth, and iodoform should be injected to soothe and heal the inflamed surface, while at the same time hot fomentations are applied over the sigmoid flexure to relieve enterospasm.

Rectal valves, which are hypertrophied and project into the bowel sufficiently to obstruct its lumen, can be easily divided by pressure necrosis, with the aid of my valve clamps. The cutting operation suggested by Martin is difficult, dangerous, and confines the patient to bed for several days, while my valvotomy can be done in the office, and permits him to be about and attend to his usual duties. Valvotomy to be successful should be followed in most instances by a systematic course of massage, mechanical vibration, or electricity to tone up the bowel.

Occasionally the *levator ani* muscles become hypertrophied and interrupts the passages. In such instances I have been able to relieve the resulting constipation either by subcutaneous tenotomy of its coccygeal attachments or by performing myotomy at the point where the levator ani crosses the rectum, after it has been reached through a posterior medium incision.

Hypertrophy of the sphincter muscle can sometimes be relieved through gradual divulsion by means of anal dilators or bougies, or by forcible divulsion under ether with the fingers or thumbs, but more often these measures fail to afford permanent relief owing to the tendency of the muscle to recontract, and because of this I prefer to anesthetize the muscle by the injection of eucain ($\frac{1}{2}$ per cent.) and completely sever it, an operation performed by me many times with universal success.

When the *coccyx* is deviated, projects into the rectum, and acts as an obstruction, it should be promptly excised, a procedure which ought not to occupy more than three minutes when performed after my method and which is immediately followed by cessation of the constipation.

Polyps which obstruct the bowel directly or by exciting sphincteric contraction should be removed by torsion when located in the sigmoid flexure, or by placing a valve clamp upon their pedicle and allowing them to slough off, or by ligating and removing them when situated in the lower rectum.

External cutaneous hemorrhoids, which keep the anus in an irritable state, should be snipped off. *External thrombotic piles*, which excite sphincteric contractions, should be transfixed and the clot evacuated, and *internal protruding piles*, which block the anus, should be removed by the clamp and cautery or ligature operation. Recently I have operated upon hemorrhoids almost exclusively under local anesthesia, and the results have been uniformly pleasing.

Anal fissures inducing constipation may be treated by forcible divulsion under ether, but never by gradual divulsion without an anesthetic, because of the great pain it causes. Personally, I have dis-

carded divulsion for incision of the sphincter in the treatment of fissure, because much more rapid and lasting results have been obtained where I have cut the sphincter and widened the anal outlet. I inject enough of a $\frac{1}{2}$ per cent. eucain solution into the tissues behind the fissure, to cause them to turn white, which indicates complete anesthesia, and then sever the muscle with knife or scissors. This operation causes absolutely no suffering, but post-operative pain is severe and should be arrested by hypodermic injections of morphine.

Ulcers in the upper rectum do not give rise to constipation, but when situated at the anal margin produce it in the same way as do fissures, consequently they require similar treatment, namely, division of the sphincter and topical applications.

CONCLUSION. Viewing mechanical constipation or obstipation in the light of the manifold factors which may produce it, and the close relation that they bear to the question of a permanent cure, it will be realized that the physician is confronted in this respect with conditions he cannot afford to ignore. These malformations and diseases of the intestine are not always easy to discover, but once their existence has been ascertained, they can usually be removed by competent surgery, with the outcome that an otherwise intractable constipation is permanently cured. It is in this sense that I wish to bring them to the attention of this gathering, and the object of my remarks will have been accomplished if they have helped to make clear the gravity, no less than the curability, by appropriate measures, of this very common ailment, which is only too often accepted by both physician and patient as an unavoidable and irremediable evil.

43 WEST FIFTY-SECOND STREET.

A SIMPLE METHOD FOR THE DETERMINATION OF CASEIN IN COW'S MILK.

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(Contribution from the Chemical Laboratory of the New York Agricultural Experiment Station, Geneva.)

In the modification of cow's milk in connection with the feeding of infants, it is highly desirable that the percentage of casein in the milk be known if one is to work with precision. Several unsuccessful attempts have been made to find a simple, quick, and reasonably accurate method, which would be practicable in the hands of physicians.

The method described in this paper requires only apparatus and reagents that are in common use; its operation in the determination of casein in a sample of milk requires only twelve to fifteen minutes; and the results are, in our experience, reasonably accurate, usually coming within one or two tenths per cent. of the correct amount. With proper equipment several samples can be run simultaneously with much economy of time.

Before giving the details of the method, it is well to have the process in mind in outline. A given amount of milk, diluted with water, is made neutral to phenolphthalein by addition of a solution of so-

dium hydroxide. The casein is then completely precipitated by addition of standardized acetic acid; the volume of the mixture is made up to 200 c.c. by addition of water and then filtered. Into 100 c.c. of the filtrate a standardized solution of sodium hydroxide is run until neutral to phenolphthalein. From the difference between the amount of acid and the amount of alkali used, a simple calculation enables one to determine the percentage of casein in the milk examined.

DESCRIPTION OF METHOD.

1. *Measuring and Diluting Sample of Milk.* The milk to be examined is well mixed, and 20 c.c. run into a 200 c.c. flask, to which is added about 80 c.c. of water.

2. *Neutralizing the Milk.* Add 1 c.c. of phenolphthalein solution to the diluted milk and then run into it a solution of sodium hydroxide until a faintly, but distinctly, pinkish shade of color remains through the mixture even after considerable agitation. Any marked excess of alkali must be avoided.

(a) Preparation of a color standard.—More uniform and satisfactory results can be obtained in this step of the process by preparing a color standard for comparison. One method of accomplishing this is as follows: About 20 c.c. of fresh skim milk and 80 c.c. of water are put into a 200 c.c. flask and a small amount of mercuric chloride added to keep the milk from curdling. A few drops of ordinary carmin ink are considerably diluted with water and this is carefully added, a few drops at a time, to the diluted skim milk until a faint but distinct pinkish coloration appears. This can be more readily and accurately perceived by placing beside the flask another flask half full of uncolored, diluted milk. The coloration must be as slight as possible and yet be appreciably distinct when compared with uncolored milk. After the color standard has been prepared, the flask is stoppered and kept in a dark place when not in use. In the case of some carmin colors, the pinkish shade in the milk may deepen on standing, especially when exposed to light. If at any time, this is observed, the proper shade can be reproduced by slight dilution with skim milk. The object of using skim milk in preparing a color standard is to avoid the presence of fat, which in case of whole milk separates on standing, adheres to the sides of the flask and obscures the color.

(b) Use of color standard.—In neutralizing a sample of milk, the color standard is placed beside the sample under examination for constant comparison after each addition of alkali. The flasks should be placed on a white surface and in a good light in order to render more sharp the observation of the coloration. In fresh milks, it is usually found that 3 or 4 c.c. of tenth normal alkali is sufficient to neutralize the milk. In cases where milk is not strictly fresh or where it has been kept for some time with mercuric chloride, usually from 5 to 10 c.c. may be required. One can usually add 2 or 3 c.c. of alkali at the start and then add it in smaller portions, until the milk begins to show signs of neutrality. After that the alkali is added a drop at a time, the flask being shaken after each addition and the color being observed. A little experience enables one to perform this operation with rapidity and accuracy.

3. *Precipitation of Casein.* (a) Addition of acid.—Into the neutralized sample of diluted milk, which should be at a temperature of 18° to 24° C. (65° to 75° F.), one now runs tenth normal acetic acid, adding the acid in approximately 5 c.c. portions and agitating vigorously for a few seconds after each addition. It is usually safe to add about 25 c.c. of acid before examining the milk to see if the casein is separating in the form of white flakes. After adding 25 c.c. of acid and shaking, the mixture is allowed to come to rest. If enough acid has been added, the casein separates promptly in large, white flakes, and, on standing a short time, the liquid above the settled casein appears clear and not at all milky. If the addition of 25 c.c. of acid is insufficient to separate the casein properly, add 1 c.c. more of acid and shake; continue the addition of acid, 1 c.c. at a time, until the casein is observed to separate promptly and completely on standing at rest a short time. The number of c.c. of acid used to effect precipitation is noted and this result is recorded as *A*.

(b) Influence of temperature.—For convenience and uniformity of results, the temperature of the mixture at the time of the addition of acid may be between 18° and 24° C. (65° and 75° F.). Under these conditions, we have found that in most of the milks with which we have worked, 30 c.c. of tenth normal acetic acid gives satisfactory results. In some cases, especially with the milk of cows far along in lactation and high in casein (3.5 to four per cent.), we have had to use as high as 35 to 40 c.c. of acid. We have seldom found any case in which 25 c.c. of acid was excessive. The amount of acid may be 2 or 3 c.c. in excess of that required to effect complete precipitation without seriously affecting the accuracy of the results, provided the temperature of the mixture is below 24° C. (75° F.). At higher temperatures, good results are attainable but care must be exercised not to use much excess of acid; and, of course, the higher the temperature, the less will be the amount of acid required for precipitation. In working at temperatures below 18° C. (65° F.), the casein separates more slowly or requires more acid to separate promptly. In case of milk that is much below 18° C. (65° F.), it is well to use for dilution water that is at a temperature of about 27° C. (80° F.).

4. *Filtration of Casein.* After the casein is completely precipitated, water is added to the mixture up to the 200 c.c. mark and the contents are vigorously shaken for ten or fifteen seconds, in order to make the distribution of acid through the mixture as uniform as possible. The contents of the flask are then poured upon a dry filter. It is generally well to allow the filtration to continue until practically all of the liquid has been filtered.

(a) Rapidity of filtration.—The usual time of filtration should not exceed three to five minutes, when precipitation is complete. The rapidity depends upon the temperature of precipitation and the completeness of the separation of casein. In general, the higher the temperature of the mixture when precipitated with acid, the more rapid should be the filtration, other conditions being uniform. In case of insufficient acid, the filtration is slower.

(b) Appearance of filtrate.—The filtrate should

be quite clear, though this is not always a sure indication that the right amount of acid has been added to effect a perfect precipitation. Sometimes the filtrate may be clear, when not quite enough acid has been added, in which case the percentage of casein found is apt to be low; under such circumstances filtration is usually slow. In case of milks rich in fat, a slight turbidity may appear, due to fat globules in the filtrate. The filtrate should be free from all signs of marked turbidity or anything like milkiness. If such a filtrate appears, a new sample of milk should be taken and the operation repeated from the beginning, more acid being used than before.

5. *Titration with Alkali.* After filtration is completed, one takes 100 c.c. of the filtrate and runs into it tenth normal solution of sodium hydroxide until the reaction is neutral to phenolphthalein. The number of cubic centimeters of alkali used is noted and this result is recorded as *B*.

The exact neutral point is not perfectly sharp on account of the presence of phosphates, and the appearance of the end reaction is not as pronounced as might be desired. However, with experience one should have no difficulty in getting within one drop of the correct amount of alkali. One should work to obtain the same shade and duration of color every time. In general, one takes for the end reaction the appearance of a faint but distinct pink coloration, which remains clearly marked through the solution for half a minute or longer before beginning to fade. In the case of milks rich in phosphates, the solution usually grows quite turbid as the neutral point is approached, making it necessary to use special care in observing the color of the end-point of the reaction.

If one desires to make a second titration of the same filtrate, one can use 50 c.c. of the remaining portion, multiplying the result by 2 and recording this as *B*.

6. *Calculation of Results.* The calculation of the percentage of casein from (a) the amount of acid used (*A*) in precipitating the casein and (b) the amount of alkali used (*B*) in neutralizing 100 c.c. of filtrate, is very simple. Divide *A* by 2, from the result subtract *B* and multiply the result by 1.0964; or, expressed as a formula,

$$\left(\frac{A}{2} - B\right) \times 1.0964 = \text{per cent. of casein.}$$

By using 22 c.c. of milk instead of 20 c.c., the formula becomes simply $\frac{A}{2} - B = \text{per cent. of casein}$; in this case each c.c. of tenth normal solution being equivalent to 1 per cent. of casein.

7. *Use of Preservatives.* In making casein determinations by this method, it is desirable when possible to use milk comparatively fresh. Milk that is sufficiently acid to coagulate on boiling or that is well soured can not be used with satisfactory results. However, by adding to fresh milk powdered mercuric chloride in the approximate proportion of 1:1000 or 1500, and keeping the mixture in a cool place, we have been able to obtain satisfactory results with milk that had been kept for two or three weeks. Milk thus treated should be shaken often enough to keep the fat well incorporated in the body of the milk.

A NEW DIAGNOSTIC SKIN REACTION IN THE ACUTE INFECTIONS.

BY LEONARD K. HIRSHBERG, A. B., M. D.,
Baltimore.

On March 13th of this year, when about to inoculate a patient with 400,000,000 staphylococci from a stock vaccine, it occurred to me that it might be possible to diagnosticate accurately the species and variety of infecting organism, by scarifying a small area of the skin with a definite amount of each of the dead organisms suspected.

The method I have been employing is as follows:

The hairless portion of the arm or forearm is cleaned with ether. No alcohol, soap, water, or other disinfectant is used. Five or more scarifications are made (the number is dependent on the varieties of vaccines used) with a small metal screw driver like lancet. The blade is 0.3 centimetre broad and half moon shaped. This makes an ideal scarifier when given the rotary motions of a screw driver. It is so tempered that the half moon blade may be repeatedly sterilized in an alcohol flame without injury. The scarifications are made in two parallel columns an inch apart. Between each vaccination the scarifier is sterilized in the alcohol flame, thus preventing contaminations or mixed vaccines. The ends of the tubes containing the various vaccines are wiped with sterile gauze to clear away the spicules of glass.

The usual amount of the various vaccines taken have been 2,000,000 gonococci; 40,000,000 staphylococcus aureus; 4,000,000 streptococci; 8,000,000 colon bacilli, and 4,000,000 typhoid bacilli. In each case the amount corresponds to 0.1 c.c. of the stock vaccines of manufacturing laboratories.

The skin is scarified with sterile water, a salt solution of physiological strength, or fifty per cent. glycerin and one per cent. phenol in isotonic salt solution. This is used as a control. Usually five other vaccinations are made. The types of organisms used depend upon the suspected infection.

The first case in which I employed this method was one of those rare continuous fevers, described in the *Journal of the American Medical Association*, February 2, 1907. Agglutinations with typhoid, paratyphoid, colon, and lactis aerogenes bacilli had been repeatedly negative.

CASE I.—The patient, L. B., æt. twenty-five, was an unmarried woman. It was the thirteenth day of the disease. Her temperature varied between 100° and 102.4° F.

With the assistance of the superintendent of the hospital, Miss Pearl Burling, and the patient's nurse, Miss Richards, her left forearm was cleaned with ether and five points of scarification were made as described above. Four million typhoid bacilli, eight million colon bacilli, four million streptococci, 0.1 c.c. of a sterile normal salt solution, and forty million of staphylococcus (aureus) were vaccinated into the forearm in two parallel columns, one inch apart. They were allowed to dry, and no dressing was applied.

Observations and notes were made every six hours. At the end of the first six hours no change was noted. In twelve hours the streptococcus vaccination showed a hyperæmic areola. There was no change in the others. In eighteen hours the hyperæmia had increased, and a definite ring of induration and infiltration could be palpated over the streptococcus area. About the same time, the site of staphylococcus vaccinated became a bit reddened, but this cleared up with no additional change. The other scars showed no reactions whatever.

At the end of twenty-four hours the reaction at the site of the streptococcus vaccination was at its height. It was

characterized by the occurrence of a reddish zone of circular, infiltrated tissue. An irregular, indefinite, purple red margin surrounded this. The centre was the apex of the elevation.

Later tests proved this to be a moderately good reaction. Therefore, I have divided the degrees of this new skin reaction into three stages.

A fairly good reaction shows a slightly reddened area in the neighborhood of 5 mm. in diameter with slightly tense, firm, and hard centre.

A moderately good reaction shows the hyperæmic area about 10 mm., persistent and distinctly infiltrated.

A very good reaction shows a distinctly oedematous site about 25 mm. or more and marked infiltration and hyperæmia.

Upon what this reaction depends has not yet been determined. It is possible that the tissue cells and lymph of the individual have been more or less sensitized to the specific toxic products of the infecting agent. Further experiments and observations are to be made in an attempt to settle this point.

So far this method has been used in twenty-two cases. Known cases were sometimes taken in order to determine the value of the method.

CASE II.—Dr. Claude Stoncipher called me to see J. S., whose temperature had been above 102° F. for three days. He had a right sided hemiplegia and complete motor-aphasia. An old valvular lesion indicated an embolus in the left middle cerebral or its branches. The patient was vaccinated with gonococci, staphylococci, streptococci, color, and typhoid bacilli. The result was no reaction at any point.

CASE III.—Dr. Sherman called me to see a patient with facial erysipelas. Of the six species of organisms used, the streptococcus reacted alone and quite violently.

CASE IV.—In consultation with Dr. Henry Flood, I saw a young boy, æt. eleven, who had fallen to the deck from the bridge of an ocean liner. He was taken to the Biedler-Sellman Hospital. Following a severe vomiting spell, a posterior pressure headache followed, and a rise in temperature to 101° F. This fever continued five days. There was no loss of consciousness and no other symptoms. Six vaccinations with the above named organisms showed no reaction. The other eighteen cases may be tabulated as follows:

Case.	Species of organisms used to vaccinate.	Species that gave reaction.
Typhoid.....	Colon, paratyphoid, streptococcus, staphylococcus, gonococcus	Typhoid
Typhoid.....	Pneumococcus, colon, paratyphoid, streptococcus, staphylococcus, aureus	Typhoid
Typhoid.....	Pneumococcus, bulgaricus, typhoid, colon, paratyphoid	Typhoid
Paratyphoid...	Colon, typhoid, paratyphoid, bulgaricus, lactis aerogenes	Lactis aerogenes and paratyphoid
Appendicitis...	Colon, typhoid, pneumococcus, staphylococcus, streptococcus, aureus	Streptococcus and staphylococcus
Hirschberg's infectious fever	Paratyphoid, typhoid, lactis aerogenes, streptococcus, and staphylococcus aureus	Streptococcus
Erysipelas....	Paratyphoid, typhoid, pneumococcus, streptococcus, and staphylococcus aureus	Streptococcus
Impetigo.....	Paratyphoid, typhoid, staphylococcus citreus, streptococcus, and staphylococcus	Streptococcus
Furunculosis...	Paratyphoid, typhoid, staphylococcus citreus, streptococcus, and staphylococcus aureus	Staphylococcus aureus
Furunculosis...	Paratyphoid, typhoid, staphylococcus citreus, streptococcus, and staphylococcus	Staphylococcus aureus
Furunculosis...	Staphylococcus aureus, albus, citreus, streptococcus, pneumococcus	Streptococcus albus et citreus
Pneumonia....	Staphylococcus aureus, typhoid, pneumococcus	Pneumococcus
Amygdalitis...	Staphylococcus typhoid, pneumococcus, streptococcus, pneumococcus	Streptococcus and staphylococcus
Amygdalitis...	Staphylococcus, typhoid, pneumococcus, streptococcus, pneumococcus	Staphylococcus

Case.	Species of organisms used to vaccinate.	Species that gave reaction.
Emphyema.....	Staphylococcus, typhoid, pneumococcus, streptococcus, pneumococcus	Pneumococcus
Gonorrhæal arthritis.....	Staphylococcus, gonococcus, typhoid, streptococcus, pneumococcus	Gonococcus
Appendicitis...	Colon, typhoid, pneumococcus, streptococcus, staphylococcus, aureus	Streptococcus and colon bacilli
Febricula? Five days.....	Staphylococcus aureus, colon, pneumococcus, streptococcus, typhoid	None

The controls were negative in all cases.

The diagnoses of the few cases here reported were as definite as laboratory and clinical means could make them. The second patient with appendicitis in the series, No. 21, was operated upon by Dr. George DeHoff, and cultures taken from the abscess showed colon bacilli and streptococci.

The work here reported is being continued by several men and the hint here thrown out, I trust, will lead to a more complete investigation of the method.

1937 MADISON AVENUE.

AN APPARATUS FOR THE CHEMICAL AND BACTERIOLOGICAL EXAMINATION OF GASTRIC CONTENTS AND FÆCES.

Clinical Matter Pertaining to the Use of the Same.

By ANTHONY BASSLER, M. D.,
New York.

This apparatus has been devised to take the place in clinical work of the much too expensive, complicated, and easily broken gasometer apparatus; to bring within ready determination those points in gas results that are of practical value in diagnosis; to increase the scope and value of gastric and faecal analyses; and to combine in one simple instrument the means to make both the chemical and bacteriological tests. This wide extent of application for one small instrument sounds much on the *multum in parvo* order, and one too general in application for service. I do not say that it is a scientific gasometer, but one accurate enough in that positive estimations mean practical values. It is a fermentation tube large and still small enough for the purpose of these examinations, by the means of which the quantitative total gas and carbon dioxide, and qualitative reactions, and sulphureted hydrogen analyses can be made, in an apparatus in which the fermentative and putrefactive as well as bacteriological examinations are also possible, all combined and made possible in an inexpensive, quick, and therefore clinical way.

The main part of the apparatus consists of the well known form of fermentation tube, the upright limb of which has a fifteen c.c. capacity and is graduated in percents, and the bulb a thirty c.c. capacity. The tube is less than six inches in height so that it will go into a medium sized incubator, and constructed so that twenty-five c.c. sufficiently fills the instrument. Into it is placed a portion of an Ewald test meal; or for the chemical test of fæces, 7.5 grammes of the soft end of a stool (mushy consistency) or ten c.c. of a fluid stool (each of which are mixed in twenty-five c.c. of water. In the bacteriological examinations, the tube is filled with bouillon or a two per cent. dextrose in bouillon and

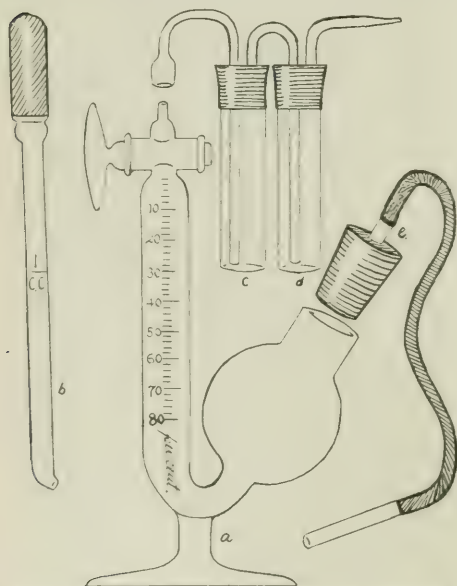
inoculated with about one c.c. of the test meal or three or four drops of the watery suspension of faeces. In the case of the chemical test of the faeces, the weighed portion of the stool is thoroughly mixed with water in a casserole by means of a common teaspoon and any large sticks of cellulose or vegetable substance present removed. The fermentation tube (*a*) is then placed in a water jacketed oven where it is kept for twenty-four hours at 37° C. when the examinations are made. If at the time of examination more or less faeces and incorporated gas are seen at the top of the fluid in the upright tube, No. 3 or 4 shot are placed into the bulb which is then filled with water, and corked so that no air from without is confined. After this the instrument is shaken to allow the shot to break up the floating faecal mass at which the gases from it are liberated; such gas as escapes into the bulb is then passed back again into the upright end, the cork with-

opened, by means of adjustment and blowing. The reactions are noted in bottle *c* which contains a very weak solution of neutral litmus (a control in a test tube being used to note the color change), or distilled water into which are put small pieces of phenolphthalein and methyl orange papers (the first turns red with alkalis and the second turns red with acids). Bottle *d* contains common lead water to note the presence of sulphureted hydrogen (turns black); and the gases hydrogen and marsh gas may be ignited at the outlet, but as both of these burn with an indistinguishable blue flame and neither are important in the clinical way this may be omitted. With the nutritive media, the contents of the closed upright limb is then examined for anaerobic bacteria.

CLINICAL USES.

My experience with this instrument covers, up to the time of this writing, 5,117 estimations, and may briefly be given as follows:

Stomach. In Ewald meals from normal stomachs the gases consist of nitrogen and oxygen (mostly swallowed), and carbon dioxide (mostly from the blood). As Planer has shown, with a strict vegetable diet there may be hydrogen in addition. The quantity seen is never more than only a few bubbles, too few for percentage estimation. In excess secretions (hyperchlorhydria, gastrosuccorrhoea) but little if any more gas is seen, even if the textbooks state otherwise. When the pylorus is patent and the bacteria in the stomach are increased, even, as sometimes happens where the hydrochloric acid amount is high, the gas content is above normal (which latter for the purpose may be considered as two per cent, as the extreme upper limit). In gastric ulcer of the unrecognized clinical type (as well as the other), the gas content is increased in the face of high hydrochloric acid, and this is due to bacterial increase and forms the only practical clinical method of diagnosis we have for these unrecognized, numerous, and most important to be aware of conditions; in twenty-seven of such instances the gas content ranged from four to twenty-seven per cent., with eleven per cent. as the mean average of them all. In defective acidity when the volatile acids are a prominent feature in the test meal (chronic gastritis), in the low infective states, in the acute inflammatory conditions, and occasionally in the irritative form of gastric neuroses, the gas content is generally above two per cent., but not so high as in ulcer and pyloric stenosis. In marked stagnant conditions of the organ where the carbohydrate fermentation and proteid decomposition are present, the gas content was highest, usually over ten per cent., and found in one of my cases of pyloric cancer to be fifty-six per cent. In these conditions the presence or absence of sulphureted hydrogen is often a most suggestive diagnostic point distinguishing the benign from the malignant conditions. In stagnant stomachs not so much diagnostic value can be placed upon the products of albuminoid putrefaction (hydrogen sulphide, ammonia) as upon those more definitely due to carbohydrate fermentation (lactic, butyric, and acetic acids), and it is strange that hydrogen sulphide for instance is an uncommon finding in late cancer of the stomach, whereas in atonic conditions of a be-



Bassler's apparatus for chemical and bacteriological examination of gastric and intestinal contents.

drawn, some of the fluid run out, and the observations made as follows:

First the total gas content is observed, after which in the faeces tests some of the fluid is extracted and examined for indol and uresine, and in the nutritive media for aerobic bacteria. The carbon dioxide present is extracted by introducing into the contents one or two cubic centimetres of saturated solution of sodium hydrate by means of the pipette (*b*), and the tube inclined to permit this heavy solution to run up into the upright portion and allowing fifteen minutes of time for complete extraction. The rise in the fluid corresponds to the amount of carbon dioxide that was present. The remaining mixed gases are then tested in the twin bottles, being driven through, when the cock is

nign nature (whether primary or secondary to pyloric obstruction) it is by no means so rare. While this is not advanced as a safe rule in differential diagnosis between cancer and the benign affections, nevertheless, when the fermentation organic acids are absent or low in amounts and those from albuminoid decomposition high, it is somewhat of an argument against cancer being the cause of the stagnant condition of the organ. On the other hand, when the organic acids are high, even if the putrefactive gases are also a marked feature, one would be led to view that content as most probably from a case of malignant disease. The presence of sulphureted hydrogen (and the intestinal secretions) in the stomach is the earliest symptom possible to gain in enteric obstruction, thus its importance in recognizing postoperative ileus. Lastly when eructation is a feature, the apparatus is of value in the differential diagnosis between the true (fermentative) and false (neurotic) conditions causing it.

Intestines. The reaction of normal feces is most times faintly alkaline, sometimes neutral, never acid. The alkalinity is due to ammoniacal putrefaction, the acidity to butyric and lactic acid production from excessive fermentation or putrefaction in the lower bowel. A strongly alkaline stool is just as significant pathologically as the acid, since these are most often seen in diarrhoea and are due to the alkaline producing microorganisms. With the doubts in the reaction from the combinations of the above, the reaction of stools and the gases in the chemical test are not of much clinical value, but in the tests of the nutritive media (bacteriological) the gas and chemical tests are of the utmost service.

The important gases in faecal examinations are carbon dioxide, hydrogen, nitrogen, sulphureted hydrogen, and marsh gas—the varying proportions of each depending upon the character and amounts of food, upon the character and amounts of the bacterial flora present, and the pathology of the lower digestive canal. Estimates of the different gases obtained from feces in the various diets are,—hydrogen, fifty per cent. in milk, two per cent. in meat, and three per cent. in vegetable; nitrogen, thirty-seven per cent. in vegetable, thirty-seven per cent. in milk, fifty per cent. in meat, and fifteen per cent. in vegetable; marsh gas, 0.09 per cent. in milk thirty-one per cent. in meat, and fifty per cent. in vegetable; carbon dioxide, twelve per cent. in milk, ten per cent. in meat, and twenty-seven per cent. in vegetable. Sulphureted hydrogen is always present in the stool examinations in amounts varying from a slight reaction (normal) in bottle *d*, to a deep reaction (pathological), and in this connection (the gas being produced only in proteid decomposition) its amounts can be taken as a strong clinical suggestion in diagnosing these conditions. In the chemical feces tests, the Schmidt and Strassburger test diets (first. No. 2, and then No. 1) should be employed; results with No. 1 following the administration of No. 2 are clinically most conclusive in the way of positive findings. With the use of the nutritive media, the controlling of the food values by test meals is not important and may be omitted. In these tests, twenty to thirty per cent. of gas may be considered as normal. In the saccharobutyric putrefaction, the gas content is usually

only from five to thirteen per cent., and in gastro-enteric atrophy the gas content is high, running in one of my cases to eighty per cent. In the watery suspension of feces from a normal individual when such foods as an individual ordinarily employs has been continued, the gas limits may be considered as from ten to thirty per cent.; on a meat diet it may fall to one half, and on a strict carbohydrate diet it is usually higher.

Other points in the tests are, that the reaction of the aqueous fluid in the chemical tests should be taken in the beginning and at the end of twenty-four hours; a distinct change from neutral or alkalinity to acidity indicates excessive fermentation and putrefaction in the gut. The same is true in the reagent tests (Jaffé's or Obermayer's) for indol; the development of an excessive amount of indol in the fluid in twenty-four hours pointing strongly to indolic putrefaction; and also the development of distinct amounts of butyric acid (heat—volatile—litmus test) points to that of the saccharobutyric type. A practical degree of segregation of the two types of bacteria takes place with the media method—the anaerobic being found in the closed limb, the aerobic in the bulb. Separate specimens of the media from each side, stained by the Gram differential method, shows much more definite clinical data than is possible to be obtained from examination of fresh feces or the fluid in the clinical test.

126 EAST SIXTIETH STREET.

THE TREATMENT OF RECURRENT HORDEOLUM.

BY AARON BRAV, M. D.,
Philadelphia,

Ophthalmic Surgeon to the Lebanon Hospital.

Those who have had the opportunity to meet with stubborn cases of recurrent styes which resisted all forms and methods of treatment and actually tired both patient and physician will probably not consider this communication a superfluous effort. The specialist is always expected to write something on a serious problem rather than indulge in the elaboration of such a simple condition as hordeolum that primarily and justly belongs to the sphere of the general practitioner. Yet my experience with these cases fully warrants the justification in treating the subject in a comprehensive manner giving the treatment that never failed in my hands.

Clinically as well as pathologically we recognize two kinds of hordeolum: (a) The external, or Zeissian, hordeolum, and (b) the internal, or Meibomian, hordeolum. These names at once point to their pathological differentiation. The one involving the Meibomian glands, the other the glands of Zeiss. The Meibomian, or internal, hordeolum is rarely of a recurrent type, so that we shall in this paper consider only the inflammatory condition of the glands of Zeiss, the external hordeolum.

External hordeolum is often of a recurrent type resisting treatment. It recurs at short intervals sometimes within a few days, more often within a week or two. Ordinarily speaking external hordeolum is a self limited condition that gets well within a few days or a week without any medical aid. In many cases the correction of an error of refraction

suffices to prevent a recurrence. But a considerable number of cases have a tendency to recur even though carefully prescribed and well adjusted glasses are worn. Hordeolum externum is a circumscribed inflammatory process of the glands of Zeiss leading to suppuration. The microorganism responsible for this process is the staphylococcus finding entrance through one of the orifices of the hair follicles. Patients with errors of refraction, those suffering from any form of blepharitis, and those of some constitutional dyscrasia such as scrophulosis anemia or any of the debilitating disorders are predisposed to this local inflammation. In treating this apparently simple, yet very often, annoying condition we must recall to our mind that it is usually a mild suppurative self limited process and that energetic strong medication is not advisable. The latest textbook on ocular therapeutics still speaks of aborting a sty by means of the application of carbolic acid or tincture of iodine to the orifice of the hair follicles. This is unnecessary meddling with caustics when we deal with such delicate organ as the eye. There is neither necessity nor virtue in this therapeutic effort. The most rational thing to do in sty formation is to apply moist, hot compresses for several hours. This hastens suppuration, relieves somewhat the pain, and brings the process to a termination. When the process is accompanied by severe pain it is best to relieve the tension by a small incision even in the formative stage followed up by hot fomentations. This always shortens the inflammatory process. An ordinary eye lotion as a soothing agent and cleansing medium should be prescribed:

R Acidı borici, gr. xxx;
Sodii bıboratıs, gr. xv;
Aque destıllate, ʒiij.
M. S.: Bathe affected eye several times daily.

The ordinary hordeolum will require no more attention. When, however, we deal with recurrent cases we must think of the possible underlying causal element. Errors of refraction should be carefully corrected. My line of treatment in the multiple and recurrent type of hordeolum is the following: During the acute stages hot applications are advised. As soon as the acute stage has somewhat subsided I apply locally the following mixture:

R Tincture arıenı, ʒes.
Tincture opı, ʒiij.
Liquor plumbı subacetatıs dil., ʒiij.
Aque destıllate, q. s. ʒiij.
M. S.: Apply locally by means of absorbent cotton at bed time.

After the disappearance of the sty, we do not discontinue the treatment, but for a period of four weeks we order the following antiseptic ointment:

R Hydrargyri chloridı corrosıvı, gr. ¼;
Petrolatı albi, ʒiij.
M. S.: Externally.

This should not be merely smeared over the lids but should be applied with gentle massage every night. Prior to the application of this antiseptic ointment hot compresses should be applied to stimulate the circulation of the margin of the lids. While an ordinary sty does not always require the correction of any errors of refraction it is always an essential procedure in the recurrent type. It is very often a contributory factor in the development of styes.

Having corrected any error of refraction under a mydriatic I order an antiseptic nasal wash. A teaspoonful of boric acid in a glass of water to be snuffed up, twice daily, is a good, simple procedure. The constitutional aspect of the case must, of course, be remembered. I usually employ compound syrup of hypophosphites with good result. In order to keep the bowels in good condition I incorporate the fluid extract of cascara.

R Syrupı hypophosphat. comp., q. s. ʒiij;
Extractı cascarae fluidı, ʒss.
M. S.: A teaspoonful three times a day.

This simple method of treatment has never failed in my hand, and even the most protracted cases have yielded to this medication within four weeks' time provided I could obtain the intelligent cooperation of the patient.

917 SPRUCE STREET.

MAMMARY FIBROADENOMA,

*With Report of a Case in Both Breasts of a Young Male.**

By AARON DENENHOLZ, M. D.,
New York.

I wish to report a case of mammary fibroadenoma which had several interesting features.

The patient, I. W., male, age fifteen, was born in the United States; occupation schoolboy.

Family history negative on the father's side; on the mother's side malignant disease in an aunt, the nature of which disease was a cancer of the rectum.

No history of rheumatism or tuberculosis. Previous history negative till last September, when parents noticed that the boy was in poor health, anemic, coughed considerably, and was emaciated. Repeated examination of sputum failed to show any tubercle bacilli. He was brought to me and upon examination all I could make out was a severe generalized bronchitis. Physical examination at this time revealed nothing abnormal to inspection and palpation of chest wall, glands of the subcapitular, cervical, and inguinal regions were somewhat enlarged. Heart was normal. Lungs showed presence of some sibilant and sonorous râles. No subpericardic râle, no dullness on percussion, or bronchial breathing. Liver, spleen, and other abdominal viscera normal. External genitals well developed. Urine negative.

Bronchitis persisted in spite of careful treatment, and finally cleared up in about two months.

Present illness: About the latter part of January, 1909, patient noticed a swelling of the left breast; after having played a game of baseball. He called the attention of his parents to same, whereupon they brought him to me for examination. Upon inspection I noticed a bulging of the left breast, a somewhat flattened mass, the color of the skin being normal. This mass was about two and a half inches in diameter; a hard, circumscribed, rounded, lobular tumor presented itself beneath the nipple. This was freely movable on the underlying parts, except in the vicinity of the nipple, where it appeared slightly held. No tenderness present, no dilated veins, no secretion on pressure. Axillary glands were enlarged but not painful. Right breast was normal to inspection and palpation. Tumor was in intimate relationship to nipple. Operation advised.

I prepared patient for operation on February 7, 1909, and after the usual preliminaries, under chloroform narcosis, removed the breast by a curved incision with the concavity upward along the inferior margin, dissecting away all the breast tissue (Kocher). After enucleation I found it very adherent to the portion of the gland beneath the nipple, so that in its removal it was impossible to avoid buttoning the skin. The mass was easily stripped from the pectoral fascia, and the wound was closed by interrupted sutures. On examination of section, the mass was grayish white, smooth, homogenous, more or less lobulated.

Pathological report: Fibroadenoma with islands of epithelial cells (by Dr. Krumwiede, of the French Hospital).

Patient improved very much after this operation. Axillary glands diminished considerably in size.

About May 1st patient noticed an enlargement of the right breast, whereupon he called upon me. Upon inspection I found a diffusely enlarged soft mass, some secretion oozing upon pressure of the nipple, serous in character, overlying skin normal in color, movable upon the underlying parts but not so at nipple area. Axillary glands enlarged. I decided to wait in order to watch its progress, which to my surprise was exceedingly rapid. In about two weeks it became very much larger, extremely hard, involving the entire breast, which was movable upon the underlying parts, no visible veins on surface. Nipple was adherent and slightly retracted. This rapid development made me fear malignancy and I decided to remove this breast in consequence, which I did after the usual preliminaries, chloroform narcosis being again used. I removed the entire breast tissue, inclusive of the nipple area, as this was very adherent, also the pectoral fascia. Recovery was uneventful except for some slight reaction.

Microscopical examination by Dr. S. Schaeffer: "Report of section of tumor of the breast. This section shows an increase in ducts and connective tissue. The ducts are considerably dilated and the glandular epithelium is markedly increased in amount. The new formed acini, however, preserve the gland type and are quite irregular in outline and grouping of the epithelial cells. The ducts and acini are surrounded by connective tissue mostly of the spindle cell variety, adherent, very cellular in areas, but the cells have no form or grouping which would suggest malignancy. I believe the tumor is a fibrocystic adenoma."

According to Murphy in *General Surgery, Practical Medicine Series of 1905*, encapsulated or localized fibroadenomata of the breast are not uncommon, usually occurring in early life, forming small, movable, slowly growing tumors which are easily cured by extirpation. They appear to have little or no tendency to malignant changes. A chronic induration of the breast with some enlargement in whole or in part is very commonly observed in women in middle life. It is sometimes seen early, even in the third decade. It rarely begins after the menopause, although it may then persist if already present.

We can, according to B. F. Curtis, recognize two pathological varieties of these changes, (1) chronic interstitial mastitis, (2) diffuse fibroadenoma. Typical cases of the first are easily distinguishable, but the two conditions may appear in different parts of the same breast, and in some cases it may be impossible to determine whether the process found is an inflammation or a new growth. Both may closely simulate carcinoma in their clinical and physical characteristics, so that a diagnosis may be difficult. Both of them also seem to be very liable to carcinomatous degeneration or to be followed by carcinoma. Inasmuch as only a careful microscopical examination can distinguish between breasts affected by these two changes the diagnosis between them before removal is impossible. Nor is it very important, for the main necessity is to determine if actual changes sufficient to require radical treatment have taken place.

The clinical picture is as follows: In a woman after middle life, whether single or married, childless or multipara, appears to be of no consequence, induration takes place in one or both breasts involving the entire gland or forming a distinct nodule in one portion. We rarely find the rest of the breast perfectly soft and healthy, even if a superficial examination reveals only one distinct nodule. It is seldom that the patient has suffered from any injury

or abscess formation which might be considered a cause. When the process is localized or limited to one lobule a more or less distinct mass is felt, moderately hard and freely movable in the breast, but rarely attached to the skin or deep fascia. If a cyst of any size is present the mass is usually elastic but hard, and sometimes of stony hardness like carcinoma. Fluctuation can seldom be demonstrated, tension and fluid pressure being so great. Small cysts feel like shot embedded in the tissues, and larger ones surrounded as they often are by thick indurated walls may exactly resemble a small carcinomatous nodule. Usually a nodular or glandular induration can be felt in the rest of the breast by careful examination, pressing the gland gently against the chest wall and palpating with the fingers especially at the margins, even when the patient complains only of the more evident portion or prominent tumor. When the disease has advanced equally in all parts, the entire organ feels indurated, uneven on its surface, and when grasped gives the impression of being made up of numerous nodules. In a certain number of cases there may be some adhesion of the skin and even retraction of the nipple, in spite of the denial of Bryant and others that the adhesion of the skin and retraction are ever felt except when carcinoma is present. A retraction which is evident before operation occasionally disappears after removal, probably caused by the loosening of the fibrous stroma which had drawn upon the nipple. According to von Bergmann they never become adherent to the skin or underlying tissue or muscles. The glands never become enlarged. According to Murphy the axillary glands sometimes enlarge from inflammatory reaction and they may be tender to pressure, but they are not so hard as is sometimes the case in carcinoma.

The patient is, as a rule, unaware of the changes in the breast unless a prominent single nodule or cyst has developed, for the process is often painless. In some cases, however, there may be discomfort or actual neuralgic pain. The fear of cancer is generally the cause of seeking medical advice, not the actual suffering. A subacute or even acute infection may be added to the existing disease, and then there may be a discharge of pus from the nipple, or one of the cysts may suppurate with the usual symptoms of acute mastitis. Abscess, however, is rare, and the infected cyst generally discharges through the nipple, or the infection is overcome by the tissues. Resolution and absorption occur, and the cyst returns to its original size or then disappears. Progress is very slow, often running for years with little change, and the outcome is a matter of dispute. Sometimes a cyst of considerable size may spontaneously disappear by absorption of its contents.

Prognosis. In estimating this we must distinguish between the extensive and the limited cases, and also between cases with very advanced changes and those with slight alteration. The advanced cases are marked by great induration, sometimes with edges that are sharply defined like those of a carcinomatous tumor. A number of cysts may also be present. In such cases the danger of malignant change is great, whether the whole breast is involved or only a part of the gland. When, however,

the induration is slight, especially if only a part of the breast is involved, there appears to be more chance of resolution and atrophy taking place. The induration varies from a slight thickening of the mammary tissue to a hardness equal to that of carcinoma, and constitutes the most reliable sign of the great pathological changes and the consequent danger. The knowledge of these facts must determine our choice of treatment.

We can separate these cases into three classes: (1) Moderate induration limited or general; (2) marked induration limited to one quarter of the breast or less; (3) marked induration general.

First Class. We need not remove every breast which has a small mass of moderate hardness or in which the tissues of the entire breast are slightly indurated. These cases are very common in women from forty to fifty. They can be left to time to atrophy, in the meantime keeping the patient under observation. Nor should we excise every cyst which is small, thinly walled, and soft in a normal breast. The induration is the real disease. The determining factor in the treatment of these cases is the extent of the pathological change as shown by the accompanying induration.

Second Class. When a small mass is found in the breast showing the characteristic nodular induration its removal should be urged. Consent should be obtained beforehand for the removal of the entire mamma if the surgeon thinks there is a possibility of discovering positive evidence of malignancy during the operation, or the patient should be made to understand that the operation is preliminary to a careful microscopical examination and that an immediate radical operation may be required if the character of the tumor should prove to be dangerous. Banks asserts that the gross appearance of the tumor after section by the surgeon is more reliable than a microscopical examination, but few will agree with him. Curtis has frequently made guesses founded upon these appearances and has been wrong as often as right. Therefore, he is unable to express an opinion without the assistance of a frozen section, which can be made at once before the wound is closed. At the same time it must be remembered that frozen sections are not absolutely reliable, and more than once sections have been obtained from cystadenoma and even from a typical fibroadenoma which closely resembled encapsulated malignant disease. The thickness of the staining and the indifferent staining account for this uncertainty. The removal of limited masses of the breast must be restricted to tumors involving less than one quadrant of the gland, for if more than this be removed the proportion left behind is of no cosmetic or even sentimental advantage to the patient. Some surgeons go as far as to advise the saving of the nipple even when the entire removal of the gland is necessary in nonmalignant disease.

Third Class. If the induration involves so much of the breast as to leave less than three quarters of the gland (after excision of the diseased portion with a sufficient zone one half to one inch wide of the surrounding healthy tissue), the entire breast should be removed and the pectoral fascia dissected off with it, the axillary contents being removed as

well (as a precautionary measure). As we remove the suspicious appendix, so should we remove the suspicious breast, even if we feel tolerably certain that dangerous changes have not yet taken place in the suspected organ.

Hereditary transmission of mammary fibroadenoma is relatively of much less frequent occurrence than cancer. True adenoma is the name given by some pathologists to tumors structurally exactly like a segment of the breast itself, not only united to the gland by its main duct. Williams speaks of formation of fibroadenoma in opposite breast after removal from one breast. Virchow and most German pathologists together with Labbe, Coyne, Cornil, Ranvier, and Gross regard these growths as fibromata. Broca, Verneuil, Codia, Delbet, and others consider them of essentially glandular origin adenomata. Williams believes that the immense majority of these growths arise from portions of the breast where both the glandular and fibrous elements are intimately blended, that is to say, from the small ducts and their immediate vicinity. According to Billroth and Schimmelbusch, mammary fibromata always contain glandular structures. Most of these tumors consist of a hypertrophy of both the fibrous and epithelial elements. Pure fibromata are extremely rare, Williams reporting one in 2,397 cases of mammary neoplasm analyzed by him.

Few instances of cystic disease of breast in children are on record.

In the male the proportion of fibrous tissue surrounding the gland is considerable. Influence of sex is marked, for in 373 cases analyzed by Williams there was only one instance of the disease in a male. There is a relationship existing between the genital organs and the mamma in the male as exists in the female, mastitis occurring at puberty and gynecomastia after castration or atrophic orchitis. In female, if marriage is contemplated, advise removal of mass, as under stimulus of pregnancy and lactation it may rapidly increase.

The clinical development of these tumors recalls that of chronic mastitis. Fibroadenomata are recognized by smooth surface and well defined form, slow development, great hardness, absence of pain, slight development of nodules, absence of adhesions to skin and muscles.

The breast enjoys almost complete immunity to carcinoma before puberty. Fibroadenomata develop more frequently as puberty is approached (Murphy). Age is an important factor, for in the majority of cases of this disease it begins in young adults before thirty; not infrequently it starts later in life, rarely before puberty. Williams especially inquired with regard to this factor. Of fifty-two patients the earliest age at which the disease first appeared was fifteen, the latest sixty-three, mean age thirty years four months.

Bryant in *Diseases of the Breast*, p. 90, mentions having seen an instance in a male child, ten months old, but inasmuch as fatty as well as fibrous tissue formed part of this tumor it was probably a case of indurata benigna due to chronic mastitis for fatty tissue never enters into the formation of fibroadenomata.

Hopkins in *Boston Medical and Surgical Journal*,

for March, 1885, reports the removal of a fibroadenoma the size of a chestnut from the right breast of a girl of seven years. He noticed that a similar tumor appeared in the left breast, which in two and one half years attained nearly as large a size as the one removed from the right breast. Histologically it consisted of wavy fibrous tissue and a few tubular glandular structures.

Volpeau met with a similar tumor in breast of a girl eight years old (reported in *Traité des maladies du sein*—1854).

Jopson, Speese, and White in an article on Breast Tumors in Childhood in *Annals of Surgery*, for November, 1908, report two cases of tumor of female breast in children which are very interesting.

CASE I.—Female, age ten. First seen in January, 1907, poorly nourished, anemic, pain and tenderness in region of nipple. No dilated veins. There had been no traumatism. The condition remained stationary for ten months, then grew rapidly. Tumor was in intimate relationship with nipple. Operation advised in view of possible malignancy due to sudden increase in size. Tumor removed by incision one and a half inches in length. At base was encapsulated, slightly adherent to portion of gland beneath nipple, so that in its removal it was impossible to avoid some injury to ducts. It was easily stripped from pectoral fascia. Microscopically tumor consisted of fibroepithelial formation showing a typical adenofibromatous growth. Glandular part consisted of a few acini, greater portion being derived from the ducts lined with cuboidal epithelium.

CASE II.—Addie F., colored, age eleven. Admitted to Children's Hospital on April 23, 1907, service of Dr. J. H. Jopson. An only child, both parents living and well. No history of specific or malignant disease. No illness except measles and pertussis. Had never menstruated. Enlargement of right breast stated to have been noted first by the child some eight weeks before mother, who observed it four weeks before admission, during which time it increased rapidly in size, the only symptoms complained of being occasional sharp pains in breast. Physical examination showed the patient well developed for her age. General nutrition was good. Examination of heart and lungs were negative, abdominal examination also negative. Right breast enlarged, globular in shape, nearly three times size of left. Skin very hard, tense, and shiny. Numerous large subcutaneous veins radiating from nipple. Nipple flattened and partly retracted. No special tenderness. Very movable on underlying tissues. One or two small glands palpable in axilla. Diagnosis, sarcoma. Operation, amputation of breast April 26, 1907. Elliptical incision. Great vascularity of subcutaneous tissue. Thorough dissection of axilla from below. Several enlarged glands found. Their appearance suggestive of sarcomatous infiltration. Tumor measured $6\frac{1}{2} \times 4\frac{1}{4} \times 3\frac{1}{4}$ inches. Overlying skin intact (including nipple), freely movable on tumor. Nipple showed marked retraction. Consistency firm. Pathological diagnosis, diffuse fibroma. Histological examination of several small lymphatic glands showed moderate congestion and no evidence of tumor metastasis.

A large majority of tumors of breast in childhood are benign.

Fibroadenomata never cause retraction of the nipple, but it must be borne in mind that in a considerable proportion of these cases the nipple is retracted or otherwise malformed owing to congenital defect. It happened in ten out of forty-two cases under observation of Williams.

In my own case which I have reported here, I did not remove the axillary glands at the first operation, pending microscopical report of specimen removed which proved to be nonmalignant. The axillary glands diminished in size considerably after that operation. At the operation for removal of the second breast I did not deem it advisable to remove

axillary contents, considering the behavior of the other side postoperatively and taking into consideration the pathological report which showed non-malignancy. Shield says that sometimes the glands are enlarged and tender, disappearing after the removal of the tumor. I decided, however, to remove the nipple area, as I found it in intimate relationship to the underlying structures, and deemed this course most expedient. I also took into consideration the fact that patient was a male.

One interesting feature of this case was the rarity of occurrence, about one per cent. of all tumors of the breast affecting the male organ. Fifteen years is the earliest age observed by Williams. The rapid development of the second tumor was another interesting feature, as there was absolutely no pathological condition present in the right breast at the time of first operation and for weeks afterward, first making its appearance early in May. It was then soft and shortly thereafter became very hard suggesting malignancy. Pathological report after removal proved negative. Patient is now perfectly well.

85 EAST TENTH STREET.

PHYSIOLOGY AND THE SECOND LAW OF THERMODYNAMICS.

BY FIELDING H. GARRISON, M. D.,
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(Continued from page 498.)

According to the nebular hypothesis of Kant and Laplace,² the highest reach of human thought upon the subject, the earth, like the other cosmic bodies, was thrown off, in the first instance, from some great gaseous or solar mass and existed, to start with, as a rotating nebulous sphere at a temperature enormously high. By radiation of heat from this nebula the latter gradually cooled and condensed into a molten magma, and the thin crust of earth upon which we live was at length formed on this surface. By descent of clouds of surrounding steam, water was deposited upon this crust, and in this water, at a temperature probably some where above 44° C. or 111° F., it is assumed, from the data of geology, palæontology, and physical chemistry, that the lowest forms of life first came into being. The time required for the secular cooling of such a planet is of capital importance for the theory

²Kant, *Allgemeine Naturgeschichte und Theorie des Himmels* published anonymously in 1755. In this work Kant applies Newton's mechanical conception of the solar system to the entire sidereal system. In 1796, forty one years later, the nebular hypothesis of Kant was restated in more definite form by Laplace in his *Exposition du système du monde*. Of this part of Laplace's work, Fourier said, "He would have completed the science of the skies had the science been capable of completion." Among more recent innovations may be mentioned the *Planetesimal Hypothesis* of Chamberlin and Moulton, the essential feature of which is the idea that the earth and other planets "were formed by a gathering of planetesimals into a nucleus which at an earlier stage was one of the knots of a spiral nebula." These infalling planetesimals are supposed to have contained all the chemical elements of organic matter, notably the hydrocarbons found in meteorites. If the planetesimal hypothesis is true, it obviates the necessity of explaining away the relation between the slow secular cooling of the earth and the origin of life upon it, since it assumes a much lower initial temperature than that of the nebular hypothesis. See the papers in *Science*, December 25, 1908, pp. 897 to 911, and *Esperanza Magazine*, January, 1909, 238-247.

of evolution and descent, and it was the famous dispute between Lord Kelvin and Professor Huxley in regard to geological time, that first aroused geologists and biologists to the task of defending their thesis. In Darwin's time, the weakest point in his theory was the lack of completeness in the geological records and his own hasty conjecture that the time required for certain geological changes was at least three hundred million years. Concentrating all the force of his attack upon this point, Lord Kelvin maintained, from considerations relating to the physics of the earth's crust, that the time elapsed between the cooling down of the molten magma and the present, could be (in Kipling's expressive phrase) "pared down to a bit only"—to a period of one hundred million years or less; a figure which he latterly reduced to between twenty and forty million years. To this Professor Huxley replied cheerfully that "most of us are Gallios who care for none of these things," seeing that "biology takes her time from geology," and "if the geological clock is wrong, all the naturalist will have to do is to modify his notions of the rapidity of change accordingly." While the vast array of forms unearthed by recent paleontologists is gradually filling up the lacunæ in Darwin's theory of descent, latter day geologists have found that the time limits set by mathematicians do not seriously impair the validity of their argument; for the higher the temperature of a body, the more rapidly it cools, the lower the temperature, the slower its rate of cooling, so that the prepalæozoic age was probably not one fourth as long as the succeeding periods.²⁹

On the other hand, De Vries's doctrine of mutations and saltatory evolution has tended, seemingly, to strengthen the force of Kelvin's parting shot at Darwinism: "The limitations imposed by physical science cannot, of course, disprove the hypothesis of transmutation of species, but it does seem sufficient to disprove the doctrine than transmutation has taken place through descent with modification by natural selection." In reality it will be found that mutation accounts for the very thing which, Kelvin thought, natural selection was powerless to explain, viz., the persistence of individual species through thousands of years. Whatever theory of descent we adopt, and admitting the possibility of the idea of Lord Kelvin and Arrhenius, that germs and ova can be transmitted from star to star (pan-spermia), it seems not improbable that life on the globe was originally of marine origin, as attested by innumerable facts; the most significant being that the relative proportions of the salts of sodium, potassium, calcium, and magnesium in the blood plasma of all animals are so astonishingly like that in ordinary sea water as to lead to the hypothesis of Quinton,³⁰ that the composition of the blood plasma is identical with that of the primeval oceans; or the theory of the Canadian naturalist, McCallum,³¹ that this vital medium in the higher animals approximates closely in composition and temperature to the sea water surrounding the primitive organisms at a time when the body cavity became

osmotically closed in process of evolution. Aside from the notion that the original protoplasm fell upon the earth from some other star, we may assume, if we like, that it was made, in the first instance, by special fiat of creative power, or (Lord Kelvin's *bête noir*) that it was formed from "the fortuitous concurrence of physicochemical forces." Either assumption is beside the mark, since it deals with final causes, or, anthropomorphisms determined by the personal equation and preference of the individual. Recent chemists argue that we could make life from inorganic material if, as in the initial conditions, we had indefinite time and an ideally sterile medium at our disposal, so that the slow, progressive molecular changes could not be broken down by any microorganisms; but in our present state of knowledge, the real thermodynamic question is not "what?" but "how?"; in other words, to determine the probable physicochemical relations of the primordial protoplasm to its surrounding medium; and to ascertain, if possible, what effect this relation might have upon the evolution of the later forms of life. By applying the principles of physical chemistry to a laboratory study of salt from the Stassfurt deposits, Hoff was able, in 1903, to show that the limits of temperature at which the various mineral deposits were thrown down, were 25° C. and 70° C. Somewhere between these limits it is assumed life began and as, at such a time, the ocean, through precipitation of mineral deposits, had a very low concentration, it probably acted, like fresh water, as a solvent and stimulant, and was thus a very unfavorable medium for securing the permanence of living forms. As the temperature of the water decreased and the concentration increased, the salts of sodium, potassium, calcium, and magnesium became dissolved in proportions nearer that of the physiological optimum of blood serum, and a condition obtained which was most favorable for protoplasmic growth and cellular activity. With increased assimilation of lime from increasing concentration of the water or of silica from the formation of muds, the conditions were at hand for the differentiation of animal and vegetable forms and the higher specialization of the former through formation of the protective hard parts (skeleton or carapace). As a purely theoretical argument, let us assume a mass of basic protoplasm with a nucleus (or "centre of oxidation," as Loeb defines it) surrounded by sea water at a temperature of between 25° and 70° C., and having a composition very like its own. Such living protoplasm we know to be a colloidal substance, that is, a structureless semisolid or semifluid mass or pseudosolution, having the microscopic character of an emulsion. Such masses were called dynamic aspects of matter by Graham, because they are not, like crystalline bodies, inert "phases of dissipated energy," but possess some internal or intrinsic energy of their own. The relation of such a structureless mass to the surrounding ocean would be simply a problem in the equilibrium of heterogeneous substances." "The physics of colloids," as Loeb has remarked, "is still in its beginning," but the whole mathematical theory of colloidal physics has been worked out in careful detail by Gibbs in his

²⁹See also C. Latta, in *Science*, 1907, n. s., xxvi, 120 et seq.

³⁰R. Quinton, *Leçon de physique biologique*, Paris, 1904.

³¹Transactions of the Canadian Institute, pp. 181 et seq., 1903-4.

chapters on capillarity, liquid films, and interfacial phenomena, and has not yet received from biologists the attention which it deserves. If we assume the protoplasm and the sea water, through interchange of substances, to have reached some relative stage of chemical equilibrium with reference to each other, the surface of demarcation between the water and the protoplasm would be what Gibbs calls a "surface of discontinuity," and conditions would be ripe for the formation of a new chemical substance or "cell membrane" at such an interface. These thermodynamic conditions can be expressed algebraically as a linear relation between the pressures of the substances and their surface tensions, the later being definite functions of their temperatures and chemical potentials. Another important theorem of Gibbs states that the only stable substance that could be formed at the surface of discontinuity would be the one having the lowest surface tension. Thus the first attempt of the protoplasm to survive by shutting itself off osmotically from the surrounding medium would be in strict accordance with the laws of physical chemistry. Provided it had no living enemies, the cell's whole chance of survival and reproduction would depend upon this osmotic relation between its protoplasmic contents and the surrounding ocean, and this relation is secured by the fact that the cell membrane is permeable to some chemical substances and impermeable to others. Osmosis was originally defined by Graham as "the conversion of chemical affinity into mechanical power," and in the thermodynamic argument of Gibbs, the osmotic flow of liquids through the semipermeable membrane is due either to a disturbance of chemical equilibrium produced by differences in the chemical potentials of substances that can pass through the membrane or to a disturbance of thermal equilibrium through difference of their temperatures. If we wish to get definite mechanical work out of any aggregate of available energy, we have to guide it, as in a heat engine or other Carnot cycle, toward an ultimate goal of equilibrium or uniformly distributed temperature, by enclosing and constraining the energy in a definite boundary system. So the object of the cell membrane is, first of all, to preserve its contents intact, then to ensure its nutrition and reproduction; in other words, to enclose it osmotically and adiabatically, so that energy can neither flow in nor out of it except under certain conditions. Thermodynamically the living cell is thus an adiabatic system or storehouse of energy during its resting or anabolic stages, while it is transformed into an isothermal system during functional or katabolic activity, since the surface energies required for nutrition and reproduction would depend upon the free potential energy which is available only along isothermal paths, that is, when the peripheral protoplasmic temperature becomes constant and evenly distributed. The difference in temperature between the cell contents and the surrounding water, would, as Gibbs has shown for inorganic substances, be sufficient to set up the osmotic currents through the semipermeable membrane which are necessary for nutrition and excretion. Part of the cell's total en-

ergy is thus devoted to maintaining itself adiabatic, i. e., intact as to configuration and quantum of intrinsic energy; a certain amount of its free energy would be spent (under isothermal conditions) in assimilating food and in casting out excreta through the membrane; the rest would be employed in reproduction. Gurley argues that since growth is a predominance of intake over output, it is the efficient cause of reproduction. As a consequence of growth, the primordial nonnucleated cell will increase to the limit of size, and as the sphere has the lowest surface tension for a given mass, it will be the norm of cellular shape. But as a resultant of the push and pull of growth and surface tension, the spherical cell will eventually be flattened and elongated, and this flattened form, being more frangible, will eventually divide in two, under external pressure. There will thus be a steady trend toward flattened, elongated cell forms, and the preponderance of optimum survival values will be ultimately in the direction of equal division of substance for each daughter cell.⁷⁹ The distinctive characteristic of living matter, according to Hering, is facultative memory, or the automatically developed capacity to do what it has done before, and an organized being is said to be "the product of the unconscious memory of an organism." Once the cell has reproduced itself, by fission or gemmation, from whatever cause, we can conceive that the reproductive faculty became a fixed or hereditary property of such cells as survived in the struggle for life. In nucleated cells, the reproductive process became more complicated through catalytic phenomena in the nucleus. Just as Loeb has shown that the development of the unfertilized ovum is a catalytic process which may be produced artificially by mechanical or physicochemical means, so we may assume that karyokinesis in the primordial nucleated cell was a catalytic phenomenon produced by some minute quantity of an extraneous chemical substance or some relatively small physical agency. Recent experiments of Lillie would seem to indicate that the karyokinetic figure is caused by the radiation of lines of force from the centrosomes, very like those the physicist finds in the magnetic field.⁸⁰ The cell having reproduced itself, we may assume a period when the enclosed mass of protoplasm gradually loses its power to functionate physiologically and becomes a sink, instead of a source of energy. It then becomes changed from a living, structureless, colloidal mass, of labile composition, into a stable adiabatic system of inert matter, of metastable composition and structure. If now, through some mechanical or other agency, we could reduce its capacity for developing free energy to a minimum, we should change it from an adiabatic system to a Gibbsian "phase of dissipated energy" or thermodynamic death, in which its chemical composition would be definite and all its vital activities finally suspended. Thus death is essentially a catalytic process, if we accept the thermodynamic criterion of catalysis given by Gibbs: A catalytic agent is one capable of reducing a given substance to a definite phase of dissipated

⁷⁹Gurley. *American Journal of Psychology*, XX, p. 67, 1909.

⁸⁰Science, n. s., xxvii, p. 907, 1908.

energy without limitations as to the relative proportions of either.²¹

Before proceeding further we may mention one other phenomenon which is susceptible of thermodynamic interpretation, namely, the differentiation of animal and vegetable life and incidentally the differentiation of sex. Unicellular organisms, like bacteria, are not only asexual, but are neither animals nor plants.²² For the physiology of protozoa and protophyta indicates that they are capable of functioning indifferently as plants or animals. The fundamental thermodynamic difference between plants and animals is as follows: Plants, being attached or sessile bodies with only one or more degrees of freedom, functionate as anabolic organisms; that is, they are concerned with assimilating food and building up tissues at the expense of a very small amount of energy. They are thus true adiabatic systems or storehouses of energy. Animals, on the other hand, being detached bodies and possessing many degrees of freedom, functionate katabolically, dissipating enormous quantities of energy in various motor activities. The essential dynamic distinction between *das Ewig weibliche* and *das Rein Männliche* turns upon this difference in storing and dissipating energy. In the theory of Geddes and Thomson,²³ recently elaborated by Thomas,²⁴ maleness is defined as the resultant of influences tending to produce a katabolic habit of body, with tissue waste or dissipation of energy along lines of motor activity, aggression, and destructiveness. *Per contra*, femininity or femaleness may be defined as the resultant of tendencies producing an anabolic habit of body, with storage of energy through passive, conservative, or constructive modes of life. The fact that sex is capable of inversion and perversion, can be modified by habit or environment, and can coexist in the same individual as hermaphroditism, does not alter the fact that the fundamental dynamic differences of sex are as above stated. Nor is the Geddes-Thomson theory invalidated by the fact that it does not explain the origin of secondary sexual characters, for Cunningham,²⁵ its ablest opponent, holds that these characters are due to the stimulant effect of the hormones or chemical irritants from the sexual cells, which would be a catalytic and therefore a thermodynamic phenomenon. In man and some animals there is a statistical relation between food supply and sex. A scanty food supply in space and time, as in mountain and desert regions or during wars and famines, has been observed to determine a higher birthrate of boys and (among primitive peoples) a tendency towards polyandry; where nutrition is abundant, there is an overplus of women and a tendency towards polygamy. From the tendency of the male to dissipate energy and of the female to maintain herself adiabatic and store it, we may assume that sexual differentiation obtained among unicellular organisms as a logical necessity in division of labor and morphogenesis. The experiments of Maupas and Calkins upon protozoa have shown that certain

infusorians can reproduce themselves asexually through a long series of generations, but that they will finally wear out, undergo senile degeneration and die, unless they are rejuvenated by being placed in a new nutrient medium, or reinvigorated and fertilized by sexual conjugation with unrelated individuals of the same species. Sexual reinvigoration is thus the equivalent of rejuvenation by improved nutrition and, if we assume the initial generation of our primordial cells to have maintained themselves relatively adiabatic in a constant medium through several cycles, the chances are that they would become senescent and die, unless revived by the catalytic stimulus of some external substance. The work of Herbst has shown that in plants the formative and directive stimuli of morphogenesis are mostly external, while in animals they are practically always internal. From this important generalization, we may trace spermatogenesis, oogenesis and the further differentiation and specialization of sex in plants and animals. Sexual characters were therefore probably due to external or catalytic stimulation of an adiabatic organism in the first instance, since the ovum is normally a sessile storehouse of energy, while the spermatozoon is a motile organism whose metabolism is characterized by dissipative and disintegrative processes which set free the energy necessary for its movements.

In discussing the dynamics of the individual cell, it has been assumed, for the sake of simplicity, that the chemical system contained within the cell membrane is isothermal and reversible. The latter condition we know to be relatively possible for enzymes, ferments, and other colloids, although in actual life, as in the actual steam engine, the thermodynamic processes really proceed in pseudoreversible cycles, as we shall presently show. If the protoplasmic system is an isotropic emulsion, i. e., of the same consistency throughout, the assumption of uniformity of temperature is reasonable, but if the protoplasmic temperature is not the same in each part, the cell would then be a thermodynamic system characterized by irreversible increase of entropy (unavailable energy) during physiological change. For reasons that will appear, no assumption has been made as to the ultimate constitution of living protoplasm. Before taking up the dynamics of tissues made up of cells, however, it is necessary to consider the important question of the limits of divisibility of living matter. Here, as Loeb first indicated, the real problem is, not whether such matter is made up of molecules, atoms, electrons, gyrostatic stresses in the ether, vital principles, etc., but: "Of what order of magnitude is the smallest particle that can show all the phenomena of life?" The great mathematical physicist, Clerk Maxwell, tried to tie this problem into a hard knot by offering the biologist either horn of the following dilemma²⁶: "Some exceedingly small organisms may be supposed to be built up of not more than a million similar molecules. It is impossible, however, to conceive of so small a number sufficient to form a being furnished with a whole set of specialized organs. Thus molecular science sets us face to face with physiologi-

²¹ See also Thomas, *The Evolution of Sex*, London, 1889.

²² W. J. T. Jones, *Life and Matter*, Chicago, 1902.

²³ W. J. T. Jones, *Life and Matter*, Chicago, 1902, pp. 107, 108.

²⁶ Maxwell, *Encyclopedia Britannica*, 9 ed., 10, p. 42.

cal theories. It forbids the physiologist from imagining that structural details of infinitely small dimensions can furnish an explanation of the infinite variety which exists in the properties and functions of the most minute organisms." "On the other hand," said Maxwell, "one material system can differ from another only in the configuration and motion which it has at any given instant. To explain differences of function and development of a germ without assuming differences of structure is therefore to admit that the properties of a germ are not those of a purely material system." Although this argument of Maxwell's has certainly not done much to encourage further investigation of the subject, it has not prevented it, and has been finally disposed of by recent work in experimental morphology and embryology. Loeb's investigations on parthogenesis indicate that whatever life is, living processes obey the laws of mechanics, more especially the thermodynamic laws, in virtue of which energy can neither be created nor destroyed, and at the same time, tends to dissipate or distribute itself equally under all dynamic conditions. Or as Sir Oliver Lodge has put it, the function of the life process is not to generate energy but to guide it. The investigations of Loeb, Wilson, Driesch, Morgan, and Zoja show that no portion of an animal ovum less than one fourth its volume can develop into a complete embryo, while the smallest fragment which can reach the gastrula or pluteus stage is about one eighth the size of the whole egg. Lillie's experiments on protozoa with moniliform nuclei show that nucleated parts of organisms of less volume than a sphere of 80μ are incapable of regeneration and that this regeneration is only possible, as Nussbaum claimed, when the nucleus and cytoplasm co-exist in the same fragment.* "Structural details," therefore, do, in spite of Maxwell, play some mechanical part in development, and these details are by no means of "infinitely small dimensions," while "the properties and functions of the most minute organisms," far from being of "infinite variety," are restricted to two, viz., cell nutrition and cell division. Protoplasmic activity has, as Lillie claims, a "minimal organization mass" which is the smallest part capable of complete regeneration in protozoa, and of complete development in metazoa. "All analysis and all observation," Whitman insists, "leads to the conclusion that molecular structure is not directly responsible for vital phenomena," and, in like manner, modern physiologists are of opinion that cellular structure is not in itself directly responsible for the vital activities of multicellular structures or organisms. With the acceptance of this fact, physiology passes from the morphologic into the dynamic stage, recognizing that even in the lowest organisms, physiological processes depend upon the cooperation of the cytoplasm and the nucleus, and, in the higher forms, upon a physical correlation of all the parts in the organism determined, in the most highly specialized animals by the integrative or coordinative action of the nervous system. "Physiological unity," says the morphologist Whitman, "is not broken by cell boundaries," and physiological activity "does not represent a sum or

aggregate of molecular or other forces, but results from special combinations of ultramolecular units, and disappears the moment the physiological connexion is destroyed." These units physical chemists, following Gibbs, have agreed to call, for their own science, "phases" of matter. Phases, as defined by Gibbs, are any aspects of matter in mass which are homogeneous in regard to percentage composition and thermodynamic (or physicochemical) state, while homogeneous bodies which differ only in quantity and configuration (size and shape) are regarded merely as different examples of the same phase. Phases which exist together, with a dividing surface between them, "in an equilibrium which does not depend upon passive resistances to change," Gibbs calls "coexistent phases," and when two co-existent or contiguous phases of matter become continuous, as in a liquefying gas or solid, or a vaporizing liquid, the distinction between coexistent phases vanishes at the terminal or transition state called the "critical phase." The Dutch physiologist, Zwaardemaker, has recently given an elaborate discussion of the human body as a complicated system of coexistent phases in thermodynamic equilibrium while at rest and undergoing irreversible thermodynamic changes during metabolism and reproduction.* The thermodynamic equilibrium of the body as a whole is secured by the fact that the pressure and temperature in its different parts are usually constant, while chemico-physical changes in isolated parts are due to differences in the chemical and thermodynamic potentials of its constituents. Reproduction and metabolism are to be regarded as periodic, irreversible processes, while the phenomena of the circulation, respiration, intestinal movements and sleep are periodic irreversible (quasi reversible "cycles"). The animal life may be regarded as a system of coexistent phases, the heterogeneous equilibrium of which can be disturbed by experimental removal of the nucleus. The red blood corpuscles are probably four component systems of four phases having two degrees of freedom (modifications of phase), while the endothelial cells of the heart may be regarded as examples of a monovariant system. The "pressure phosphenes" of the retina and consequently "eyestrain" are possibly due to the fact that the thermodynamic potential in the retina is disturbed by change of pressure, etc. These examples may serve to indicate the value of the doctrine of phases as a qualitative criterion of physiological activities. It is admitted that all recent advance in experimental physiology has been due to two working hypotheses: first, the Darwinian idea that human tissues not only have some ultimate kinship with those of other animals and plants, but have the same ultimate protoplasmic structure; second, the laboratory assumption that the forces at play in the physiological activities of living tissues are not essentially different from those involved in the phenomena of inanimate nature. But although physiology has become a comparative and a dynamic science, the great stumbling block

* C. O. Whitman, *Journal of Morphology*, ii, p. 18, 1888, and see his paper in the same journal, xiii, pp. 630 to 638, 1891.
* Zwaardemaker, *Erkenntnis der Naturwissenschaften*, vi, p. 1, 8, 1900; vii, p. 1, 1908.

* Lillie, *Journal of Morphology*, xii, pp. 250 et seq., 1900.

of theorists in treating the animal body as a chemodynamic machine has been complexity of structure in the mechanism of the different cells, notably the germ cell of the ovum. The doctrine of phases, however, takes no account of size or shape in structures but distinguishes them solely by percentage composition and thermodynamic state (pressure, temperature, chemical potentials); so that the dynamic relation of food to the digestive tract, of a bacterium to the blood, of the spermatozoon to the ovum, or of the heterogeneous portions of the ovum to each other, would be so many examples of the dynamics of coexistent heterogeneous systems made up of different phases of substance, without limitation as to form or relative proportions. No assumption is required as to the ultimate nature of the forces involved beyond the fact that in the laboratory they are apprehended by our senses as the energies of heat, light, catalysis, osmosis, and electrolysis. But all these phenomena are of a thermodynamic nature, since differences in temperature are characteristic of each. Taking account of intimate structure, Lord Kelvin held that "the animal body does not act as a thermodynamic engine in converting heat produced by the combination of the food with oxygen of the inhaled air, but that it acts in a manner more nearly analogous to that of an electric motor working in virtue of energy supplied to it by a Voltaic battery."¹⁰ This view, which was foreshadowed by Faraday and Helmholtz and is accepted by Loeb and other modern physiologists, is in substantial agreement with the Thomsonian theory of the electronic nature of matter, and some advance, notably in physiological therapeutics, has been made by investigating the electrolytic or ionic phenomena of living tissues. As Lord Kelvin put it, in 1860, "we can conceive that electricity itself is to be understood as not an accident but an essence of matter," and he adds that electricity in motion always produces heat. In other words, entropy can be located in any electric charge, *a fortiori*, in the colloidal or electrolytic particles of living tissues. But we know from Gibbs's theorem that the electromotive force of a chemical cell is equal to the free energy of decomposition in the cell; and since the total free energy of a body, its capacity to do work, is proportional to the absolute temperature and no work can be done at the absolute zero, it follows that chemical energy is a derived property, the result of differences in temperature (Carnot's principle). The chemodynamic activities of living tissues are thus seen to be due, not so much to their physical capacities (volume, energy, entropy), as to their intensities (pressure, temperature, chemical potentials), and physiological activity is qualitative rather than quantitative in its essence, because it deals, not with stable, but with labile states of substance. Here as elsewhere nature is "maxima in minimis," and size and shape are of little consequence in her scheme of things. This brings physiology back to the sound view enunciated by Professor Huxley, when he said that the cells "are no more the producers of the vital phenomena than the shells scattered along the sea beach are the instruments by which the gravitative force of the moon

acts upon the ocean. Like these the cells mark only where the vital tides have been and how they acted."¹¹ Until this point of view became permanent, physiology remained in the static or morphologic stage of "marking time," and as Loeb has insisted, phenomena like secretion, oxidation or sleep were erroneously attributed to blood pressure instead of being regarded, as they now are, as dynamic activities automatically inherent in all living protoplasm, whether the organisms have a circulation or not. Irreversible thermodynamics itself is essentially a qualitative rather than a quantitative science, as being concerned with the direction in which transformations of energy take place rather than the rate of change at which they occur, which can only be determined by experimental procedure. In biodynamics, even the Guldberg-Waage law of mass action is of comparatively little importance, because the conditions underlying vital phenomena being labile, are, in Spinoza's phrase, of a kind *quæ nullo numero explicari possunt*, that is, they are essentially qualitative. Again, an enormous amount of controversy has been wasted upon osmotic phenomena through the confusion of osmosis with osmotic pressure, that is, through attributing the phenomena of osmosis to its ultimate effect—hydrostatic pressure—when the real qualitative interest of the problem lies in the causes assigned by Gibbs—differences of temperature or of chemical potentials in the substances which can pass through the semipermeable membrane. The question arises, what then is the function of the semipermeable cell membrane in living tissues. As McDermott has said, life is not so much the metabolism or chemical interaction of proteids as an inhibition of such interaction; the cell wall acting, like the boundary system in the dynamo or heat engine, to permit only such diffusion of energy as will be available for mechanical effect. From the simple cell up to "the vast area of boundary and boundary strain which the human brain represents," living matter maintains its energy, configuration, and individuality in virtue of its limiting membrane or periphery, the analogue of the rigid envelope of physics. Thus life, as McDermott insists,¹² is, even in the dynamic case, generally adiabatic, the limiting membrane storing up energy by inhibiting chemical spontaneity; so that while there is a small, varying efflux or influx of energy through the semipermeable membrane, a fixed quantity of the energy inside remains constant.

Professor Haldane in his recent address before the British Association (Dublin, 1908)¹³ laments the inadequacy of physicochemical hypotheses to explain physiological phenomena, yet admits that, if we could only understand the heat relations of the animal body more fully "we could bring organic and inorganic phenomena under the same conception." To establish these relations without making any assumptions as to final causes is the intention of thermodynamics.

(To be concluded.)

¹⁰Huxley, *British and Foreign Medical-Chirurgical Review*, London, xii, p. 314, 1853.

¹¹McDermott, *Medical Press and Circular*, London, n. s., lxxxv, pp. 332 to 344, 1908.

¹²*Nature*, London, lxxxviii, p. 555, 1908.

¹³*Medical Review*, *Practical Lectures*, London, xi, pp. 492-1894.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LXXXIX.—How do you try to prevent the recurrence of renal colic? (Closed August 16, 1909.)

XC.—How do you treat typhoid fever? (Closed September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXVIII has been awarded to Dr. W. A. Wallace, Spartanburg, S. C., whose article appeared on page 403.

PRIZE QUESTION LXXXVIII.

THE TREATMENT OF EPISTAXIS.

(Concluded from page 507.)

Dr. Theodore Bachly Pearson, of Wilmore, Ky., writes:

Epistaxis is due to so many causes that it is impossible to give, in so short a paper, fully the treatment for the cure of the recurrent types.

The main thing, of course, is to stop the flow of blood. Adrenalin chloride, 1 in 1000, pure or in not less than 50 per cent. liquid petrolatum or glycerin solutions carefully and thoroughly sprayed into the anterior or posterior nares, as the case may demand, gives relief in from three to five minutes.

If I have no adrenalin I send for it at once, in the meantime resorting to any of the following methods: Cold water poured down back of neck; water, as hot as can be borne, injected into nares; pinching and compressing nose; mustard plaster to back of neck; ice cold compresses to forehead and nose; snuffing of mild salt water; petrolatum to bleeding surface.

I never use and warn against plugs of cotton, gauze, or any other material, and mineral styptics. They are dangerous, having been reported as the cause of death by apoplexy in a number of cases, especially plethoric subjects. It is very seldom, indeed, one really has occasion to use them.

In cases of recurrent epistaxis the likelihood of organic cardiac lesions or hepatic, pelvic, or renal disorders should be borne in mind, and appropriate measures instituted, if need be. In such cases treatment of the nasal or pharyngeal mucous membrane proves inadequate except for the moment, and other measures, not within the scope of this paper, should be resorted to.

Dr. C. S. Early, of Camden, Ark., states:

The condition of the patient should first be considered and if there is any indication for a stimulant, it should be given. Then a brief history should be taken to determine the cause, frequency of the attacks, and their duration and effect, and whether it is a result of an operation or an injury to determine whether the hæmorrhage should be stopped at once or not, as it might be acting as a safety valve in a plethoric person, thus preventing a case of apoplexy, or there may be a history of previous attacks after which the patient felt better, or it may be vicarious.

Having decided to stop the hæmorrhage at once, see that the patient blows the blood clots out of his nose and immediately spray the nasal cavity or cavities and if necessary the nasopharynx with a freshly prepared solution of adrenalin chloride, 1 in 5000. After having well cleansed the nasal cavities and if necessary the nasopharynx with this solution, a thorough examination of them should be made with a good reflected light, speculum, cotton carrier, and cotton to find the bleeding spot which is generally on the anteroinferior part of the cartilaginous septum, and will generally be found oozing very little on account of the adrenalin having almost stopped it. The bleeding spot should be touched with adrenalin (1 to 1000) on a small cotton mop for a minute or so, then covered with ferric chloride antipyrine powder. This should, if necessary, be repeated. A thorough search should be made for foreign bodies which should be removed at the time of examination, for deformities which, if they are recent, should be corrected at the time of the examination and for ulcers and tumors which should receive later attention.

After giving the adrenalin chloride and ferric chloride antipyrine a fair trial, and with the aid of such accessories as ice over the nose and back of the neck, hot foot bath, pressure on the upper lip against the maxilla, pressure over the facial artery where it crosses the mandible, pressing the alæ against the septum, and holding the hands above the head, if the bleeding does not stop, the nasal cavity should be packed with a long narrow strip of aseptic gauze moistened with the adrenalin solution. The packing can be easily accomplished providing a good reflected light, speculum, and dressing forceps are used, and the nasal cavity lightly sprayed with a four per cent. solution of cocaine, though the cocaine is not always necessary, and the first part of the tampon is carried well back. The packing should be gauze and not cotton unless the cotton is tied together in the form of a "kite tail tampon" as there is too much danger of leaving part of the cotton in the nose. The writer once saw a patient who had cotton in his nose for six months. The packing of the posterior nares is rather difficult but fortunately seldom necessary. The technique is described in any modern textbook on diseases of the nose and throat. The packing should be removed in twenty-four hours, and the nasal cavities, and if necessary the nasopharynx, should be sprayed with the adrenalin solution, and repacked if necessary.

Occasionally the doctor may not have adrenalin chloride and ferric chloride antipyrine at his command, he will then be obliged to use the more sim-

ple means to stop the hæmorrhage, as alum powder or solution, tannic acid powder or solution, antipyrine two to five per cent. solution, diluted vinegar or Monsel's solution (the latter should be applied only to the bleeding spot); or to irrigate the nasal cavity with hot water or pack it with strips of ham fat till he can get something better.

When the hæmorrhage is stopped, the history and the examination should be completed to tell whether there is any systemic cause of it or not, as diseases of the heart, lungs, liver, kidneys, and arteries, or measles, diphtheria, influenza, malaria, typhoid fever, syphilis, anæmia, scurvy, purpura, hæmophilia, etc., and the proper line of treatment for each carried out. If the hæmorrhage has been very severe, stimulants should be given hypodermically and an enema of normal salt solution by the "drop method" which was introduced by Dr. J. B. Murphy, of Chicago.

Dr. Frank A. Metcalf, Chicago, says:

The treatment of epistaxis or nosebleed may be considered in several ways: 1. The home treatment, or those remedial agents used by friends or relatives. 2. The local treatment which the physician applies. 3. The internal treatment which includes the internal treatment of active bleeding, and the treatment of constitutional causative factors.

It will be found that the agents used at home are usually making pressure against the upper lip; snuffing hot or cold salt water up the nose; application of a key or hot and cold cloths to the back of the head and neck; plunging hands and wrists into ice water, and packing nose with strips of pork rind. One mother even reported having packed the nose with tea leaves wrapped in a piece of old linen.

The physician's first duty is to allay fear, and to make as thorough an examination as possible to find the bleeding points. These are usually located in the anterior part of the nose at base of floor and septum or above and in front of middle turbinate bones, although the bleeding may come from posterior portion or be a general oozing. Locally my methods are as follows: First, apply adrenalin chloride in 1 to 1000 solution, which a physician should always carry with him, and if the bleeding is very severe, use this and cocaine, four to eight per cent., equal parts. I have never had any trouble so far with using the last named drug. Pressure against the facial artery or upper lips. For lack of a thermocautery, I have used a darning needle heated to a cherry red. If this treatment does not have the required results I pack the nose, anteriorly with narrow strips of gauze or posteriorly with plugs of gauze, wool, or cotton, the size of a walnut. In packing the posterior nares, attach plug to the middle of a strong silk thread; pass a soft rubber catheter, Belloco's cannula, or if those are not at hand, a piece of wire, that bends easily (picture frame wire), the end of which is protected by cotton, through the nasal cavity, following the floor as much as possible. Grasp the end with a forceps when it appears in the pharynx; tie one end of string to same and pull the plug into position. Tie the strings around the neck. In packing the anterior nares the best thing to use is a long, narrow, strip of gauze, or small plugs of wool, or cotton

tied together like the tail of a kite. In using the strip of gauze, carry the end back as far as possible along the floor of the nose, remove the probe, and carry another fold back on top of first, repeat until the cavity is filled. Two things must be remembered: First, do not pack too tightly; second, remove packing within twelve to twenty-four hours.

Internally, no one drug is a specific. I have tried ergot, both by mouth and by hypodermic injection and found it the best. Hamamelis is good where there is a general oozing from the veins. The internal treatment of the constitutional causative factors must be left to the individual physician.

In closing I wish to say that I depend upon finding the bleeding point, using adrenalin chloride, cocaine, the steel point as cautery, and then packing, first posterior, then anterior nares. The different forms of iron I have never tried. Personally the internal treatment of active bleeding does not appeal to me.

Dr. F. B. Spengler, of Baldwinsville, N. Y., remarks:

In writing on the treatment of epistaxis, it might be well to mention that nosebleed may be due to a blow on the nose, a small ulcer of the septum, vicarious menstruation, congested membranes from any cause, fracture of the base of the skull, malignant growths, syphilis, tuberculosis, some fevers, such as typhoid, and many other causes.

In plethoric patients, it is well not to stop the bleeding too soon as it may be Nature's method of lowering the blood pressure. The patient will feel better too, if quite a bit of blood is lost. In a great many instances, the bleeding will stop of itself, especially so if the patient will hold his head erect and compress the nostril with his finger for three to five minutes, spitting out the blood that passes into the nasopharynx, and being careful not to blow his nose for a half hour or more. A little hydrogen peroxide snuffed up the nose or applied to a pledget of cotton will often stop the bleeding. Adrenalin, 1 in 10,000 solution snuffed, or 1 in 1000 solution, externally applied, is effective.

There is frequently a small ulcer of the septum a half inch from the floor of the nose and an equal distance from the anterior orifice. After thoroughly cleansing the nostril, have the patient hold the head back so that the blood flows into the nasopharynx and touch the ulcer with the cautery or some caustic.

If bleeding is severe and needs to be checked immediately either because of the anæmia or the annoyance, the easiest and best way that I know of is to take one or two tampons, and, with a mouse toothed, bent forceps, push the tampons well up and back into the nostril. The blood and secretions swell the tampons so that they compress the bleeding point. It is best to leave them in for twenty-four to forty-eight hours when they ought to come away without bleeding. In case the bleeding recommences, replace the old tampons with new ones and leave for twenty-four or more hours.

Occasionally it may be necessary to plug the posterior nares which should be done by passing a catheter to which a string is tied through the nose and into the pharynx. Bring the string out through the mouth and attach a suitable sized tampon of cot-

ton moistened with hydrogen peroxide or adrenalin. Draw the tampon into the posterior nares through the pharynx. The anterior nares are afterward plugged with gauze, commencing to pack against the tampons in the posterior nares. A string attached to the tampon in the posterior nares and running out through the mouth should be left to facilitate removal.

Dr. Herbert Shattuck Johnson, of Malden, Mass., writes:

Ætiology: Hæmorrhage from the nose may be from either a slight or severe injury, or may occur spontaneously. The tissues are so formed that congestion easily occurs, and the bloodvessels have little protection except their own walls. Injuries to the nose from a blow or fall may cause a slight or severe hæmorrhage. Ulceration or tumors or disease, like scurvy or purpura, may cause a severe epistaxis. Violent sneezing or coughing or irritating vapors sometimes cause profuse bleeding. Epistaxis may be vicarious from suppression of menses, etc.

Diagnosis is easy as a rule though sometimes the blood may pass by the œsophagus and the quantity lost not appreciated. Only as the hæmorrhage may act as a safety valve, as in overfilled cerebral vessels, should it be allowed to continue.

Treatment. Rest, the higher the head the better, unless the patient is very weak. Pressure against the nostrils, or cold to the side of the nose, or cold compress to the back of the neck will arrest a slight epistaxis. Astringent douches will stop the bleeding in some cases. When these means do not arrest the bleeding it is sometimes necessary to plug the anterior and posterior nares. The Bellocq cannula is often used for this purpose and a tampon of cotton or sponge put in place. I have used the following plan and found it successful in most cases. Cut a piece of salt pork, near the rind if possible, as large round as a lead pencil and somewhat wedge shaped. Have it one and one half to two inches long. Usually this is rolled in some astringent like compound alum powder. This plug can be easily inserted into the bleeding nostril, where it should remain twenty-four hours and is easily withdrawn, since quite a little secretion is formed at the sides of the plug. If hæmorrhage returns a fresh piece can be inserted. The advantage of this plan is that there is no adhesion of cotton or sponge at the bleeding point, and no clot formed disturbed by the removal of the tampon. Then, too, the tampon used is found in nearly every home and no delay in applying treatment.

Dr. P. E. Hommell, of Jersey City, observes:

My treatment for epistaxis consists of the following measures:

1. Postural. After removing collar and neckwear, seat the patient upright, head back, both arms to be held above the head. Compress the nostrils with the fingers for about ten minutes, the patient at the same time breathing through the mouth. Ordinary cases of nosebleed can sometimes be thus controlled.

2. Hydropathic. Apply iced water to the forehead and nose, back of neck, piece of ice to roof of mouth; or patient can suck or swallow small

pieces of ice. Injections of iced water can also be employed, or a steady stream of iced salt and water through nasal cavities. Warmth to extremities.

3. Therapeutics. (External.) Injections of vinegar and water are useful; also, aqua hamamelidis, tannic acid in water; antipyrine, ten per cent. solution; suprarenal solution; alum water; cotton tampons, saturated with glycerine of tannic acid, or strong alum water are also efficacious. Packing the anterior nares with a narrow strip of gauze soaked in hydrogen peroxide and squeezed dry usually succeeds. As a last resort plugging the posterior nares by means of a Bellocq's cannula.

4. Therapeutics. (Internal.) The proper exhibition of the following agents are of value; Ergotin hypodermically, aconite, atropine, sulphuric acid, gallic and tannic acids, iron perchloride tincture; salines for catharsis, as Epsom salt, etc.

Dr. W. M. Burwell, of Chincoteague, Virginia, states:

When other simple means for the treatment of epistaxis, such as local application of hydrogen peroxide, hamamelis, solution of alum, have failed, I resort to the safe, simple, and sure Burnay sponge. The Burnay sponge is made by condensing under heavy pressure from fifteen to twenty layers of aseptic absorbent gauze or lint. Then the condensed sheets, about three sixteenths of an inch in thickness, are cut into pieces of suitable size and shape for introduction into the anterior nares. The sponges are prepared by the makers of surgical dressings, and can be had of dealers in surgical supplies.

After observing which side of the nose is the source of the hæmorrhage a sponge is grasped, preferably with a slender nasal forceps—an ordinary slender hæmostat will answer—and gently shoved up into the nose so as to cover the site of the bleeding. Absorption of blood by the sponge soon causes it to swell and fill that side of the nose, and by pressure over the site of the bleeding most effectually controls the hæmorrhage.

The sponge is left in position for one or two days if necessary, when it is easily removed with the same forceps with which it was introduced. If there is hæmorrhage from both sides of the nose at the same time a sponge can be introduced into each nostril.

Correspondence.

LETTER FROM BUDAPEST.

The Sixteenth International Medical Congress.

BUDAPEST, September 2, 1909.

The Sixteenth International Medical Congress convened here in the beautiful capital of Hungary on August 29th, and will complete its session on September 4th, thus occupying an entire week. The formal opening ceremonies were held in the large hall of the municipal buildings on Sunday morning, and the occasion was one of exceptional brilliancy. His Imperial Highness, the Archduke Joseph, who presided at the opening ceremonies, was accom-

panied by an imposing retinue. He delivered an address of welcome on behalf of the government and the people of Hungary. An impressive address was made by the Minister of Public Education immediately after that of the archduke, which was received with marked enthusiasm. The minister is a man of imposing presence, with a fine voice and pleasing manner, and at once caught universal attention. These addresses were delivered in the French language. Brief addresses were made by the chairmen of the various national delegations and the congress entered upon the scientific work of the various sections.

The attendance has proved much larger than was expected. The supply of official badges was exhausted on the first day, but the committee renewed the supply amply by the following morning. The hotels are quite inadequate for housing the delegates and many are quartered in private homes. However, no complaints are heard, as the entire population seems united in the purpose of extending the most cordial hospitality to their foreign visitors. So far as I can judge, the international character of the organization is well maintained, and official delegations are present from all the nations of the world in which any pretense is made of cultivating the science of medicine. In all the sections are seen men whose names have long been familiar in their association with the progress of the various departments of medicine and surgery. Berlin, Paris, and Vienna are naturally represented by full complements of distinguished men, and our own country, though far distant, is represented by a large and thoroughly representative delegation. In the Section in Internal Medicine, Musser, Thayer, Anders, and Barker have conspicuous places; in Surgery are Murphy, Matas, Bevan, McMurtry, Morris, Walker (of New York), McArthur, Cushing, and other well known men; in Genitourinary Surgery, Bransford Lewis; in Neurology, Dercum, Sachs, and Prince. The same is true of the other sections, such as Orthopaedics, Military Surgery, State Medicine, Ophthalmology, Otology, and Laryngology. The American delegates taking active part in the proceedings.

It is outside the purpose of this communication to attempt an account of the scientific proceedings in any of the sections. Among the agenda of unusual interest I will mention the joint session of the Sections of Internal Medicine and Pathology, devoted to the discussion of Immunity, and the joint sitting of the Sections of Internal Medicine, Gynecology, and Surgery on Appendicitis. The latter discussion was participated in by Murphy, McMurtry, and Morris.

Upon the official programme it was announced for the second day of the congress that the American delegation would meet at the monument to Washington, which is attractively placed in the city park, near the main entrance. This appropriate

ceremony was made one of the most delightful incidents of the visit of the American physicians to Budapest. The monument is thoroughly artistic and was presented to the city by the Hungarians residing in the United States. The Hungarian government gracefully recognized the action of the American physicians by sending beautiful wreaths to be placed at the monument, and the Minister of Public Instruction attended in person. The attendance numbered more than a hundred persons, and included many ladies. The day was ideal, and the environment most pleasing. In the absence of the American Consul from the city, Mr. Morris presided, and the address on the part of the Americans was made by Dr. Lewis S. McMurtry, of Louisville. The Hungarian Minister made a



THE WASHINGTON MONUMENT IN BUDAPEST.

brief and most appropriate address, using the English language with fluent accuracy. This occasion will long be remembered by those who in this distant land assembled at the base of a statue of the Father of their country, with the American flag unfurled, paying tribute to home, country, and freedom while standing on foreign soil.

The social features of the congress are most generous and admirably arranged. The splendid public buildings of an old capital afford exceptional facilities for such functions. The Court reception at the palace of course surpassed all other entertainments in splendor.

LETTER FROM BERGEN.

The Second International Scientific Congress on Leprosy.
BERGEN, NORWAY, August 18, 1909.

In Bergen, the home of G. Armauer Hansen, the discoverer of the lepra bacillus and the scene of the labors of Danielssen and Boeck, who may be justly considered as having laid the foundations of modern scientific leprology, the Second International Congress for the Study of Leprosy was formally opened on August 16th by his Majesty King Haakon VII. The sessions were continued for four days and were attended by 170 delegates and members from thirty different countries. Among the best known of the large number of distinguished physicians present were the venerable Sir Jonathan Hutchinson, Sir Malcolm Morris, Radcliffe Crocker, MacLeod, and Newsholme, of London; Sir Ronald Ross, of the Liverpool School of Tropical Medicine; Sir Allen Perry, of Ceylon; Murray, of Cape Colony; Brocq, Jeanselme, Martin, and Marie, of Paris; Cousin, of Marseilles; Raynaud, of Algiers; Pawloff, Prokharoff, and Petersen, of St. Petersburg; Dehio, of Dorpat; Kirchner, Wechselmann, and Schilling, of Berlin; Arning, Deycke, and Nocht, of Hamburg; Sticker and Doutrlepoint, of Bonn; von Baelz, of Stuttgart; von Düring, of Dresden; Lang and Ullman, of Vienna; Kobler and Zechmeister, of Serajelvo; Kitasato and Shimohira, of Tokyo; Engel Bey and Graham, of Cairo; Kosolimas, of Athens; Ehlers and Madsen, of Copenhagen; Dubois-Havenith, Van Campenhout, and Bordet, of Brussels; Moreira, of Rio de Janeiro; Babes, of Bucharest; Sederholm and Moberg, of Stockholm; Bonilla, of Mexico; Uffreduzzi, of Milan; Campana, of Rome; Perroncito, of Turin; Negra, of Havana; Ching Hao, of Canton; Tagerlund, of Helsingfors; Sommer, of Buenos Aires; Haga and de Jonge, of the Hague; Falcão, of Lisbon; Muñoz and Zello, of Madrid; Harbitz, Grön, Holmboe, Boeck, Schiötz, and Gade, of Christiania; G. Armauer Hansen, Klaus Hansen, Lie, and Looft, of Bergen; and Barthen, of Trondhjem. The United States was officially represented by Dr. J. C. Wise, of the navy, and Dr. Donald H. Currie, of Honolulu. Others present from the United States were Professor Jarvis H. Wright, of Harvard University, A. Ravogli, of Cincinnati, and Henry L. Shively, of New York.

During one of the scientific sessions Armauer Hansen demonstrated leprosy bacilli in a section of tissue removed from the skin of John Early, the American soldier who had contracted leprosy in the Philippines, a specimen having been sent to him for examination by Early's wife. The question of diagnosis in this somewhat famous case is thus definitely settled by high authority. Early is certainly a leper of the maculoanæsthetic type. The decision of the Washington authorities is sustained, and the clinical and laboratory diagnosis of Professor Ehlers, of Copenhagen, which had been disputed in New York, is fully corroborated.

As a result of the numerous scientific papers presented and the deliberations of the congress the following resolutions were adopted:

1. The second International Scientific Congress on

Leprosy confirms in every respect the resolutions adopted by the first International Conference of Berlin, 1897. Leprosy is a disease which is contagious from person to person, whatever may be the method by which this contagion is effected. Every country, in whatever latitude it is situated, is within the range of possible infection by leprosy, and may therefore usefully undertake measures to protect itself.

2. In view of the success obtained in Germany, Iceland, Norway, and Sweden, it is desirable that other countries with leprosy should isolate their lepers.

3. It is desirable that the children of lepers should be separated from their leprous parents as soon as possible, and that they should remain under observation.

4. An examination should be made from time to time of those having lived with lepers, by a doctor having special knowledge.

5. It is desirable that lepers should not be admitted to certain occupations in which there would be danger of their transmitting their disease to others. In all countries leprous vagabonds and beggars should be strictly isolated.

6. All theories as to the ætiology and the mode of propagation of leprosy should be carefully examined to ascertain if they accord with our knowledge of the nature and the biology of the bacillus of leprosy. It is desirable that the question of the transmissibility of leprosy by insects should be elucidated, and that the possibility of the existence of leproid diseases among animals (rats) should receive early study.

7. The clinical study of leprosy induces the belief that it is not incurable. We do not at present possess a certain cure. It is desirable, therefore, to continue the search for a specific remedy with the greatest zeal.

Therapeutical Notes.

Prophylactic Treatment in Threatened Cerebrospinal Meningitis.—According to L. Rivet (*La Clinique*, July 23, 1909) it is recommended to render the nasopharynx aseptic by the inhalation of iodine, coupled with applications of iodine to the pharynx. The author uses the following application:

R	Iodine,	5v;
	Guaiacol,	gr. xxx;
	Thymol,	gr. iv;
	Alcohol, diluted,	5vi

M.

A sufficient amount of this solution is poured into a cup, or a porcelain capsule, which, in turn, is plunged into a hot water bath, in order to facilitate the liberation of the antiseptic vapors, which are lightly inhaled through the nostrils for three minutes at a time, four or five times a day. In addition, it is recommended to paint the tonsils morning and evening with glycerite of iodine in about thirty applications. The patient should also be advised to gargle the mouth frequently with a ten per cent. solution of hydrogen dioxide.

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THE TRANSACTIONS OF THE WASHING-
INGTON TUBERCULOSIS CONGRESS.

It is now about a year since the Sixth International Congress on Tuberculosis was held, and the *Transactions* have recently been issued. They make six volumes, two of them in two parts each, containing in all 4,832 pages octavo, printed mostly in English, but very largely also in French, German, and Spanish. Those authors' abstracts which were furnished for translation prior to the opening of the congress are reprinted in the volumes in the languages mentioned. It was found at the close of the congress that there were no funds left to warrant the expense of further abstracting and translating.

These volumes in themselves constitute almost an exhaustive library of our present knowledge of tuberculous disease; indeed, there do not now occur to us any important phases of the subject which are not dealt with in their pages by observers who are entitled to speak with a high degree of authority. Rapidly as medical publications in these days fall behind their full original value as guides in practice, these *Transactions* may confidently be expected to serve for many a year to come as in most respects the repositories of views not yet superseded; and for all time they will continue to cast the light of history on the development of our conceptions in a field of the utmost importance to medicine in general and to the welfare of the human race.

At the time of the congress it was announced that

the *Transactions* would be published in the course of three months, but everybody of much experience in editorial work felt that such an expectation could not be realized with due regard to careful editing. Those who had the work in charge must soon have come to take the same view of the matter, and they have shown wisdom in doing the work thoroughly rather than in hasty compliance with an ill advised promise. The volumes bear evidence of the most careful editorial supervision, and the printer has done his part exceedingly well. The *Transactions* should be treasured by all who are fortunate enough to receive them.

ALASKA.

For many years after our purchase of Russian America it was a common thing to hear mention of the territory coupled with the expression "Seward's folly," but we long ago began to realize that in Alaska we had a precious acquisition, and it did not need the Alaska-Yukon-Pacific Exposition, the unveiling of a statue of Secretary Seward, or the address delivered on the occasion by his son, General Seward, to make the reversal of opinion unanimous. From a medical point of view particular interest should be felt in Alaska, and we are glad to be able to quote as follows from a letter recently received in New York from Major Charles E. Woodruff, of the Army Medical Corps:

Then came the boat ride from Vancouver to Seattle through the island studded Puget Sound and a short visit to the Yukon Exposition; and, by the way, Alaska is bound to be the home of a mighty and numerous people—brainy and perhaps blond. Its climate is identical with that which caused the evolution of the dominant type of Europe, and experience shows that it is the healthiest climate in America. Already its people are doing things. There is plenty of arable land which can raise everything they do in Scandinavia or Scotland, and, besides that, the mineral resources will make the people rich. Then—and this is the main point—they can raise healthier and better children there than in any other part of our country. The tots now being born there are destined to have a profound influence upon our future. Who knows but that these big northern, stolid, strong men, raised under the cool shades of Alaska's clouds and rains, will surely repeat the history of Scotland, which has been and is the breeding ground for the rulers of the British Empire? It is said that when certain Scotchmen saw the inevitable union, should Queen Elizabeth not leave offspring, there was apprehension that Scotland would be dissolved in England, but it was even then known that Scotchmen would dominate. Scandinavia has always been the breeding ground for the creators and rulers of Aryan civilization, and Alaska will only repeat history. It is a pity that so little is known popularly of our most precious possession. The medical profession in particular should know more of this wonderful country.

When Major Woodruff wrote this letter he was on board an army transport bound for the Philippines, another of our acquired possessions of which

it is now fashionable in some quarters to speak slightly, and with regard to which his well known climatological and ethnological views—views which he is continuing to uphold most vigorously and entertainingly—probably discline him to glow with enthusiasm. Concerning his estimate of Alaska, however, there is no uncertainty, and we believe that it is correct.

THE ÆTIOLOGY OF BERIBERI.

Those who advocate the rice theory of the ætiology of beriberi have an additional circumstance to add to those which are already adduced in the experiments of Fraser and Stanton (*Studies from the Institute for Medical Research, Federated Malay States*, No. 10). The authors divided about five hundred Javanese indentured laborers into two groups. Both groups were engaged in road building. The district was remote enough from towns and villages for accidental sources of infection to be excluded. One of the parties was fed with "white rice," that is, rice which is deprived of its outer coverings by milling without antecedent treatment of any kind. The other party was fed on "parboiled rice," that is, rice which has been subjected to the action of hot water before being milled. The party fed on white rice consisted of 220 people, and twenty of them contracted beriberi. The party fed on parboiled rice numbered 273, and no case of beriberi occurred among them. Only those coolies who showed unmistakable and complete symptoms of beriberi were considered as having contracted the disease, so that if incomplete and doubtful cases were included the number of persons on a white rice diet who contracted the disease would have been greater. No case of beriberi occurred in a person who had been on the white rice diet for less than eighty-seven days. Systematic search for organisms was made, but none was found. In three instances in which definite outbreaks of beriberi occurred in persons on a white rice diet the substitution of a diet of parboiled rice was followed by a cessation of the outbreak.

It appears to us that parboiling the grain would suffice to kill an organism, such as a fungus or mould, which might be found in the hull of the grain. The milling of rice without first parboiling it would allow this organism to contaminate the grain, and when eaten continuously such contaminated grain might produce the disease. We think the cause of the disease will be found in the rice padi. The authors think that their work lends support to the view that beriberi is in intimate relation with white rice, and that further research along the lines of their experiments in the Jelebu jungle is justified.

THE MIKULICZ MEMORIAL.

For the last twenty years the Germans have been prolific in memorials. After having exhausted their innumerable kings and princes—there is hardly a city which has not such a monument—the soldiers, diplomats, and poets had their turn, and now the physicians are made the subjects of this hero worship. In our issue of July 12th, we spoke of the Kussmaul memorial, which was unveiled on May 15th. Twelve days later there took place the unveiling of the Mikulicz memorial in Breslau, in the presence of the family of the deceased, the professors and students of the university, and the state and civic officials. These ceremonies all follow the same procedure, and usually are graced by the presence of a prince. In this case it was the hereditary Princess of Meiningen. The monument is the work of A. von Volkmann, and represents the crowning of Mikulicz by Pallas Athene and Hygieia. In Freiwaldau, a small town near Gräfenberg, in Austrian Silesia, there was unveiled on July 25th a monument to Priessnitz, representing the introducer of modern hydrotherapy in a statue of heroic size, with allegorical figures showing Priessnitz and his work on man's fountain of youth. Although each of these men, Mikulicz and Priessnitz, did more for humanity than many a king and general, we think that a plain statue would better have depicted the eminent surgeon, as well as the father of modern hydrotherapy, than these allegorical productions, which, indeed, are a good field for sculptors, but will always necessitate a kind interpreter.

OCCUPATION DISEASES.

Besides the diseases directly traceable to occupation, there is a real disease thus produced in people who are not doing the sort of life work they enjoy or are fitted for. What shall the physician do when these patients consult him? He will recognize them by a preoccupied air and a dejected appearance. They speak quietly and in very even tones. They are depressed, neurasthenic, anæmic, or genuinely desolate. Their tissues are flabby and have lost resiliency. These patients usually complain of symptoms pointing to diminished nutrition. And it is evident that the sufferer lacks some of the predominant forces of life—enthusiasm and hope.

It is not a minor duty of the physician to cheer these patients. Very often, by his sympathetic manner, he may infuse some interest into the mind of the patient. Such people become spiritless and do not respond well to the tonics among our drugs. Very frequently we can discover real physical or mental obstacles to their success in the channels of occupation they follow. To remove such a failure

and cause of failure from a life is productive of great good, and medical men stand in a position which often enables them to accomplish just this.

ITALIAN MEDICINE IN FRENCH.

We have often remarked upon the sterling quality of the work of the Italians in contributing to the medical progress of the present day. It is to be regretted that many of us do not understand the noble Italian language, and such a conviction on the part of some of our French brethren has probably prompted the publication of a journal of Italian medicine in French, the first issue of which, for June, 1909, has been received at this office. It is entitled *Revue mensuelle de la presse médicale italienne*, and is published in Milan. The first number consists of twenty-eight octavo pages of reading matter. The editor is Dr. L. Mongeri, and among his collaborators are several of the best known physicians of Italy.

TUBERCULOUS PERITONITIS IN INFANTS.

Unlike tuberculous peritonitis in older children, this affection in infants is as yet little known. In the *Archives de médecine des enfants* for June Weill and Péhu have described tuberculous peritonitis in infants as secondary peritoneal miliary granulations. True tuberculous peritonitis is that form of the affection undergoing its development with sufficiently distinctive symptomatic characters, allowing one to make a diagnosis. Now, it is just this true tuberculous peritonitis which is encountered only exceptionally. In order to comprehend its evolution fully, it is necessary to consider certain peculiarities of the pathological changes met with. The affection is usually characterized by either fully developed or softened tubercles, and consequently one is dealing with a caseous peritonitis. The fibrous type is very rare and practically unknown, and the same may be said of the purely ascitic form, which is encountered only exceptionally.

Tuberculous peritonitis in infants begins in various points of the peritonæum, on the parietal layer or in the visceral folds of the omentum or mesentery, producing adhesions between the peritonæum and the abdominal organs, particularly the intestine. For this reason encysted foci may be formed or they may communicate with the rest of the peritoneal cavity. The contents of these foci are composed of pus or a cloudy serous fluid. Lesions of the intestine are common during the progress of the disease, in the form of tubercles or tuberculous ul-

cerations, and caseous lesions are almost always encountered in the genital organs. For this reason it may be questioned whether or not the peritoneal infection is primary or secondary, following lesions of the genital apparatus, but this problem is as yet unsolved. It should also be pointed out that tuberculous peritonitis in infants is often accompanied by tuberculous invasion of the lumbar, mediastinal, or mesenteric lymph nodes, and this shows that the tuberculosis rapidly tends toward generalization.

The clinical evolution permits one to make the diagnosis. The affection begins with intermittent pain, and often the patient will flex the thighs on the abdomen; there is a progressive and marked pigmentation of the integument of the abdominal wall, sometimes with vomiting and diarrhœa, while a rapid loss of flesh becomes manifest. Soon there is meteorism, with a collateral circulation and sometimes diarrhœa and other intestinal disturbances. There is pain on palpation, but the situation of the dulness does not change when the position of the patient is changed, and deep palpation in some cases will reveal spots of induration, such as are met with in tuberculous peritonitis in older children. Vierordt has particularly insisted on the presence of a purulent discharge from the vulva. The temperature is rarely raised, and the affection develops slowly. In some cases a collection may open through the umbilicus, giving rise to a stercoral fistula. Enlargement of the axillary or subclavian lymph nodes may be found. The liver and spleen are large.

Sometimes a cure is possible, particularly in the ascitic form, but generally speaking the outlook is bad. Certain hereditary syphilitic cirrhoses of the liver and spleen might be taken for the ascitic type of tuberculous peritonitis, but this is most infrequent, because ascites rarely occurs in syphilis. The hardness of the liver is a most important distinctive sign. Acute nontuberculous peritonitis has a much more sudden and acute evolution, while abdominal neoplasm may also cause mistakes, but the absence of any rise in temperature, also of any glandular involvement, will usually allow one to distinguish between the two affections. On the other hand, it may be difficult to distinguish between a tuberculous peritonitis and the ulcerating form of intestinal tuberculosis, because in the latter affection the mesenteric lymph nodes are involved, but there is no ascites and the peritoneal masses are more distinctly defined than in peritonitis. If the peritoneal tuberculosis is caseous or if suppuration has taken place, the question of opening the abdomen must be considered, in order to evacuate the pus, but the operation is very serious and rarely successful. Perma-

nent cures are rare. In certain cases the x rays may be employed, but it should be pointed out that in some ascitic types the affection may thus be aggravated. X ray treatment should be resorted to only with circumspection, and during the treatment the patient must be carefully watched in order to cease the treatment when toxic phenomena appear.

Obituary.

HENRY C. CHAPMAN, M. D., D. Sc.,
of Philadelphia.

Dr. Chapman died at his summer home in Bar Harbor, Maine, on Tuesday, September 7th, as the immediate result of hæmorrhage from the stomach. The deceased, who was a grandson of Dr. Nathaniel Chapman, was born in Philadelphia in 1845. In 1867 he was graduated from the Medical Department of the University of Pennsylvania. After three years spent in study in Vienna, Paris, Berlin, and London, he returned to Philadelphia and gave instruction in anatomy and physiology in the University of Pennsylvania. In 1877 he received the degree of doctor of medicine from the Jefferson Medical College, and was made professor of comparative anatomy and physiology in that institution. He retired with the title emeritus professor of physiology and biology a few years ago. From 1876 to 1880, Dr. Chapman acted as coroner's physician in Philadelphia.

Dr. Chapman was one of a group of medical men, now progressively becoming more rare, who were interested in other branches of natural science than those bearing directly upon his profession. He was one of the founders of the Zoological Society of Philadelphia, of which he was a director from 1880 to 1904; and he was chairman of the board of curators of the Academy of Natural Sciences of Philadelphia from 1891 to 1904. He was a member of the American Physiological Society and of the American Philosophical Society, and a fellow of the College of Physicians of Philadelphia. His interest in general literature led him to devote considerable time to the affairs of the Philadelphia Library, of which he was a director.

News Items.

A Systematic Effort to Exterminate Rats is to be made in all parts of the country, under the official sanction of the United States Department of Agriculture.

Changes of Address.—Dr. Maurice Packard, to 203 West Seventy-ninth Street, New York.

Dr. Mark Cohn has opened an office at 1312 Franklin Avenue, Borough of the Bronx, New York.

The Dispensary Evil is to be one of the subjects for discussion at the meeting of the Medical Society of the State of Pennsylvania, to be held in Philadelphia, September 27th to 30th. It is well known that many persons are treated in dispensaries who do not deserve free treatment. It is to be hoped that the Pennsylvania Society may discover a method to stop the practice.

Pellagra in Georgia.—It is reported that there are several well developed cases of pellagra in Macon, all the patients being white.

The Richmond, Va., Academy of Medicine and Surgery met in regular session on Tuesday, September 14th. The paper of the evening was read by Dr. E. H. Terrell on the Examination and Diagnosis of Diseases of the Anus and Rectum.

The Southside Virginia Medical Association, comprising the counties of Surry, Sussex, Dinwiddie, Brunswick, Greensville, Southampton, Prince George, and the city of Petersburg, held its twenty-sixth annual meeting in Petersburg on Tuesday, September 14th.

An Antituberculosis League in Charleston, S. C.—The colored people of Charleston have organized to help in the fight against tuberculosis in that city. The officers of the league for the first year are: President, Mr. Charles S. Harleston; vice-president, Dr. W. D. Crum; secretary, Dr. R. J. MacBeth; treasurer, Mr. L. J. Hollings.

The Wyoming State Medical Society held its annual convention in Cheyenne during the first week in September, and elected the following officers to serve for the ensuing year: President, Dr. N. D. Nelson, of Shoshoni; vice-president, Dr. C. E. McClallum, of Laramie, Dr. S. W. Johnson, of Newcastle, and Dr. J. J. Fosler, of Sheridan; treasurer, Dr. W. A. Wyman, of Cheyenne. Dr. W. H. Robinson, who was elected secretary last year, will serve in that capacity for four years more.

More Medical Officers Needed in the Army.—Only nine candidates are reported as having taken the examination held on September 2d to secure eligibles to fill vacancies in the grade of first lieutenant in the Medical Reserve Corps, and of these but one or two expressed a desire for active service. The number of names on the eligible list for appointments to the Medical Corps is now reduced to a very low point, and there seems no likelihood of securing a sufficient number to fill the vacancies in the corps.

Benefit for the German Hospital, Brooklyn.—The German Hospital Aid Society has made arrangements for a benefit in aid of the hospital to be given at the Majestic Theatre, November 8th, 9th, 10th, and 11th. It is said that the services of an English opera company have been secured for the entertainments. The money obtained through the benefit will be added to the fund for building an addition to the hospital, as the facilities of the hospital are inadequate to meet the increasing demands made upon it.

The Philadelphia Housing Commission was formed in Philadelphia, on Wednesday, September 8th, by representatives of seventeen sociological organizations. The object of the association is to provide sanitary tenements at moderate rents so as to do away with many unsanitary houses, which now are the only domiciles possible for a man of small income to obtain. The following officers were elected: President, Dr. Joseph S. Neff; vice-president, Mrs. Helen Parrish; secretary, Mr. G. A. Weber; treasurer, Mr. Max Herzberg.

Report of the Summer's Work of the Floating Hospital of St. John's Guild.—The Helen C. Juilliard, floating hospital of St. John's Guild, made its last trip on Saturday, September 4th. During the season she made forty-nine trips, on which 11,155 mothers, 18,510 children, and 9,385 babies were carried, making a total of 39,050. There were 176 surgical cases, 375 medical cases, and 4,152 dietary cases. There were 2,266 salt water baths for mothers, 7,040 salt water baths for children, 3,410 salt water baths for babies, and 543 medicated baths for babies.

A Large General Hospital to be Erected in Buenos Ayres.—Architects of all countries have been asked to submit plans for the Policlinic Jose de San Martin, which is to be erected in Buenos Ayres at a cost of about \$3,000,000. Three prizes have been offered, as follows: The winner of the first prize will be instructed to execute the plans and superintend the construction of the building; the winner of the second prize will receive \$10,000, and the third, \$5,000. The rules governing the contest are similar to those issued for a like purpose in this country. The competition closes at noon, December 10, 1909.

The Children's Hospital, of Philadelphia, has recently purchased a lot of land at Eighteenth and Fitzwater streets, Philadelphia. Plans are being prepared for a modern hospital building to be erected on the site, which, when completed, will be occupied by the institution. The old building on Twenty-second street, between Walnut and Locust streets, will be abandoned.

The Colorado Homeopathic Medical Society held its annual meeting in Denver last week and elected the following officers: President, Dr. S. S. Smythe, of Denver; first vice-president, Dr. Leonard Barts, of Windsor; second vice-president, Dr. George G. Lamb, of Colorado Springs; treasurer, Dr. J. B. Brown, of Denver, and secretary, Dr. C. M. Worth, of Denver.

The Floating Hospital of St. John's Guild, having ended its summer season, is to be used as a hospital ship during the Hudson-Fulton celebration. It will be moored at the north side of the wharf at the foot of West Ninety-seventh Street, and will be well equipped with medical and surgical appliances. The boat will be in charge of her regular doctors and nurses, assisted by some of the doctors and nurses from the Seaside Hospital of St. John's Guild, who have volunteered their services. It is said that this boat is the only one ready for emergency hospital service.

The Eighth District Branch of the Medical Society of the State of New York held its fourth annual meeting in Buffalo last week, and elected the following officers for the ensuing year: President, Dr. E. Munson, of Medina; vice-presidents, Dr. T. H. McKee, of Buffalo, and Dr. J. S. Wright, of Perry; secretary, Dr. C. S. Tompkins, of Buffalo; and treasurer, Dr. C. A. Wall, of Buffalo. The annual dinner of the society was held at the University Club on Tuesday evening, and among those who delivered addresses were the Reverend George B. Richards, rector of the Church of the Ascension, Judge Safford E. North, of Batavia, and Dr. Charles G. Stockton, of Buffalo.

A New Organization of Women Physicians.—A meeting of the women physicians of Wisconsin was held in Oshkosh recently and the Woman's Medical Society of Wisconsin was organized, with the following officers for the first year: President, Dr. Adeline Riddle, of Oshkosh; vice-president, Dr. Anna B. Corr, of Juneau; secretary, Dr. Minnie Hopkins, of Oconto; treasurer, Dr. Hannah M. Droppers; chairman of board of preventive medicine, Dr. Julia Riddle, of Oshkosh; board of censors, Dr. Belle Panter Nar, of Port Washington, and Dr. Ella Chaffee Fay, of Whitewater. The next annual meeting of the association will be held in Milwaukee in September, 1910.

The Medical Society of the Missouri Valley.—The twenty-second annual meeting of this society was held at Council Bluffs, Iowa, on September 9th and 10th, under the presidency of Dr. C. B. Hardin, of Kansas City, Mo. The programme was of unusual excellence, and the meeting was in every way very successful. The following officers were elected for the ensuing year: President, Dr. A. B. Somers, of Omaha, Neb.; first vice-president, Dr. C. R. Woodson, of St. Joseph, Mo.; second vice-president, Dr. Flavel B. Tiffany, of Kansas City, Mo.; secretary, Dr. Charles Wood Fassett, of St. Joseph, Mo.; reelected; treasurer, Dr. T. B. Lacey, of Council Bluffs, Iowa, reelected. Omaha, Neb., was selected as the place for holding the next semiannual meeting in March, 1910.

A Complimentary Luncheon to Dean Ward.—The faculty of the Medical Department of the University of Nebraska gave a luncheon on the evening of September 3d, in honor of Dr. Henry B. Ward, who has resigned as dean of the faculty to become dean of the medical faculty of the University of Illinois. At the close of the luncheon a gold watch was presented to Dr. Ward, the presentation speech being made by Dr. Harold Gifford, associate dean. Among those present were: Dr. W. F. Milroy, Dr. H. M. McClannahan, Dr. S. R. Towne, Dr. R. C. Moore, Dr. Palmer Findlay, Dr. Leroy Crummer, Dr. A. B. Somers, Dr. Alfred Schalek, Dr. R. W. Bliss, Dr. F. S. Owen, Dr. J. M. Akin, Dr. Thomas Truelsen, Dr. E. T. Manning, Dr. Robert Hollister, Dr. A. C. Stokes, Dr. A. Jefferson, Dr. C. W. Pollard, Dr. James S. Goetz, Dr. B. W. Christie and Dr. W. P. Wherry.

Society Meetings for the Coming Week:

MONDAY, September 20th.—Hartford, Conn., Medical Society.

TUESDAY, September 21st.—Buffalo Academy of Medicine (Section in Medicine); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine (annual); Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association; Medical Society of the County of Westchester, N. Y.

THURSDAY, September 23d.—Brooklyn Pathological Society; New York Celtic Medical Society.

FRIDAY, September 24th.—Academy of Pathological Science, New York; New York Society of German Physicians.

SATURDAY, September 25th.—West End Medical Society, New York.

Scientific Society Meetings in Philadelphia for the Week Ending September 25, 1909:

TUESDAY, September 21st.—Academy of National Sciences; North Branch, Philadelphia County Medical Society.

WEDNESDAY, September 22d.—Philadelphia County Medical Society.

THURSDAY, September 23d.—Pathological Society; American Entomological Society and the Entomological Section, Academy of National Sciences.

FRIDAY, September 24th.—Philadelphia Botanical Club; Lebanon Hospital Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of the new cases and deaths reported for the two weeks ending September 11, 1909:

	—September 4—		—September 11—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis, pulmonalis	536	142	429	158
Diphtheria	185	11	188	23
Measles	116	4	88	6
Scarlet fever	79	0	82	4
Smallpox	—	—	—	—
Varicella	10	—	11	—
Typhoid fever	181	11	285	25
Whooping cough	24	11	30	17
Cerebrospinal meningitis	6	8	7	5
Total	1,128	193	1,126	238

The Health of Pittsburgh.—The following cases of transmissible diseases were reported to the Department of Public Health, of Pittsburgh, during the three weeks ending September 4, 1909:

	August 21.		August 28.		September 4.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Chickenpox	0	0	1	0	7	0
Typhoid fever	25	2	23	3	23	3
Scarlet fever	8	0	8	0	11	0
Diphtheria	6	1	2	0	10	1
Measles	3	0	4	0	1	0
Whooping cough	9	2	10	0	6	1
Pulmonary tuberculosis	58	6	33	10	18	11

The total deaths for each week were 135, 141, and 128, respectively, in an estimated population of 572,000, corresponding to annual death rates of 12.27, 12.81, and 11.03 in a thousand for the three weeks.

The Ninth Annual Conference of Health Officers of New York State will be held in Rochester on November 10th, 11th, and 12th, in Convention Hall. A splendid programme has been arranged. Among those who have been invited to address the conference are: Dr. M. J. Rosenau, of the Harvard School of Sanitary Science; Dr. Charles O. Probst, of the Ohio State Board of Health; Professor Sedgwick, of the Massachusetts Institute of Technology; Dr. Marshall L. Price, of the Maryland State Board of Health; Surgeon General Wyman, of the United States Public Health and Marine Hospital Service; Passed Assistant Surgeon Lunden, of the United States Public Health and Marine Hospital Service; and Dr. Cressy L. Wilbur, chief statistician of the United States Census Bureau. The topics which these and other eminent speakers will discuss before the conference are essentially practical, and the addresses will usually be full of hints for the everyday use of health officers.

Open Air Class Rooms in New York.—If the necessary appropriation can be secured, the Board of Education of New York is planning to remodel twenty class rooms in different public school buildings into open air rooms, and equip them with special furniture. These rooms will be for the use of children who are anemic and have a tendency to tuberculosis, but those who already are afflicted with the disease will not be accepted. The Board of Education now furnishes teachers for classes of tuberculous children on the ferryboats *Southfield* and *Mid-dleton*, and is planning to supply teachers for the class on the roof of the Vanderbilt Clinic, for that to be maintained by Gouverneur and Beth Israel hospitals, and by the Greenwich Settlement House. The open air classes in schools will be an extension of this movement.

Gifts and Bequests to Charity.—By the will of Bridget O'Connor the Little Sisters of the Poor, and St. John's Orphan Asylum, of Philadelphia, receive \$500 each, and St. Vincent's Home, of Philadelphia, receives \$300.

By the will of Susan Hayhurst, the Woman's Hospital, Philadelphia, will receive \$17,000.

The receipts from the "Button Day" benefit for the tuberculosis pavilion of the Albany Central Federation of Labor, at Kenwood, amounted to over \$2,000.

The Health of Philadelphia.—During the week ending September 4, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 45 cases, 2 deaths; scarlet fever, 28 cases, 0 deaths; chickenpox, 6 cases, 0 deaths; diphtheria, 43 cases, 3 deaths; measles, 8 cases, 1 death; whooping cough, 23 cases, 3 deaths; tuberculosis of the lungs, 60 cases, 35 deaths; pneumonia, 8 cases, 18 deaths; erysipelas, 3 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 5 deaths; diarrhea and enteritis, under two years of age, 57 deaths. The total deaths numbered 372 in an estimated population of 1,505,569, corresponding to a annual death rate of 12.35 in a thousand population. The total infant mortality was 170; 90 under one year of age, and 20 between one and two years of age. There were 33 stillbirths—19 males and 14 females. There was no precipitation.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending September 4, 1909, there were 1,252 deaths from all causes reported to the department, 60 less than for the corresponding week in 1908. The annual death rate in a thousand population was 14.31 for the whole city, and for each of the five boroughs as follows: Manhattan, 14.24; the Bronx, 16.19; Brooklyn, 13.05; Queens, 17.68; Richmond, 22.08. The total infant mortality was 516; 347 under one year of age, 104 between one and two years of age, and 65 between two and five years of age. Of the total number of deaths of children under five years of age, 235 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 32; pulmonary tuberculosis, 142; diarrhoeal diseases, over five years of age, 239; organic heart diseases, 106; Bright's disease, 85; cancer, 59; pneumonia, 36; bronchopneumonia, 51; suicide, 17; homicide, 4; accidents, 81. There were 112 stillbirths. Nine hundred and four marriages, and 2,423 births were reported during the week.

The Health of Chicago.—During the week ending September 4, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 49 cases, 7 deaths; scarlet fever, 41 cases, 5 deaths; measles, 22 cases, 1 death; whooping cough, 50 cases, 3 deaths; tuberculosis, 61 cases, 68 deaths; pneumonia, 7 cases, 39 deaths; typhoid fever, 31 cases, 4 deaths; chickenpox, 2 cases, 0 deaths; erysipelas, 5 cases, 0 deaths. The deaths from other important causes were: Cancer, 21 deaths; nervous diseases, 8 deaths; heart diseases, 42 deaths; apoplexy, 4 deaths; Bright's disease, 44 deaths; diarrhoeal diseases, under two years of age, 164 deaths; diarrhoeal diseases, over two years of age, 22 deaths. There were 2 deaths from sunstroke, 11 suicides, 43 deaths due to accidents, and 1 death from manslaughter, making a total of 57 deaths by violence. The total number of deaths during the week was 616, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.44 in a thousand population. The infant mortality was 260; 197 under one year of age, and 63 between one and five years of age.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 2, 1909.

1. Surgery of the Stomach, By JOHN B. DEEVER.
2. On the Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or Are Above It, By E. A. CODMAN.
3. On the Presence of Tubercle Bacilli in the Blood in Tuberculosis, By M. A. DAILEY.
4. The Desirability of Further Extension of Undergraduate Nursing Service, By FRANK W. PATCH.
5. Results of Mayo's Modification of Gilliam's Operation for Shortening the Round Ligaments, By HAROLD W. BAKER.
6. Studies in Psychopathology, By BORIS SIDIS.

1. Surgery of the Stomach.—Deever sums up the present situation is gastric surgery as follows: The treatment of ulcer surgically is highly satisfactory, but not perfect in its results. With less danger in operating because of our present improved technique, excision or resection of gastric ulcer will probably become more frequent. Chronic dilatation of the stomach is curable by gastroenterostomy, whether the pylorus is patulous or not. Gastropyloritis does not respond to surgical treatment. Neuroses of the stomach are fit for surgical treatment only when their cause, being without the stomach, can be removed. Operations on the stomach for functional gastric conditions are always failures. Carcinoma of the stomach in many instances would be curable if diagnosis could be made early. Until our diagnosis is improved our results will continue to be poor. Unless we explore earlier and more often, and do not consider the responsibility of such procedure a grave one, we cannot hope to progress in the surgery of malignant growths of the stomach.

3. Tubercle Bacilli in the Blood in Tuberculosis.—Dailey says the only reliable test for demonstrating tubercle bacilli is animal inoculation and the production of the characteristic tuberculous lesions with the bacilli in them. This test applied to the blood of seventeen cases of milary and advanced tuberculosis failed in every instance to demonstrate tubercle bacilli. It is reasonable to conclude, therefore, that virulent tubercle bacilli are not ordinarily demonstrable in the circulating blood of tuberculous patients. Staining tests (on which Rosenberger bases his arguments and conclusions) are not reliable. The results he obtains may be explained in at least three ways: (a) As attenuated tubercle bacilli; (b) as artefacts; or (c) as acid fast bacilli of some sort introduced as a contamination in some one of the steps employed in staining, or deposited on the slide by the fingers in the process of cleaning or manipulation. The demonstration of tubercle bacilli in the blood by means of staining methods is wholly unreliable and hence of no clinical value.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 11, 1909.

1. Diagnosis of Otogenic Meningitis, By HOLGER MYGIND.
2. Disposal of Sputum, By WILLIAM J. MANNING.
3. Surgical Treatment of Certain Deformities of the Jaw Associated with Malocclusion of the Teeth, By W. WAYNE BABCOCK.
4. Infantile Eczema, By ISAAC A. ART.
5. The Serum Treatment of Epidemic Meningitis, By FRANK SPOONER CHURCHILL.

6. Hemolysis of Human and Rabbit Erythrocytes by Crotalus Venom.
By JOSEPH MCFARLAND and PAUL G. WESTON.
7. Some Points of Contact between Neurology and Orthopedic Surgery.
By JOEL E. GOLDTHWAIT.
8. Surgical Aspects of Cerebral Decompression. With Remarks on the Aetiology and Certain Manifestations of Papilloedema.
By CHARLES H. FRAZIER.

1. **Diagnosis of Otogenic Meningitis.**—Mingind remarks that the diagnosis of meningitis in cases of chronic or acute suppuration of the middle ear is often very difficult, for otogenic meningitis may simulate or may be simulated by "meningeal irritation" or "meningismus," without any organic disease of the brain, by pneumonia and other acute infectious diseases (typhoid fever, septicaemia, influenza, and malaria), tuberculous meningitis, and by other otogenic intracranial diseases. True meningitis differs from the series of symptoms called "meningeal irritation" or "meningismus," i. e., the well known meningeal symptoms often appearing in children and young persons during the course of an acute otitis media, inasmuch as meningitis generally appears some time after the onset of the ear disease, starts with great suddenness and intensity, may exist without symptoms of retention or of mastoiditis, runs its course with increasing rapidity and intensity of the symptoms, and does not occur in infants, in whom "meningeal irritation" often appears. Tuberculous meningitis differs from meningitis due to otitis, inasmuch as tuberculous meningitis generally is secondary to other tuberculous manifestations, begins with a preliminary stage, runs with less violent symptoms, and especially with a lower temperature, exhibits "focal" brain symptoms more frequently than otogenic meningitis, and is very rare in persons over the age of forty. Typical otogenic cerebral abscess differs from meningitis due to otitis in the following points: Cerebral abscess has a distinct prodromal stage, slower development of the symptoms; further, often exhibits "focal" symptoms, produces slow cerebration and slow pulse. All subjective and objective signs may, however, lead to a wrong diagnosis, excepting only turbidity of the cerebrospinal fluid emptied by lumbar puncture. In cases of meningitis of aural origin the cerebrospinal fluid is more or less opalescent in the first stage of the disease, becoming more and more milky in appearance, and at last puriform. Under the microscope numerous round cells are always found and nearly always an abundance of polynuclear leucocytes. Bacteria are generally present. Clear cerebrospinal fluid does not, however, with certainty exclude meningitis, as it always takes some time for the fluid to become opalescent. If in the first stage of meningitis the puncture yield a clear fluid, it is necessary to repeat it once or twice to be certain. In cases of tuberculous meningitis the cerebrospinal fluid is generally only slightly opaque, often containing small flocculi of fibrin. The cells are nearly all mononuclear, and bacteria are seldom found. Tubercle bacilli are sometimes present. The therapeutic value of lumbar puncture is in the author's opinion almost nil.

3. **Malocclusion of Teeth.**—Babcock says that by surgical measures it is possible (a) to change the relation between the body of the lower jaw and the

rami so as to produce protrusion, recession, tilting, or lateral displacement of the body of the jaw upon the ramus; (b) to change the shape of the arch of the jaw, either increasing or decreasing the size of the arch or altering its form; (c) to change the relative position of an anterior section of the jaw as related with a posterior section of the body and ramus; (d) to transplant and change the position of segments of the alveolus with contained teeth, the arch of the jaw not being completely divided, nutrition being maintained by the preservation of attachments to the soft tissues. When it is found by a study of models in the particular case that a correction of the deformity and a fair occlusion may be obtained without dividing the dental arch, the preferred operation is the section of one or both rami along the lines found to be best adapted to the particular case. This operation is useful for many cases of prognathism, receding chin, and certain lateral deviations of the jaw. In certain instances, as in hypoplasia, it may be necessary to combine with other operations designed to increase the size of the arch. Where it is desired to enlarge the dental arch he suggests the following method: A vertical section of the alveolus is carried two thirds of the way through the jaw, the line section is then carried at right angles for a variable distance, and the remaining third of the jaw then divided parallel to but in a different plane from the first vertical section. The arch is then to be opened by sliding the segments of the jaw on each other and fixation in the proper position secured by adjusting an appropriate interdental splint or other appliance which previously has been prepared. By doing this operation on the anterior part of the jaw the arch may be widened, and if placed laterally one or both sides of the arch may be lengthened. With a resection of the divided bone ends, this operation may likewise be used to reduce the arch at any point, or the arch may be reduced by a simple resection of a V shaped or wedge shaped section of bone as may be found desirable.

5. **Serum Treatment in Epidemic Meningitis.**—Churchill reports the effects of the serum treatment in forty-one cases of meningitis, twenty-nine of which have been proved to be of the meningococcic type. In these twenty-nine proved cases, sixteen patients have recovered and thirteen have died, a mortality of forty-four per cent. Closer analysis of the series shows that of sixteen patients receiving the serum within the first week, six, or thirty-seven per cent., died. Of these six cases, three were fulminating and the patients died within the first two days. Churchill concludes from his observations that a lumbar puncture should be done as early as possible in all cases clinically suggesting meningitis. If the fluid thus obtained is turbid, at least 30 c.c. of Flexner serum should be immediately injected directly into the spinal canal without waiting to hear the bacteriological report of the fluid. The spinal fluid should be examined bacteriologically. Smears are more important than cultures. If the *Diplococcus intracellularis* is found, the injections should be repeated daily for the three or four following days. In severe cases give the second dose twelve hours after the first. After the first series of doses there should be an interval of rest for two or three days, and if necessary the series

should be repeated. The serum is a specific and of value in meningococcic meningitis only.

6. Hæmolytic by Crotalus Venom.—McFarland and Weston state that crotalus venom is capable of hæmolyzing red corpuscles of both man and the rabbit in the presence of serum or of citrated plasma. When an excess of the venom, or an excess of the serum is present, hæmolytic diminishes. In the properly proportioned mixtures, hæmolytic takes place regardless of the extent to which the mixture may be diluted by the addition of salt solution. Defibrinated blood furnishes corpuscles more sensitive to the venom than citrated blood. Heating dry venom diminishes its hæmolytic activity for human corpuscles a little, for rabbit corpuscles a great deal. Heating solutions of venom diminishes its activity for human corpuscles a little, for rabbit corpuscles a great deal. Rabbit corpuscles are much more susceptible to the hæmolytic effect of the venom than human corpuscles. Corpuscles in suspension should not be kept from day to day for venom experiments. The small lymphocytes and eosinophiles resist the venom better than the large lymphocytes and polymorphonuclear neutrophiles.

MEDICAL RECORD

September 11, 1909.

1. The Role of Visual Function in Animal and Human Evolution, By GEORGE M. GOULD.
2. The Medical Management of Degenerate Children, By ROBERT H. PORTER.
3. Surgical Treatment of Diarrhoea. With a Description of a New Cæcostomy Which Permits Free Irrigation of Both the Small and Large Intestine, By SAMUEL GOODWIN GANT.
4. A Note on the Village Treatment of Nervous Invalids, By L. PIERCE CLARK.
5. The Liquor Problem; Some Suggestions for Its Solution, By CHARLES A. ROSENWASSER.
6. The Amount of Lung Involvement at the Onset of Pulmonary Tuberculosis, By HARRY LEE BARNES.

2. Medical Management of Degenerate Children.—Porter observes that most of the degenerate children, in addition to their mental deficiency, have physical signs of impairment known as the stigmata of degeneration. While each individual differs, more or less, in the morbid, as well as in the normal development, yet through this bondage of degeneracy they are related to one another to a certain degree, as they are not to the rest of the population. Now, this condition of degeneration is the effect of disease, and if, under the proper medical management, this diseased state could be removed, many of these children would be restored to the normal, others sufficiently improved to learn some useful vocation so as to prove self-sustaining, while some of the idiots could be benefited to such an extent as to learn to talk, walk, and be able to dress, feed, and take care of themselves. The best authorities agree that morbid heredity is generally the cause of mental deficiency. In other words, that a morbid inheritance is the cause of this form of degeneracy in most, if not all, cases. The writer, in the study of some of the other forms of degeneration, arrived at the conclusion that chronic toxæmia is the cause of the first departure of the individual from the normal, and from this chronic toxæmia the various forms of degeneracy may sooner or later develop. The chronic toxæmia may be either mental, chemical, or microbial in origin, or most prob-

ably one or more of these in combination with other morbid conditions and an unfavorable environment. While it is well known that a certain infectious fever is caused by a definite or specific germ, yet when the patient is carefully examined, he is found to be suffering from a mixed or multiple infection. So it will no doubt prove to be true that degeneracy is the effects of a chronic multiple infection. The toxæmia may remain latent for a long time, slowly impairing the nutrition and vitality of the brain and nervous system, with a marked tendency to the development of the neuropathic diathesis. And it is from this diathesis that the various nervous maladies may develop. Just what kind of nervous disease may develop from the diathesis depends largely on the life, habits, and environment of the individual. The condition of the patient will vary greatly according to the intensity of the toxic impressions, his vital resistance, and whether his environment, mode of life, etc., tend to increase or counteract the morbid tendencies; and also as to the part of the brain and nervous system most affected. No doubt, in many instances, the individual toxæmia serves only to start a neuropathic diathesis that may show itself in some mental or physical defect in the offspring. But a vicious and intemperate life, with excessive drinking, smoking, or any of the various drug habits, will very much intensify the degenerate tendency. If this deplorable state of mental deficiency is due to antecedent toxicogenic conditions the treatment should be accordingly. The patient is below normal in vitality and vital resistance, the temperature is often subnormal, the circulation poor, and the nutrition defective. Stimulating tonics, antiseptics, and eliminatives meet the general indications in many cases, but if there are complications of either epilepsy or mania with a tendency to violence and destructiveness, sedatives are needed. Many of the secretions of the body are antiseptic or germicidal in character, and when defective they can be stimulated by the proper chemical measures. It is the chemical correlation of the secretions of the various organs of the body that keeps up functional activity and at the same time maintains normal nutrition. In the defective child there is an arrest of development with perverted nutrition in one or more of the vital organs. The biologists tell us that by giving the extract of an organ, either by the mouth or hypodermically, as the case may require, not only the functional activity of the organ may be very much increased, but this will assist in building up the structures of the organ itself. This adds to the present resources the benefits of the whole field of organotherapy. Along this line of investigation the administration of the thyroid gland has been most studied and its effects are best known. And yet it is said that the chemical constituents of the gland will vary with the age of the animal and the season of the year when slaughtered, the winter killed containing the most iodine. Continued clinical study in the administration of the thyroid to defective children will be required to clear up some obscure points, for at the present time while some of these patients are very much benefited by it others are not, and in some cases the use of it is contraindicated. When properly studied other organic extracts will no doubt prove equally beneficial in many of these cases.

3. Surgical Treatment of Diarrhœa.—Gant describes his method of irrigating both the small and large intestine through the same openings in the cæcum. Through a two inch intermuscular incision made directly over the cæcum, it and the lowermost part of the ileum are withdrawn and the edges of the wound covered with sterile gauze handkerchiefs. The cæcum is scarified and clamped with rubber covered forceps to prevent soiling of the wound when the bowel is opened. Four linen or silk sero-muscular purse string sutures are inserted in the anterior wall of the cæcum at or outside the longitudinal band directly opposite the ileocaecal valve, when the bowel is quickly opened inside the suture line by using the knife for the outer coats and the scissors for the mucosa. The bowel is grasped at the junction of the large and small intestine and held in such a way that the ileocaecal valve rests between the thumb and fingers of the left hand. A Gant catheter guide is then introduced through the incision and carried directly across the cæcum, and then suddenly guided through the ileocaecal valve into the small intestine by the aid of the thumb and fingers, placed there for this purpose. The guide is then held by an assistant while the obturator is removed and a catheter, No. 12, is introduced into the small bowel. The guide is then removed and the catheter is held by an assistant until it has been anchored to the cæcum by a catgut suture to prevent its slipping out. A short piece of catheter, three inches long, is then introduced into the cæcum, beside the one which enters the small bowel, for an inch or more, when both catheters are fastened together by a narrow band of adhesive plaster placed around them, on a level with the skin. The clamp is now removed from the cæcum and the purse string sutures are tied; this inverts the edges of the bowel about the tubes, each stitch in its turn causing a still further circular infolding of the bowel, all together forming a cone shaped, valvular projection all around the catheters, which effectively prevents the escape of the fæces. The cæcum is scarified and anchored to the abdominal wall by through and through suspension sutures or by chromicized catgut stitches which include the peritonæum and fascia. The wound in the abdomen is closed by the layer method, after which the catheters are stitched to the skin or preferably retained in place by a narrow strip of adhesive plaster between them and attached to the skin. Ordinary, five cent cravat clamps are snapped over the ends of the catheters to prevent leakage, after which the operation is completed by applying the ordinary dry dressings, which are held in place by adhesive strips.

BRITISH MEDICAL JOURNAL.

August 28 1909.

Peripheral Circulation and Its Treatment.

By SIR JAMES BARR.

The Crescendo Murmur of Mitral Stenosis.

By E. M. BROCKBANK.

On the Cause of the Blood in Uræmia and Rheumatism.

By CHARLES J. MACALISTER.

On the Cause of the Blood in Uræmia and Rheumatism.

By F. E. WYNNE and F. P. STURM.

Achochroplasia Occurring in a Chinaman.

By GORDON MOIR.

A Case of "Lupus" of the Skin.

By G. M. McLEANS.

1. Peripheral Circulation and Its Treatment.

—Barr gives the anatomy, physiology, and histology of the arterioles, capillaries, and venules; speaks of the viscosity of the blood, the interchange of materials through the capillary walls; and then refers to the circulation of the liver, the splanchnic area, the arterioles and capillaries of the kidneys, skin, muscles, to the cerebral vessels, and finally to the coronary vessels. When we get complete vasomotor paralysis, as in severe shock, the greater part of the blood of the body may drain into the splanchnic area. From this there may be all degrees, down to a slight paresis. Witness the pale, pasty, flabby youths who are often treated for anæmia, but whose hæmoglobin is not deficient, and when they are laid flat the color of the face at once improves. These cases are more frequently young males than females, and in the majority of cases the paralytant is nicotine. There is occasionally a deficiency of lime salts and slight albuminuria. These cases are closely allied to orthostatic albuminuria, or the so called albuminuria of adolescence, where, in addition to cardiosplanchnic paresis there is always a deficiency of lime salts. When resting the patient should be quite horizontal, with a low head. When erect he should not stand or loll about, but take plenty of exercise and wear a tight abdominal belt. He should get the glycerophosphate or lactate of lime, and, when a purgative is required, magnesium sulphate. He should be on a liberal dry diet, consisting of beef, mutton, chicken or fish, vegetables, milk puddings, a little tea, coffee or buttermilk, little or no salt, and no acids. In all these cases tobacco and alcohol should be forbidden. In acute inflammatory disturbance of the kidneys the velocity in the capillaries is diminished and the lateral pressure relatively high; hence we get a concentrated filtrate. In healthy capillaries about a fourth, or less, of their pressure is transmitted directly to the surrounding tissues in which they are imbedded, but in the large congested, chocolate colored kidneys, when the capsule is stretched to its utmost capacity and the kidneys are nearly twice their normal weight, nearly the whole of the arterial and capillary pressure is transmitted and stops all secretion. The only salvation for such kidneys and their possessor is to freely incise the capsules and kidneys. When the tension is relieved the secretion at once starts. A similar condition is often seen in cases of adenitis. In acute tubular nephritis the lime salts are not, as a rule, excessive; hence, from this point of view, milk is admissible, and it has also the advantage of being poor in chlorides, but it is far too nitrogenous to be commended. He prefers fruit and carbohydrates on which the patient can subsist for a long time. Medicinally, the following drugs are useful: Antimony, the benzoates, the citrates, the acid tartrate of potassium, saline purgatives, hot air baths. The arterioles and capillaries of the skin offer an extensive area for the practice of the bath physician. A little washing does every one good, especially those who only take an annual tub. The nature of the bath depends on the objects which we want to accomplish. Heat relaxes and cold contracts the arterioles, effleurage causes dilatation, but pétrissage and tapotement rather contract the skin arterioles and dilate those

of the muscles. The light or hot air bath—if not overdone—followed by gentle massage and a cool douche, has often a very stimulating effect. The warm alkaline bath has a sedative, and the carbonic acid bath a stimulating, effect on the nerve endings. In the Nauheim bath the increased specific gravity has a primary effect of raising the peripheral resistance, which is afterward followed by reaction, and the effervescence has a stimulating effect, but it is a piece of absurd twaddle and unreasoning credulity to attribute any specific effects to the chloride of calcium; fortunately this salt is not absorbed, otherwise it might work irreparable mischief. Baths of all kinds are powerful agents for good or evil, and should be used with care and discrimination. In advanced arteriosclerotic changes they do good in great moderation, but it is extremely easy to work mischief.

6. A Case of "Dercum's Disease."—McMullan reports such a case and says that he has followed the recommendations of Dercum and others, and has been giving the patient thyreoidin, grains *v. t. id.*, and thus far, a period of scarcely two weeks, the result has been very satisfactory. The pains have almost disappeared, the numbness and tingling have been very much alleviated, and there is a distinct reduction in the size of the right arm of almost $\frac{1}{2}$ in. The patient herself states that she feels very much better, and can sleep and do a little work much better than she could for several months previously.

THE LANCET

August 28, 1909.

The *Lancet* for August 28, 1909, contains the Students Number, Session 1909 to 1910.

BERLINER KLINISCHE WOCHENSCHRIFT

July 19, 1909.

1. Tumors of the Frontal Lobes with Remarks Concerning Puncture of the Brain.
By MARLIN BECKHARDT and MORITZ BORNHARDT.
2. A Casuistic Contribution to the Diagnosis of Syphiloma of the Brain.
By FROTSCHER and BECKER.
3. The Theory of Nephritic Increase of the Blood Pressure.
By MARCUSE.
4. What does the Comparison of the Diastolic Blood Pressure Values Obtained by Different Methods Teach Us?
By B. ZABEL.
5. The Relation of the Syphilitic Reaction to the Antitryptic Power of the Human Blood.
By A. FÜRSTENBERG and JOHANNES TREBING.
6. A New Basis for the Treatment of Chronic Obstipation.
By LIPOWSKI.
7. Pharyngitis Exudativa Ulcerosa Meningococcica.
By F. REICHE.
8. Vaccine Therapy.
By REITER.
9. The Therapeutic Use of Antiformin.
By EDWIN KLEBS.
10. Tropical Hygiene.
By MÜLLERS.

3. Theory of Nephritic Increase of Blood Pressure.—Marcuse asserts that the renal inflammation causes an increased resistance to the blood current in both kidneys, in consequence of which a compensatory hyperæmia of the suprarenal capsules is produced through the inferior suprarenal artery which is a branch of the renal artery; we know that hyperæmia of an organ can bring about a hypertrophy of that organ and can assume naturally that a hyperæmia or hypertrophy of the suprarenal capsules increases their functional activity and results

in an increased amount of adrenalin in the blood. In this way the increased functional activity of the suprarenal capsules brings into causal connection general increase of blood pressure and hypertrophy of the left side of the heart.

4. Diastolic Blood Pressure.—Zabel says that our methods of determination of the diastolic pressure show us different functions of the blood pressure. There are two critical points. The first appears at the beginning of the greater oscillations and the fourth phase of Korotkoff. It corresponds to the first partial closure of the arterial walls and perhaps comes nearest in its valuation to the diastolic blood pressure. The second critical point appears at the beginning of the greatest oscillations, the third phase of Korotkoff, with the onset of Ehret's phenomenon. It corresponds to the first complete diastolic occlusion of the arteries and perhaps arises from a tension exceeding the diastolic pressure. The values shown by the different methods are not only dependent on the blood pressure, but may be influenced also by external factors. Yet in the same individual and under the same circumstances they may be accepted as relative measures of the height of the fluctuations of the diastolic pressure. Further diagnostic or clinical conclusions cannot yet be drawn from the discrepancies and the behavior of cases when the different methods are applied, but it cannot be denied that the comparison of the methods may be of use in this way.

6. Obstipation.—Lipowski recommends enmata of paraffin as preferable to treatment with oil, because, 1, it does not require the recumbent position for hours on the part of the patient; 2, it is perfectly unirritating to the intestinal mucous membrane so that almost without exception it may be retained through the night without trouble, and so may be given in the evening; 3, it does not decompose, so cannot irritate through results of decomposition; 4, it does not cause malodorous flatus; 5, its action is more prompt than that of oil; 6, it is perfectly nonirritating to the intestinal mucous membrane and is therefore well fitted for prolonged treatment.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 20, 1909.

1. Experimental Treatment of Paralytics with Arsenophenylglyzin.
By ALT.
2. The Behavior of Organic Preparations of Arsenic in the Human Body.
By FISCHER and HOPPE.
3. A Reaction in the Blood of the Mentally Diseased.
By FRÄNKEL, KATHE, and BIEROTTE.
4. Studies Concerning the Inhibition of the Cobra Hæmolysis by the Serum of Mentally and Bodily Diseased Patients.
By BEYER and WITTEBEN.
5. Biocystography.
By VON LICHTENBERG, DIETLEN, and RUNGE.
6. Transplantations of the Spleen.
By LÜDKE.
7. Pathology of Metabolism in Epilepsy.
By TINTMANN.
8. The Effective Substance in the Hypophysis.
By ALLERS.
9. Narcosis and Lecithin.
By NERKING.
10. A Contribution to the Question of Leuchæmia.
By PETERS.
11. What is to be Demanded Cosmetically of the Radical Operation for Chronic Middle Ear Suppuration.
By HEERMANN.
12. Ischaemia of the Congested Mucous Membrane of the Nose Produced by Periodical Application of Cold to the Nape of the Neck.
By MUCK.

13. Herniotomies and Other Abdominal Operations in Country Practice, By PAYSEN.
14. Herz's New, Simple Apparatus for Determination of the Blood Pressure, By KOLOMOITZEW.
15. Two Cases of Coal Gas Poisoning Considered Hygienically and Medicolegally, By FEDERSCHMIDT.
16. Treatment of Acute Coryza of Infants, By SCHULTZ.
17. Knee Pains in Hip Disease, By HÖTZEL.
18. The Practical Use of Wassermann's Reaction, By MUCH.

3. **Reaction in the Blood of the Mentally Diseased.**—Fränkel, Kathe, and Bierotte confirm the discovery of Much and Holzmänn that cobra hæmolysis is inhibited by serum from patients with mental diseases, but contradict their assertion that this inhibition is not met with in the serum from patients suffering from certain forms of mental disease, such as dementia præcox.

4. **Studies Concerning the Inhibition of Cobra Hæmolysis.**—Beyer and Wittneben go farther than Fränkel, Kathe, and Bierotte, and find that the serum of many patients with mental diseases inhibits the cobra hæmolysis of human red blood corpuscles. Likewise the serum of many suffering from physical disease and even of the healthy may produce the same effect, so that the reaction appears to be met with rarely in the healthy, more frequently in those with physical ailments, and most frequently in those with mental disease. They were unable to confirm the exclusion of certain diseases, such as dementia præcox, hence the reaction cannot be ascribed an importance in distinctive diagnosis. It seems to result from certain processes in the metabolism which may be present in the most various conditions.

5. **Biocystography.**—Von Lichtenberg, Dietlen, and Runge allege in regard to the contraction of the normal bladder that this consists of a continuous movement from all sides, slow at first and becoming more rapid toward the end of micturition. The contraction of the longitudinal fibres is more rapid and stronger than that of the circular fibres.

7. **Pathology of Metabolism in Epilepsy.**—Tintemann asserts that with every attack of epilepsy there is an absolute and relative increase of ammonia in the urine in the early stage which subsequently sinks to normal, and that a curve similar to the ammoniac curve shows the total acidity of the urine, a rapid increase at the beginning of the attack falling afterward slowly to normal.

9. **Narcosis and Lecithin.**—Nerking has performed many experiments on rats and rabbits to determine the effect of injections of lecithin upon narcosis produced in various ways. He injected an emulsion of lecithin varying in strength from one to ten per cent., sometimes into the veins, sometimes into the peritonæum, and sometimes subcutaneously, and then tested the action of ether, chloroform, morphine, morphine scopolamine, urethan, urethan chloral hydrate, novocain, novocain adrenalin, and stovaine, given by inhalation, subcutaneous injection, and lumbar injection. He finds that the lecithin shortens the duration of the narcosis, causes an earlier return of sensibility, and prevents bad after effects. As lecithin is not only harmless but exerts a positively good effect upon the entire organism he suggests that it be tried in man to prevent bad after effects and to shorten the duration of narcosis.

Proceedings of Societies.

NORTHWESTERN MEDICAL SOCIETY OF PHILADELPHIA.

Meeting of April 5, 1909.

The President, Dr. CLARENCE P. FRANKLIN, in the Chair.

The Modern Surgery of the Stomach.—Dr. JOHN B. DEEVER said: To-day the chief problems of surgery lie in a region which may be covered by the palm of the hand placed on the epigastrium. The surgery of the appendix, the Falloppian tubes, and the biliary apparatus has already been elucidated. The early operations for gastric ulcer and cancer have been amplified and improved because it has been shown that in these alterations of the stomach expectant methods assisted by drugs and hygiene fail to work a cure. Of all diseases of the stomach, ulcer is the most important; it is not so uniformly deadly as cancer, but it is vastly more common, and, besides, a large percentage of these cases result in malignant change. Including the duodenal ulcers, it may be said that one out of every twenty individuals has been at some time the subject of this affection. It is therefore evident either that the disease gives no symptoms in many cases or that they fail of recognition. It is repugnant to our ideas of an ulcerated process to suppose that it can exist without symptoms, and, in the presence of such a multitude of cases of indigestion, it would seem to be going rather far afield to ascribe these symptoms to undiscoverable causes and leave ulcer the symptomless wonder of the clinician. It is plain that the symptomatology of this condition must be enlarged, that we must not make the diagnosis dependent upon such conditions as pain of a certain type with nausea and vomiting, hæmatemesis, and melena. Inability to carve out a sufficiently definite symptom complex to render possible an early diagnosis should not lead to discouragement, but should be rather an incentive to greater effort. Ulcer is vastly more frequent than our diagnoses would indicate, and we must therefore be treating in a haphazard manner for dyspepsia many patients who are really suffering from ulcer, thus permitting a certain percentage to go on to perforation, hæmorrhage, or the callous stage.

Statistics show that recurrence takes place in nearly half the cases after "medical cures." The mortality of recognizable cases of gastric ulcer ranges from ten to fifty per cent., while in duodenal ulcers it is somewhat higher. It is plain, therefore, that in diagnosticable ulcer one should not temporize. The indication is rest for the part, and not only rest but a long rest. This factor removes most of these cases from the sphere of the medical man to that of the surgeon, as it is impossible to provide rest by medical means sufficiently long to permit of a cure in the majority of cases. The efficiency of gastric drainage has been amply demonstrated, and eminent surgeons are a unit as regards the remarkable results obtained in this way. The mortality of gastroenterostomy in the best hands is only from one to three per cent. and is constantly diminishing. The results of seven eminent surgeons in nearly a thousand cases show seventy-three to ninety-three

per cent. of cures, which is wonderful considering that only the most severe cases have been turned over to the surgeon. Gastroenterostomy therefore is the treatment of choice in simple, chronic, persistent ulcers of the stomach and duodenum.

The complications of ulcer are various and include perforation, which may be acute or chronic and lead to peritonitis, extensive adhesions, subphrenic or other form of abscess, and to hæmorrhage, which may be slight or even so severe as to be fatal from erosion of the coronary artery, conditions which call for immediate operation. Spontaneous cure brings with it special dangers. Cicatrization of an ulcer at the pylorus is a not infrequent cause of stenosis with subsequent gastric dilatation; in this latter condition tetany occasionally develops. These conditions are readily relieved by gastroenteroanastomosis.

In dealing with uncomplicated ulcer, where it is desirable simply to secure drainage, gastroenterostomy by the posterior loopless, or very short method, uniting the most dependent portion of the stomach with the jejunum at its origin behind the peritonæum has proved the best in my hands. I have not seen a case of vicious circle follow one of these operations. In regard to the direction of the incision in the stomach, I have usually inclined it slightly to the right from above downward, suturing the proximal portion of the jejunum to the upper angle, but have lately made the opening incline to the patient's left with equally good results. In cases of simple stenosis of the pylorus without dilatation pyloroplasty after the method of Finney is to be preferred, but gastrojejunostomy gives as good a functional result. If the stomach wall is greatly distended or hypertrophied, the latter operation is better. Caution in diet after the operation is advocated, because neglect of this defeats the object of procuring rest for the diseased area.

Nowhere do we see the need of a professor of practical medicine in our schools more than in connection with cancer. Cachexia, hæmatemesis, enlarged liver, and acidity are symptoms, not of cancer, but of approaching dissolution. The reason why carcinoma of the stomach is relatively so much more deadly than carcinoma of the lip or breast is simply that an early diagnosis by direct inspection and palpation cannot be made in cancer of the stomach without the formality of an operation. There is little use of the practitioner's bothering his head about a diagnosis if he insists on certainty. By the time he is certain of his diagnosis he is also certain of the prognosis. Therefore I am inclined to say that a positive diagnosis is a disgrace to the physician in attendance, provided he has been following the case for some weeks or months. The latest device which has been invented to defer an operation until it is too late is gastric analysis. I have had for some years routine examinations of the stomach contents made in all cases of upper abdominal disease in which the stomach may be affected, including disease of the gallbladder, but disappointment has been so frequent and great that I have come to place no reliance on the method. The last fifty examinations subsequently controlled by operation show that anacidity is not infrequent in diseases other than that of the stomach; that in early car-

cinoma the acidity is but slightly altered; that in late, inoperable carcinoma but slightly subnormal acidity may occur; that anacidity has almost invariably gone hand in hand with an extensive inoperable growth; that blood indicates ulceration, which does not occur in the early stages; and that the Oppler-Boas bacillus occurs only in the late stages of cancer and may be found in conditions of stasis from benign causes. The x ray gives no aid of any moment. Where surgery will do the most the x ray will do the least.

The patient, approaching or past middle life, who either suddenly or on top of previous gastric disturbances finds that his digestion is rapidly getting worse, has little inclination to eat some articles of food, oftenest meat; feels a certain languor and lack of vigor; has eructations of gas, regurgitation, and a slight feeling of discomfort in the epigastrium or left hypochondrium; and begins to lose weight in the absence of a very definite cause outside of the stomach, should have his stomach inspected directly. This will at times be needless, but in a large percentage of these cases we shall find early neoplasm curable by extirpation.

The ideal treatment for cancer is complete excision. In the majority of cases it is located in the pyloric region, and by a fortunate arrangement of the lymphatics does not tend to spread to the fundus, but the glands of the lesser curvature and the adjacent gastrohepatic and gastrocolic omentum are early involved. A wide excision embracing these structures gives hope of circumventing the disease in the early stages. My method is essentially the Billroth No. 2, which consists in removal of that part of the stomach lying between the first portion of the duodenum and the Mikulicz-Hartmann line, which is an imaginary perpendicular drop from the cardiac orifice to the greater curvature. The cut ends of the stomach and duodenum are closed and posterior gastroenterostomy done in the usual manner. Complete gastrectomy is rarely indicated. The surgical treatment of advanced carcinoma, in which it is hopeless to get beyond the growth, is a very unsatisfactory part of surgery. The most frequent call for palliative operations comes from pyloric stenosis, with retention. In such cases gastroenterostomy often gives marked temporary relief and adds about three months to the expectation of life. In obstruction of the cardiac orifice death from starvation may be prevented by gastrostomy, which is, however, not indicated so long as the patient can swallow liquids. In the future I hope there will be fewer explorations in cases with a positive diagnosis to see whether something can be done, a hope practically always illusory, and more explorations in suspicious cases while there is yet a chance of cure.

It is necessary to have constantly in mind those minor and functional disorders of the stomach in which ill advised operations can hardly be expected to result otherwise than in failure. Such cases may be hard to distinguish, but the patients usually show other neurotic stigmata and are very susceptible to any change in treatment and to any hopeful suggestion.

Gastropotosis is usually associated with general splanchnoptosis, and an operation on any one of the displaced viscera promises little. I am not inclined

to recommend an operation in cases of ptosis, and certainly not until the effect of a properly fitting abdominal supporter and general medical treatment is tried. In gastrectasia, in the presence of a patulous pylorus, an operation may be serviceable and give truly brilliant results, but in such cases medical treatment should be given a thorough trial before an operation is done. The best operation is posterior gastroenterostomy done at the most dependent part of the stomach. I have never seen a case of acute dilatation of the stomach and have come to the conclusion that the reason for this is the early and free use of the stomach tube in all cases that show accumulation of fluid or gas in the stomach.

The chief point to emphasize, however, still is that we must not allow the frequency of minor and functional disorders to divert our attention from the common occurrence and serious nature of ulcer and cancer. Ten years ago gastric surgery was far behind diagnosis. To-day it is just as far ahead, and we wait, perhaps impatiently, for the internist to come abreast.

Modern Methods of Diagnosis and Treatment of Diseases of the Stomach.—**DR. JOHN H. MUSSER** said: Our modern methods, both in diagnosis and in treatment, are born of a truer conception of the physiology and pathology of gastric disorders than of any special methods that have arisen in the determination of gastric disease. The diagnosis of gastric affections must be based upon our conception of subjective conditions, such as pain, the careful analysis and study of which helps us immensely in determining the nature of the morbid process or of a functional disorder. It is a most important matter to weigh just as carefully subjective as objective phenomena. The various methods of diagnosis are those that have been employed for long periods of time, and some of them have stood us in good stead, while others have not, unfortunately, brought about the satisfactory results that we had hoped for. We get most valuable data by physical examination. Of the aids in physical diagnosis which we now employ, inflation of the stomach and the use of the stomach tube and x ray to determine the size and position of the organ furnish the most reliable data in the determination of the nature of the disease. As to inflation, I must give a word of caution. In very thin subjects, in whom the antero-posterior diameter of the abdomen is not very great, the stomach has no room to be a deep seated organ in a deep vertical extent, and hence must spread out over a very large surface, so that we are often led astray in thinking we have to do with a grave dilatation of the stomach in thin subjects when such is not the case. The anatomical state of the individual must be considered when reckoning the size of an organ as determined by physical methods of examination. In the laboratory studies which I carry on in the investigation of disease I have got down to only a few that are really of practical value. The total acidity, the amount of hydrochloric acid, the amount of combined acids, the presence or absence of lactic acid, and, of great importance to the functional power of the stomach, the amount of pepsin secretion, are those which we can rely upon. We learn also very much by a gross inspection of the meal removed, as to the quantity, the presence or

absence of mucus, and the odor. The salol and the potassium iodide tests for absorption have not made good.

Many methods have been employed to determine the motor power of the stomach, and I have concluded fully that it is just as satisfactory to wash the fasting stomach two hours after food has been taken as to employ any other method. Notwithstanding the use of all these methods, we must be brought face to face from time to time with the question of an exploratory operation, and, while we can with confidence ask many surgeons to explore, yet we must feel that that is a serious step to take. Even, however, with this as a resort we go very little into the diagnosis of the true nature of gastric disorders if we confine ourselves to simply a study of the function and the organic change of the stomach itself. The crux of the whole situation is not the study of this one simple organ itself, but it is the study of the individual, and unless we study carefully the nervous system, the cardiovascular system, the renal secretion, and the eliminations and size up our patient after a general survey of the individual, we shall go far afield in many instances.

The essential methods of treatment are those which are truly physiological and are based on dietetic and hygienic management rather than upon any other form of management that we can trust in. There have been some few new drugs added to those which have been employed in days gone by, but they do not stand the test of time. The simple drugs and those which can be divided into two groups are all that are required in the management of stomach diseases. On the one hand, we find that we must use a group of drugs that may be called sedatives and antacids, and on the other hand we must use a group of drugs which are called stimulants. Indeed, these two words apply even to diet. In selecting a dietary for individuals we just pick out either one line of foods that are soothing or sedative and calmative to gastric function, or another line that are stimulant, and by keeping in mind these lines we are pretty sure to arrange satisfactorily a scheme that is going to bring about a cure. The sedative and antacid procedures are those which we use in hyperchlorhydria, excess of acidity, etc., and the two other groups we use in motor insufficiency.

The group of drugs in the first instance comprises bismuth, cerium oxalate, belladonna, and opium. We need not go very far, and, adding magnesia or soda or some antacid, we complete the list; and if there is fermentation present, we add some one or two simple antifermentatives, such as resorcin, creosote, and charcoal.

If, on the other hand, we want stimulation, we use nux vomica, strychnine, or some remedy of that kind, or perhaps we are called upon under these circumstances to use a few remedies that are antifermentative. There are some who think they have to use ferments, but I find it is not necessary to use these remedies. They have to be given in such enormous doses that it is almost impossible for the patient to take them. I cure more patients with gastric disorder with iron than I do with anything else.

DR. JUDSON DALAND said that, so far as the diagnosis of gastric disease was concerned, it seemed to him that most of the important points in diag-

nosis were to be considered as modern. Some were more recent than others, and the one instrument most important in this direction was the stomach tube. The obtaining of gastric secretion for diagnostic purposes was sometimes difficult so far as obtaining the consent of the patient was concerned. Therefore it was a matter of some little practical importance that this procedure be carried out with as little discomfort as possible. To carry out his diagnostic work he used a vacuum bottle, so that the moment the tube engaged in the contents sufficient gastric juice for an examination would be obtained. If one had any difficulty he could put positive pressure on the jar and in this way overcome any obstruction. He attached considerable importance to the character of the test meal. It should be larger, at least the whites of three eggs and three pieces of toast, thoroughly chewed, and five or six ounces of oatmeal. This should be taken at breakfast and removed an hour afterward. It was a mistake to wait more than an hour after the breakfast. The amount of material withdrawn at the expiration of the hour should be very small. The question of pepsin was usually a negligible one. In most cases there was a sufficient amount; one rarely saw a diminution of pepsin. Hydrochloric acid was not present in gastric carcinoma. If hydrochloric acid was in excess, very rarely was gastric carcinoma present. The question of motility was important. It was important to diagnosticate if possible all cases of stagnation or retention that existed for a period of eight hours. Often the simple test of gastric splash would serve. Say the meal was taken at 1 and at 7 o'clock; the gastric splash is searched for, making sure the patient had taken no water. It indicated the presence of liquid and air. Sometimes there might be liquid and no air, and no splash would occur. Next was the determination of motility by the introduction of the stomach tube and removal of the stomach contents at a period when there should be none. It demonstrated that the stomach did not empty itself at the proper time. The use of the x ray was an absolutely modern method. He did not agree with Dr. Deaver that it was absolutely of no use in gastric carcinoma. Although at the present time gastric carcinoma could not be diagnosticated absolutely with it, there were certain conditions and findings that pointed strongly toward the probable existence of gastric carcinoma. These cases made one more suspicious and anxious to do exploratory operations. Next was the filling of the stomach with air in order to determine gastric dilatation. In the old days of Flint they employed the ordinary Seidlitz powder, and there had been cases of death from this cause. No doubt these cases were due to great overdistention. By using bismuth and any liquid one could see the stomach fill out with air by the fluoroscope, and thus we had an easy method of producing gastric dilatation at will.

The symptoms that had been mentioned were only reflex, often toxic, and had nothing to do with the stomach as an organ whatsoever, and they might be chronic and still not the slightest suspicion of gastric ulcer or carcinoma be entertained. Therefore we must go very slowly along in recommending prompt surgical procedures.

There was a group of cases which we overlooked very frequently; they were those chronic latent ulcers which masqueraded as acute ulcers. One saw the patient for the first time and did not get a full history. It was believed to be an acute gastric ulcer. The patient was put under treatment and symptomatically recovered. He got so much better that everybody was satisfied. He was told that it would return, and after considerable difficulty an operation was done and a chronic ulcer found. The patient was entirely divorced of symptoms and had gained in weight. This was the reason why so many of this class of cases gave all the features of chronic gastric ulcer, with induration which persisted without symptoms in the interval, but they were the cases that built up gastric carcinoma.

Dr. FRANK HAMMOND asked Dr. Deaver whether in operating on the lower abdomen he made it a regular rule to operate on gastropstosis if that condition was present.

Dr. W. WAYNE BABCOCK agreed most heartily with all that Dr. Deaver had said regarding carcinoma. It was a curable disease in a certain percentage of cases, perhaps more so than cancer of the cervix. In regard to gastric ulcer, he wished that his opinion was as fixed as that of Dr. Deaver. He had personally become less sure that we were curing the patient by surgical measures alone in certain types. Where there were ulcers producing mechanical symptoms, where the pylorus was entirely occluded and the patient suffered only from obstructive symptoms, gastroenterostomy gave the patient a condition which was practically curative. If these ulcers were acute or sclerotic, with no occlusion and with the pylorus unobstructed, he was not sure that gastroenterostomy invariably completely relieved the symptoms. Experimentally and as the result of operations, we had reason to think that the food passed out after gastroenterostomy as before. In some patients very satisfactory results followed an operation, and later there was return of the old symptoms, the signs of indigestion and discomfort. In these cases there was every reason to believe that the openings were just as patent, that the ulcer continued. Were these operations curative because they drained the stomach or permitted bile and alkaline secretion to enter it? Were we curing the patient by mechanical measures, or were we curing him by introducing from the intestinal tract alkalies which reduced the acidity? The mortality after operations for gastric ulcer was at present very low. The immediate results were quite good. But there was a certain amount of morbidity in these forms of gastric ulcer which should be worked out further.

Dr. MUSSER wished to call attention to one omission he had made in respect to the study of the gastric contents and the stools. That was, the determination of the presence or absence of blood, gross or occult.

Dr. DEAVER: I am very glad to have heard the discussion of my friend Dr. Daland. I can endorse all Dr. Musser has said. I subject the patient to all these ordeals. The good that comes to those patients who have lesions is practically nil. The cases which have gone the rounds are cases for operation, that is, for exploratory operation. With Dr. Musser I agree that we should be a little careful about who

operates. The temptation is to operate. I have done many operations in the past that I am ashamed of to-day, and I think every surgeon who tells the truth will say the same thing.

Dr. Daland had a good many "ifs" and "ands" in his discussion. He did not hit the bull's eye on any occasion. I am quite convinced that in his x ray work he will continue to miss the target. I don't wish to disparage the x ray. The cases diagnosed by the x ray are not cases for operation by the surgeon. I do not believe the x ray can show incipient carcinoma. In some border line cases Dr. Musser and Dr. Daland have agreed that diagnosis is impossible in a certain percentage of instances. If a patient's life is studied and he does not improve after systematic and physiological treatment for three months, then the empirical treatment should cease. Operating for neuroses of the stomach has reflected great discredit on the surgeon.

In regard to Dr. Hammond's question, I never operate on a prolapsed stomach. As I stated in the paper, in case of prolapsed viscera, in the presence of great dilatation and stagnation of food, I have seen good results from posterior gastroenterostomy.

As a surgeon I have more trouble to keep from operating upon people than in operating. I refuse to operate upon nearly as many patients as I operate upon. I say no and they go elsewhere. I do not say they are operated upon elsewhere. The public want to be educated. The family will ask for an operation and the physician will hang on and give opium until the patient is rotten with pus. We swim in pus every afternoon at the German Hospital.

Surgical Pathology: Its Scope and Teaching. Dr. H. S. WIEDER: Surgical pathology is the pathology of those conditions directly amenable to surgical treatment and investigation, which can be studied in the living individual. By delegating this special work to men who are still in active surgical practice and who should be thoroughly acquainted with all the clinical aspects of the cases studied, practical benefits can be derived which could not be attained by the pathologist without surgical training or the surgeon without advanced pathological training and much time to devote to the subject. The student is taught to study symptoms from the standpoint of the disease, and not the disease from the standpoint of the symptoms. He is shown the mechanism of the production of symptoms from derangements of physiology caused by diseased conditions of the organs.

Dr. BARCOCK: Dr. Wieder has called our attention to the very important subject of correlation of subjects taught in medical colleges. It is not long since each department in a college considered itself very distinct from every other department, and as a result the surgeon looked upon the pathologist as being the repository of science and of a greater or higher philosophy of medical knowledge. He looked upon the pathologist as the man to settle his diagnosis and often to make the diagnosis, but he soon found that diagnoses were not made in the laboratory; at least they were only partially made there, and the laboratory was only the handmaid to the clinical and to the art of surgery. So it has come about that we find clinical, surgical, and gynecological pathology brought hand in hand, and the

man who does surgical work or medical work studies the pathological conditions which he sees and which he handles at the time of operation or at the time of the clinic, and in this way he acquires a broader and better knowledge and is better able to diagnose and treat diseases. Moreover, surgical pathology is beginning to show that the disease that we wish to understand is the disease going on in the body and which has not reached its final issue. The tendency has been and still is to speak of post mortem changes as indicating the final conditions which are to be treated. Even recently it has been asserted that certain operations cannot be done for tuberculosis, for example, tuberculosis of the lung; that these conditions are so widespread and severe in type that there would be no hope of removing them by operation. This means that the pathologist has found terminal lesions which have caused death. If this same reasoning were brought into play for other conditions, the same conclusion might be adopted. It is only by observing these conditions during life, at the early stage of their existence, that we find out what we can do. The pathologist who draws conclusions from post mortem, or terminal, conditions often draws very false conclusions. The pathologist who has clinical training is able much better to evolve methods of treatment and do that which is of great service to humanity.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Sprachstörungen und Sprachheilkunde. Beiträge zur Kenntnis der Physiologie, Pathologie und Therapie der Sprache. Unter Mitwirkung von E. BLOCH, Freiburg i. B.; BOODSTEIN, Elberfeld; M. BRESSEN, Wiesbaden; BRÜHL, Berlin; PANCONELLI-CALZIA, Marburg; F. FRENZL, Stolp; H. KNOPF, Frankfurt a. M.; O. LAUBI, Zürich; E. MASCHKE, Berlin; HUDSON MACKUEN, Philadelphia; A. MIELECKE, Spandau; NADOLECZNY, München; OECONOMAKIS, Athen; W. OLTUSZEWSKI, Warschau; II. PIPER, Daldorf; GEORGES ROUMA, Brüssel; A. v. SARBO, Budapest; K. L. SCHAEFFER, Berlin; H. SÖDER, Hamburg; S. STERN, Wien; E. STÖTZNER, Dresden; E. WINCKLER, Bremen; H. ZWAARDEMAKER, Utrecht. Herausgegeben von Dr. med. H. GUTZMANN, Privatdozent an der Universität Berlin. Mit 15 Abbildungen im Text und einem Porträt. Berlin: S. Karger, 1908. Pp. 189.

The book is dedicated to Albert Gutzmann on his seventieth birthday, December 19, 1907, and is edited by his son Hermann. The septuagenarian has been foremost in Germany for over thirty years in the study of the physiology, pathology, and therapeutics of speech, and many physicians and teachers have been his pupils; he is also the editor of the *Medizinische pädagogische Monatsschrift für Sprachheilkunde*, and has been since its first appearance. The book contains twenty-three essays, among them one by Dr. Hudson Mackuen, of Philadelphia, on the Speech of the Feeble Minded. Our space is too limited to review these essays in detail, but we wish to call attention to the twentieth paper, entitled *Bibliographia phonetica*, by Dr. Panconelli-Calzia, of Marburg, which gives a list of the works pertaining to this branch of medicine published in

1907, with a review of their contents; and the twenty-first essay, which gives a list of the works on speech, impediment of speech, and teaching of speech in feeble minded children.

Das Koma diabetikum und seine Behandlung. Von Dr. A. MAGNUS-LEVY, Berlin. Halle a. S.: Carl Marhold, 1909. Pp. 54.

In this brochure the grave condition of diabetic coma is fully discussed by one of the foremost modern writers on diseases of metabolism. Magnus-Levy accepts with some reservations the theory of acidosis as promulgated by Naunyn and Stadelmann. He points out wherein it is inadequate, but admits that upon the whole it provides the best working hypothesis for further advances. The alkaline treatment is adequately described, and in the more important prophylactic measures details of diet and the necessity of a liberal allowance of carbohydrate food, when coma threatens, are duly insisted upon.

Das Indikationsgebiet des Alkohols bei der Behandlung innerer Krankheiten. Von Professor Dr. GEORG ROSENFELD, Breslau. Halle a. S.: Carl Marhold, 1908. Pp. 48.

The value of alcohol in either health or disease is at present seriously doubted by more thoughtful physicians than at any time in the past. The spirit of moderation and scientific candor which marks this presentation of the subject by Professor Rosenfeld will certainly tend to restrict within very narrow limits the field of alcohol in therapeutics. The best consensus appears to be that alcohol lessens the powers of resistance to acute infectious diseases, that even its moderate use has an unfavorable effect upon the heart and kidneys, that catarrhal conditions of the stomach and bowels are produced by it, that the effect on functional and organic diseases of the nervous system is uniformly harmful, and that it is a potent factor in the production of such constitutional diseases as arteriosclerosis, gout, and obesity. On the other hand, it certainly has a limited food value; in wasting diseases it may spare tissue catabolism, and in diabetes it to some extent takes the place of the carbohydrates. The most serious indictment lies in the fact that hardly a week passes in which every practising physician does not see numerous examples of persons wrecked in health, happiness, and fortune through the abuse of alcohol. Who can say that he has ever seen any one injured by leaving it alone?

Die Stirnhöhle. Beiträge zur topographisch-chirurgischen Anatomie und zur Lehre von den Erkrankungen der Stirnhöhle. Von Professor Dr. A. ONODI. Mit 107 Abbildungen nach photographischen Aufnahmen in natürlicher Grösse. Wien und Leipzig: Alfred Holder, 1909. Pp. 83. (Price, Mk. 6.80.)

Onodi's latest contribution gives in a comparatively small compass the results of an enormous amount of work in investigation, measurement, transillumination, and radiography of a large series of normal and diseased sinuses. He discusses the anthropology, development, size, topography, and variations of this important accessory cavity and the diagnostic value of transillumination and the x ray. The last is an important aid in determining the presence and extent of the sinus preparatory to the external operation, but cannot be relied on to give any definite information as to the condition of the cavity or the presence of pus.

The Elements of Hygiene for Schools. Compiled by ISABEL McISAAC, Late Superintendent of the Illinois Training School for Nurses, etc. New York: The Macmillan Company, 1909. Pp. xii-172. (Price, \$.60.)

Miss McIsaac has condensed—partly only, for very often the pages are reprints—her book on *Hygiene for Nurses* (reviewed in our issue of January 2, 1909). She states in her preface that it has been her aim to present the subject of hygiene in such a way that it may be of practical every day use to the large number of pupils who may have no further opportunity for study of the subject. And she has well succeeded in her undertaking. The book will be of help not only to students, but also to teachers, and we can well recommend it. It gives a clear view of the subject, which is in every respect well handled.

Die Tetanie der Kinder. Von Prof. Dr. THEODOR ESCHERICH, Vorstand der k. k. Universitäts-Kinderklinik in Wien. Mit 15 Abbildungen und 2 Tafeln. Wien und Leipzig: Alfred Holder, 1909. Pp. ix-268. (Price, Mk. 7.20.)

In this elaborate monograph the entire subject of tetany in infancy and childhood is exhaustively treated. Since the early work of Trousseau, Chrostek, Erb, and Hofmann, whose studies have made the clinical picture a sufficiently familiar one, there has been in recent years much careful research in the aetiology and pathology which is not yet included in the textbooks on neurology and pædiatrics. It has now been pretty conclusively demonstrated by Erdheim, Yourse, and others that tetany is due to insufficiency of the parathyreoid bodies, the usual lesions being hæmorrhages, infectious emboli, and more rarely tuberculosis, cysts, and connective tissue changes. Eclampsia and laryngeal spasm in infancy may be due to tetany. In older children tetany is not infrequently associated with the infectious diseases, nephritis, lesions of the central nervous system, and chronic digestive disturbances. There are adequate chapters on the diagnosis and treatment of this somewhat rare and obscure disease, which appears to be more frequently seen in Europe than in this country.

Pratique de la chirurgie antiseptique. Leçons professées à l'Hôtel-Dieu par le docteur J. LUCAS-CHAMPIONNIÈRE. Paris: G. Steinheil, 1909. Pp. 464.

In this volume the author has collected a mass of valuable data concerning antiseptics and their application in surgery. Emphasis is laid on the idea that the antiseptic method in surgery does not involve solely the suppression of germs, but that a large number of clinical factors must be carefully studied in order to attain the best results. The book should prove of value to surgeons who desire to perfect themselves in the application of correct principles of antiseptics.

MEDICOLITERARY NOTES.

Little Dramas in the House of Pain is the title of some supposed reminiscences of a trained nurse in the *New York Herald* for September 5th. It is narrated how the nurses of a certain ward, horrified at the impatient, curt, and brutal examination of a patient by the attending surgeon, who diagnosed appendicular disease and gave a hopeless prognosis, banded together to save the "pain racked body in which was an anxious soul." Lovers of fiction,

ignorant of hospital method and routine, will be glad to learn that the inhuman surgeon was disappointed in his forecast and that the nurses saved the patient by clever team play. "Dr. A. could never understand it. We did not attempt to explain it." Is it possible that from the nurse's viewpoint doctors have too much to say about the treatment of patients?

In the Wireless Room, by Arthur Stringer, in the *Saturday Evening Post*, for August 28th, affords the novel nosological information that dengue is "a mild yellow fever, usually ambulant." The very name of the disease is derived from the supersensitiveness of the patient, who dreads being moved.

A visiting foreign surgeon is said to have criticized both our surgeons and their wealthy patients for a proneness to exploratory laparotomy before exhausting the physical signs in making a diagnosis and prognosis. We hope our surgeons will not be deterred by any foreign criticism from their reverent revival of the ancient art of the haruspex.

Another Way, by Robert Russell, in the October *Cosmopolitan*, shows the deficiencies of the Code of Medical Ethics, which, like all moral codes, including the Decalogue, can provide only general principles for our guidance. Every physician must occasionally find himself in the grip of circumstances which disclose no precedent for his subsequent action, which he must decide upon for himself and upon purely personal grounds. In the tale under consideration Dr. Jarvis seems to have done the correct thing.

In the *Sun* for September 5th, H. P., who professes to be a professional writer (of fiction?) tells how he learned to love Dickens. As boys, he and his brother took turns at sawing wood, while the one temporarily free read aloud all the novels of the distinguished romancer. One is at a loss which to admire most, the remarkable sense of hearing of the wood sawyer or the penetrating voice of the reader.

In the September issue of the *World's Work*, which is a valuable publication to the practitioner too busy to read attentively the ordinary daily, is an interesting article, Curing by Suggestion, by Dr. Frederik Van Eeden. In it the writer takes the ground that quackery is the fault of the science of medicine, as heresy is the fault of the Church; he thinks there would be no quacks if the regulars did their full duty in examining into all therapeutic methods. Every path along which passes the *vis medicatrix Naturæ* is worthy of thorough scientific exploration. The Emmanuel movement would be superfluous if science were all it ought to be.

An anonymous contribution to the same number, The Swindling Promoter at Work, deserves the attention of the physician, who is considered by all fakirs to be the easiest of "marks," surpassing even the clergyman.

Sir Arthur Conan Doyle, in the September *Strand*, returns to an early love, the prize ring, and gives a spirited account of a semiprofessional battle in The Lord of Falconbridge. Two articles will interest oculists, How the World Looks to the Short-sighted, by Constance Clyde, and A New Illusion, by James Fraser, a deputy medical superintendent

of the General London Sick Asylum. Whether we are more reverent than the English, which Andrew Lang has strenuously denied, may or may not be decided by the fact that Hall Caine's latest novel, which is being concluded in the *Strand*, is called therein *The White Christ*, whereas the American edition in book form bears the title *The White Prophet*.

NEW PUBLICATIONS.

Evans, David James.—*Obstetrics.* A Manual for Students and Practitioners. Second Edition, Revised and Enlarged. Illustrated with One Hundred and Seventy-two Engravings. Philadelphia and New York: Lea & Febiger, 1909. Pp. 440.

Simon, W., and Base, Daniel.—*Manual of Chemistry.* A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Textbook Specially Adapted for Students of Medicine, Pharmacy, and Dentistry. Ninth Edition, Thoroughly Revised. With Seventy-eight Illustrations, One Colored Spectra Plate, and Eight Colored Plates Representing Sixty-Four Chemical Reactions. Philadelphia and New York: Lea & Febiger, 1909. Pp. xvii-716.

Philadelphia General Hospital Reports. Volume VII, 1908. Edited by Herman B. Allyn, M. D. Pp. xii-272.

Boruttau, H., and Mann, L.—*Handbuch der gesamten medizinischen Anwendungen der Elektrizität einschliesslich der Röntgenlehre.* In drei Bänden bearbeitet von Privatdozent Dr. F. Battelli, Professor Dr. J. Bergonici, etc. Mit herausgeber für den Röntgenband, Prof. Dr. M. M. Levy-Dorn und Prof. Dr. med. P. Krause. Band I. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. xvi-599.

Kleist, Karl.—*Weitere Untersuchungen an Geisteskranken mit psychomotorischen Störungen.* Die hyperkinetischen Erscheinungen. Die Denkstörungen, hypochondrischen und affektiven Störungen bei akinetischen und hyperkinetischen Kranken. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. ix-309.

Simpson, W. J.—*Report on Plague in the Gold Coast in 1908.* London: J. & A. Churchill, 1909. Pp. 55.

Newell, A. G.—*Blackwater Fever (Bilious Malignant Tertian Ague).* London: John Bale, Sons, & Danielsson, Ltd., 1909. Pp. viii-126.

Emery, W. d'Este.—*Immunity and Specific Therapy.* With Illustrations. New York: Paul B. Hoeber, 1909. Pp. xiv-448.

Balfour, Andrew, and Archibald, R. G.—*Review of Some of the Recent Advances in Tropical Medicine, Hygiene, and Tropical Veterinary Science, with Special Reference to Their Possible Bearing on Medical, Sanitary, and Veterinary Work in the Anglo-Egyptian Sudan.* Being a Supplement of the Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. London: Baillière, Tindall, & Cox; New York: Toga Publishing Company, 1908. Pp. 251.

Abbott, A. C.—*The Principles of Bacteriology.* A Practical Manual for Students and Physicians. Eighth Edition, Thoroughly Revised. With One Hundred Illustrations, Twenty-six of Which are Colored. Philadelphia and New York: Lea & Febiger, 1909. Pp. xi-631.

Augustin, George.—*History of Yellow Fever.* New Orleans: Searcy & Pfaff, Ltd., 1909. P. 1104. (Price, \$6.)

Gatewood, James Duncan.—*Naval Hygiene.* Prepared by Direction of the Bureau of Medicine and Surgery and Published by Permission of the Navy Department. With Eight Colored Plates and One Hundred and Five Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xiv-779. (Price, \$6.)

Balfour, Andrew.—*Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum.* Published for the Department of Education, Sudan Government. London: Baillière, Tindall, & Cox, 1908. (Through Toga Publishing Company, New York.) Pp. 477.

Calkins, Cary N.—*Protozoology.* Illustrated with 125 Engravings and 4 Colored Plates. New York and Philadelphia: Lea & Febiger, 1909. Pp. ix-349.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York, 1907-1908. By Professor Edwin O. Jordan, Professor James Ewing, Professor David L. Edsall, Professor Ernest H. Starling, Professor George

Crile, Professor Joseph Jastrow, Professor Otto Folin, Professor Ross G. Harrison, Professor E. A. Schäfer, and Professor Alonzo E. Taylor. Philadelphia and London: J. B. Lippincott Company, 1900. Pp. 266.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending September 10, 1900:

Places.	Date.	Cases, Deaths.
<i>Smallpox—United States.</i>		
Iowa—Cedar Rapids.....	Aug. 1-31.....	1
Louisiana—New Orleans.....	Aug. 1-1-28.....	1
Minnesota—Duluth.....	Aug. 2-2-27.....	1
Montana—Butte.....	Aug. 12-26.....	6
Ohio—Dayton.....	Aug. 21-28.....	7
Ohio—Tulio.....	July 31-Aug. 7.....	1
Oregon (4 counties).....	May 1-31.....	31
Utah (11 counties).....	July 1-31.....	110

<i>Smallpox—Foreign.</i>		
Algeria—Bona.....	July 1-31.....	19
Brazil—Pernambuco.....	June 1-15.....	10
Brazil—Rio de Janeiro.....	July 1-15.....	3
Ceylon—Colombo.....	May 8-13.....	1
China—Yunnan.....	June 26-Aug. 7.....	Present
China—Tientsin.....	June 26-July 3.....	1
Egypt—Cairo.....	July 10-20.....	1
India—Bombay.....	July 20-Aug. 3.....	1
India—Madras.....	July 1-15.....	1
India—Rangoon.....	July 17-24.....	3
Italy—Genoa.....	Aug. 1-15.....	1
Italy—Naples.....	Aug. 8-15.....	22
Italy—Bari.....	Aug. 1-15.....	1
Mexico—Chihuahua.....	Aug. 15-22.....	1
Mexico—Guadalajara.....	Aug. 15-22.....	2
Mexico—Veracruz.....	Aug. 12-19.....	1
Perth—Shiraz.....	June 2-15.....	Present
Russia—Moscow.....	Aug. 7-14.....	8
Russia—Odessa.....	Aug. 1-15.....	2
Russia—Riga.....	Aug. 7-14.....	1
Russia—St. Petersburg.....	July 24-Aug. 8.....	28
Russia—Warsaw.....	June 19-July 3.....	1
Spain—Barcelona.....	Aug. 9-21.....	1
Spain—Valencia.....	July 31-Aug. 14.....	7
Spain—Vigo.....	Aug. 7-14.....	1
Tripoli—Tripoli.....	Aug. 1-15.....	8

<i>Yellow Fever—Foreign.</i>		
Venezuela—Maiquetia.....	Aug. 14-21.....	1
<i>Cholera—Insular.</i>		
Philippine Islands—Manila.....	July 10-17.....	1
Philippine Islands—Provinces.....	July 3-10.....	850

<i>Cholera—Foreign.</i>		
China—Hankow.....	July 10-17.....	1
India—Bombay.....	July 20-Aug. 3.....	37
India—Calcutta.....	July 18-24.....	17
India—China—Saigon.....	July 19-17.....	1
Russia—General.....	Aug. 13-20.....	289
Russia—St. Petersburg.....	Aug. 13-20.....	201

<i>Plague—Foreign.</i>		
Chile—Iquique.....	July 28.....	1
China—Hongkong.....	July 10-24.....	1
India—Bombay.....	July 20-Aug. 3.....	33
India—Calcutta.....	July 17-24.....	17
India—China—Saigon.....	July 10-17.....	16
Peru—General.....	Aug. 21-Aug. 7.....	21
Peru—Callao.....	Aug. 4-7.....	1
Russia—Ural District.....	Aug. 5-13.....	19
Venezuela—Caracas.....	Aug. 7-16.....	4

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 8, 1900:

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Granted thirteen days' leave of absence from August 17, 1900, on account of sickness.

CARLTON, C. G., Pharmacist. Granted thirty days' extension of annual leave, on account of sickness, from July 5, 1900.

CURRIE, D. H., Passed Assistant Surgeon. Granted twenty-one days' leave of absence en route to station.

DEERHAKE, Wm. A., Acting Assistant Surgeon. Granted one day's leave of absence in August, 1900, under paragraph 210, Service Regulations.

DE VALIN, HUGH, Assistant Surgeon. Granted three days' leave of absence en route to station.

EAGER, J. M., Surgeon. Granted one day's leave of absence, September 7, 1900.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted seven days' leave of absence from October 4, 1900.

KENNEDY, S. R. M., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 1, 1900.

KING, W. W., Passed Assistant Surgeon. Granted thirty days' leave of absence from September 8, 1900.

LYON, R. H., Assistant Surgeon. Granted one day's leave of absence in August, 1900, under paragraph 191, Service Regulations.

MACCAFFRY, W. B., Acting Assistant Surgeon. Granted two days' leave of absence in August, 1900, under paragraph 210, Service Regulations.

MASON, Wm. C., Acting Assistant Surgeon. Granted six days' leave of absence from September 19, 1900.

MORRIS, G. A., Pharmacist. Granted three days' leave of absence from August 30, 1900.

ONUF, B., Acting Assistant Surgeon. Granted one day's leave of absence, August 14, 1900, under paragraph 210, Service Regulations.

SIMONSON, G. T., Acting Assistant Surgeon. Granted two days' leave of absence from September 7, 1900.

TUTTLE, JAY, Acting Assistant Surgeon. Granted thirty days' leave of absence from September 14, 1900.

Resignation.

Surgeon Milton J. Rosenau, resignation accepted by the President, to take effect January 31, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 11, 1900:

ARCHER, WILLIAM M., Jr., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, about September 8, 1900.

BAILEY, HOWARD H., Captain, Medical Corps. Detailed as a judge in the intercompany competition in the application of first aid to the injured, October 2, 1900, at Wilkesbarre, Pa.

BASTION, JOSEPH E., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort D. A. Russell, Wyoming, and ordered to report on October 1, 1900, to Colonel Valery Havard, President, Army Medical School, for a course of instruction.

CHITTICK, ARCHIBALD G., First Lieutenant, Medical Corps, Indiana National Guard. Ordered to report on October 1, 1900, to Colonel Valery Havard, President, Army Medical School, for a course of instruction in that school.

FISK, OWEN C., First Lieutenant, Medical Reserve Corps. Granted fifteen days' leave of absence.

FULLER, LEIGH A., Major, Medical Corps. Having arrived at San Francisco, Cal., will proceed to Fort Adams, R. I., for duty.

GILCHRIST, HARRY L., Major, Medical Corps. Ordered to proceed from Fort Omaha, Neb., to Fort Meade, South Dakota, for temporary duty.

GUITTARD, ALWIN M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Logan, Col., and ordered to sail from San Francisco, Cal., on the transport sailing for Manila, P. I., about November 5, 1900, for duty in the Philippines Division.

HEATH, GEORGE D., Jr., First Lieutenant, Medical Corps. Relieved from duty at the Army General Hospital, San Francisco, Cal., and ordered to Fort Logan, Col., for duty.

HOGG, CASSIUS C., Lieutenant Colonel, Medical Corps, Virginia National Guard. Ordered to report on October 1, 1900, to Colonel Valery Havard, President, Army Medical School, for a course of instruction in that school.

HULL, ALVA R., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Logan, Col., at the expiration of his leave of absence and ordered to report to the Commanding General, Department of Texas, for duty in that department.

KNOX, HOWARD A., First Lieutenant, Medical Reserve Corps. Granted leave of absence for ten days to take effect about September 20, 1909.

LYNCH, CHARLES, Major, Medical Corps. Detailed as a judge in the intercompany competition in the application of first aid to the injured, October 2, 1909, at Wilkes-Barre, Pa.

MCMASTER, JOHN G., First Lieutenant, Medical Corps, South Carolina National Guard. Ordered to report on October 1, 1909, to Colonel Valery Havard, President, Army Medical School, for a course of instruction in that school.

MORSE, ARTHUR W., Major, Medical Corps. Granted thirty days' leave of absence.

PILLSBURY, HENRY C., First Lieutenant, Medical Corps. Relieved from duty as surgeon of the transport *Logan*, and ordered to the United States, with permission to return by the eastern route.

RAYMOND, THOMAS U., Major, Medical Corps. Granted leave of absence for twenty-five days about September 1, 1909.

REYNOLDS, CHARLES R., Major, Medical Corps. Detailed as a judge in the intercompany competition in the application of first aid to the injured, October 2, 1909, at Wilkes-Barre, Pa.

SCHMITTER, FERDINAND, First Lieutenant, Medical Corps. Relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Logan, Col., for duty.

SHEPARD, JOHN L., Captain, Medical Corps. Relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Logan, Col., for duty.

STANLEY, J. M., First Lieutenant, Mississippi National Guard. Ordered to report on October 1, 1909, to Colonel Valery Havard, President, Army Medical School, for a course of instruction in that school.

TRUBY, ALBERT E., Major, Medical Corps. Relieved from duty as commanding officer, Company A, Hospital Corps, and ordered to proceed to San Francisco in time to take the transport sailing for Manila, P. I., about November 5, 1909, for duty in the Philippines Division.

The following named first lieutenants of the Medical Reserve Corps have been ordered to report on October 1st to Colonel Valery Havard, President, Army Medical School, for a course of instruction in that school: James K. Ashburn, John A. Burket, Charles C. Demmer, Owen C. Fisk, George B. Foster, Jr.; James S. Fox, James C. Haley, Thomas H. Johnson, Glenn T. Jones, Charles T. King, Condon C. McCormack, Edward L. Napier, Thomas C. Austin.

The following named medical officers have been promoted from the grade of first lieutenant to captain in the Medical Corps, to rank from June 30, 1909: Henry J. Nichols, Louis H. Hanson, Lucius E. Hopwood, Charles E. Freeman, Ferdinand Schmitter, Henry B. McIntyre.

The following named physicians have been appointed first lieutenants in the Medical Reserve Corps, with rank from September 1, 1909: Alexander T. Cooper, Ernest R. Gentry, John T. Aydelotte, Edward D. Kremers, Ralph G. DeVoe, William P. Lamb, Solomon P. Klotz, William H. Allen, Delos E. Cornwall, Taylor E. Darby, Henry C. Michie, Jr.; Roy C. Heelebower, Thomas L. Ferenbaugh, Royal Reynolds, Joseph Casper, Adam E. Schlanser, Larry B. McAfee, Julian M. Gillespie, Henry Beeuwkes, Harry P. Shugerman, William B. Carr, Carl E. Holmberg, George M. Edwards, Mark D. Weed, Charles W. Haverkamp, Floyd Kramer, Harry R. Beery, Arthur O. Davis, William L. Sheepe, Albert S. Bowen, Thomas D. Woodson, Felix R. Hill, Webb E. Cooper, William C. Davis, William H. Thearle, Edward M. Welles, Jr.; Harry B. Etter, Everett S. McClelland.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 11, 1909:

CRANDALL, R. P., Surgeon. Detached from the *Georgia* and ordered home to await orders.

HOYT, R. E., Passed Assistant Surgeon. Discharged from treatment at the Naval Hospital, Mare Island, California, and ordered to duty at that Hospital.

HULL, H. F., Passed Assistant Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the *Des Moines*.

MORRIS, L., Surgeon. Ordered to the *Georgia*.

RAISON, T. W., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, California, and directed to await orders.

SMITH, C. G., Surgeon. Ordered to duty at the Naval Hospital, Newport, R. I.

TOLFREE, H. M., Passed Assistant Surgeon. Detached from the *Des Moines* and ordered home to await orders.

Births, Marriages, and Deaths.

Born.

CULLER.—In Fort Ontario, New York, on Monday, July 12th, to Captain Robert M. Culler, Medical Corps, United States Army, and Mrs. Culler, a son.

Married.

CALVERLY—TAYLOR.—In York, Pennsylvania, on Monday, September 6th, the Rev. Edwin Elliott Calverly and Dr. Eleanor Jane Taylor.

CRANE—HAUER.—In Irvington, New Jersey, on Wednesday, September 1st, Dr. J. Wellington Crane and Miss Carrie Hauer.

RICH—MCKEE.—In Philadelphia, on Saturday, September 11th, Dr. Edward Y. Rich, of Bristol, Pa., and Miss Ella C. McKee.

ROBERTS—ALLEN.—In Camden, New Jersey, on Thursday, September 2d, Dr. Joseph E. Roberts, Jr., and Miss Ethel Alma Allen.

WILSON—WYVILLE.—In New York, on Tuesday, August 24th, Dr. E. P. Wilson, of Columbia, South Carolina, and Miss Ella M. Wyville, of Walbrook, Maryland.

Died.

ADAMS.—In Jersey City, New Jersey, on Wednesday, September 8th, Dr. Hugh T. Adams, aged sixty-three years.

ANGELL.—In Atlanta, Illinois, on Sunday, August 29th, Dr. George Manton Angell, aged eighty-eight years.

BOULLEE.—In New York, on Wednesday, September 8th, Dr. J. C. Boulee, aged fifty-seven years.

BURNET.—In Newark, New Jersey, on Tuesday, September 7th, Dr. James Brown Burnet, aged sixty-six years.

CAFFEY.—In Westfield, Massachusetts, on Thursday, September 2d, Dr. William F. Caffrey, aged thirty-five years.

CHAPMAN.—In Bar Harbor, Maine, on Tuesday, September 7th, Dr. Henry Cadwalader Chapman, aged sixty-four years.

CURTIS.—In Round Lake, New York, on Tuesday, September 7th, Dr. Pierson C. Curtis.

DRAWBAUGH.—In Shiremanstown, Pennsylvania, on Saturday, September 4th, Dr. J. H. Drawbaugh.

GAUNT.—In Burlington, New Jersey, on Friday, September 3d, Dr. F. Allen Gaunt, aged fifty-one years.

GLENN.—In Philadelphia, on Wednesday, September 2d, Dr. Nicholas T. Glenn, aged twenty-five years.

HAMILTON.—In Columbus, Ohio, on Thursday, September 2d, Dr. Homer M. Hamilton, aged thirty-nine years.

HAND.—In Cape May, New Jersey, on Wednesday, September 8th, Dr. John H. Hand, of Dias Creek, aged sixty-five years.

HELLER.—In Philadelphia, on Sunday, September 5th, Dr. George C. Heller.

HERBERT.—In Washington, D. C., on Sunday, September 5th, Dr. James W. Herbert, aged fifty-nine years.

LINES.—In Brooklyn, N. Y., on Saturday, September 11th, Dr. Amelia Wilkes Lines, aged eighty-six years.

MITCHELL.—In Clarksville, Arkansas, on Saturday, September 11th, Dr. J. W. Mitchell.

MUNGER.—In Eureka Springs, Arkansas, on Saturday, September 4th, Dr. G. D. Munger, of Oklahoma City, Oklahoma.

PAINE.—In Youngstown, Ohio, on Wednesday, September 1st, Dr. Oliver Dwight Paine, aged ninety years.

PARKER.—In Hollywood, California, on Wednesday, September 1st, Dr. A. A. Parker.

SHERIDAN.—In Johnstown, Pennsylvania, on Thursday, September 2d, Dr. John C. Sheridan, aged fifty-six years.

STANTON.—In Milford, Delaware, on Saturday, September 4th, Dr. James Stanton.

STREET.—In Suffield, Connecticut, on Friday, August 27th, Dr. Philo W. Street, aged forty-four years.

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WHOLE NO. 1608.

Original Communications.

ABRUS PRECATORIUS IN EPITHELIOMA.

By J. V. SHOEMAKER, M. D., LL. D.,
Philadelphia.

Professor of Materia Medica, Therapeutics, Clinical Medicine, and
Diseases of the Skin in the Medicochirurgical College
and Hospital.

Epithelioma involving the forehead, as in the case that I now report, is not as frequent as upon other portions of the face. It began as a typical growth characterized by ulceration and infiltration.

CASE.—The patient, J. K., was a woman aged thirty-nine years; nativity, U. S. A.

Family history: Her mother was sixty-three years old, living and well. Her father died at thirty-nine from bronchitis. Her grandparents all died of old age. She stated that there was never a hereditary disease in her family.

Previous personal history: As a child she suffered from the ordinary diseases of childhood, but since then she always enjoyed good health.

Social history: She was married and was the mother of two children, a boy and a girl, all living and apparently in good health.

Habits: Her habits were good, drank coffee moderately and was a total abstainer from tea and alcoholic beverages.

Present illness: The patient stated that ten years ago she observed a small pimple on her forehead. She neglected this small elevation owing to the fact that she thought it would heal shortly and disappear. It was very small, and she did not experience any pain whatever. As time went on it slowly increased in size and by spreading peripherally it attained the size of a quarter. After a time it became fissured, was covered with exuberant granulations, and there issued from it an offensive smelling liquid secretion. The pain grew severe, extending over the entire frontal region. She then consulted a doctor and was treated with the x rays until she was admitted to the hospital.

Diagnosis: The diagnosis of this case was based upon the history of the onset and duration. It began as a small pimple which gradually increased in size, became painful, ulcerated, which was followed by a scanty, blood streaked, viscid secretion. The ulcer to-day is surrounded by a zone of infiltration. The patient was rather young, but in exceptional cases we find epithelioma in cases even much younger than this patient. This form of cancer is more common in men than in women and is more frequently met with on the face and in the genital region. The different forms of epithelioma may involve almost any part of the body.

Differential diagnosis: Great care should be taken in diagnosing an epithelioma, since it may be confounded with the lesions of syphilis, lupus vulgaris, ordinary wart, condylomata, and seborrhœa sicca. The diagnosis is easy in the advanced stage, but in some cases it is very difficult to decide whether a wartlike growth is the initial lesion, epithelioma, or an ordinary wart. As a rule warts which

develop in patients who are over thirty years of age are suspicious and should be removed.

The following tables show the differential diagnosis:

Epithelioma (papule).

1. No history of infection.
2. Progress slow.
3. Lancing pain.
4. *Epitheliomatous ulcer.*
 1. Lesion single.
 2. Secretion is blood streaked.
3. Surrounded by a well marked zone of infiltration.
4. Long duration.
5. Yields only to destruction.

Epithelioma (papillary).

1. Lesion painful.
2. Lesions usually single.
3. No history of infection.
4. No concomitant signs.
5. Occurs in advanced age.

Epithelioma.

1. Develops in middle and advanced life.
2. Lesions single.
3. Course more rapid.
4. Ulcer deep.
5. Lancing pain.
6. Secretion blood streaked and viscid.
7. Edges and base hard, characteristic pearly border.

Syphilis (hard chancre).

1. History of infection.
2. Evolution rapid.
3. No pain.
4. *Tertiary syphilitic ulcer.*
 1. Lesions multiple.
 2. Secretion is fetid, yellow, and abundant.
 3. Zone of infiltration is either absent or insignificant.
 4. Short duration.
 5. Heals under the use of the iodides and mercury.

Condylomata.

1. Lesion not painful.
2. Lesions usually multiple.
3. History of infection.
4. Concomitant signs of syphilis.
5. Usually occurs in youth and middle age.

Lupus vulgaris.

1. Develops usually before puberty.
2. Lesions multiple.
3. Course slow.
4. Ulcer superficial.
5. Pain absent.
6. Secretion abundant, yellow, and puriform.
7. Edges and base soft.

Pathology: Microscopically the process consists of a proliferation of epithelial cells growing downward into the corium of the interpapillary projections of the rete mucosum. The downward growth and continuous multiplication of the epithelial cells forms an unusual length of the interpapillary processes, which project down into the corium like the fingers of a glove. These fingerlike processes continue to multiply and increase in size. Then they divide into branches, which unite with one another to form a framework of epithelial tissue. The cells of which they are composed become pressed together and form onion like bodies, the so called cell nests or globes. In other instances they form clubshaped masses. This rapid cell growth requires increased nutrition, hence the bloodvessels become enlarged; wandering cells and lymphoid corpuscles fill up the lymphoid spaces, and the skin becomes infiltrated with serum. Finally the pressure of the cell masses gives rise to irritation and inflammation.

The second stage of the disease is marked by degeneration and ulceration. When the ulceration advances rapidly and extends to the deeper tissues, the neighboring lymphatics soon become affected, and through them the involvement of the entire system takes place. However, when the ulceration is superficial, the patient's health is not much affected. Muscular tissue and parenchymatous organs un-

dergo fatty degeneration, and the composition of the blood is altered, followed by a production of toxic products in the tissues. The albumin is increased irrespective of the nature and amount of the food consumed, and there is a decrease in the alkalinity of the blood. This is followed by an excessive formation of urea, which nevertheless is imperfectly eliminated and some cases have been reported in which the excretion of urea had entirely ceased.

Uranalysis of the patient showed: Color, light amber; sediment, flocculent; specific gravity, 1.024; odor, aromatic; reaction, acid; albumin, negative; glucose, negative; casts, negative; cylindroids, few; leucocytes, few; pus cells, few; epithelial cells, few; urates, moderate.

Blood examination: Erythrocytes, 4,248,000; leucocytes, 8,742; hæmoglobin, 73 per cent.

Ætiology: The ætiology of this affection is obscure. The disease is brought about in some cases from long continued pressure or other mechanical

The diet should consist of good nutritious food, eggs, plenty of milk, and cooked vegetables of all kinds. It is often better to allow meat only in small quantities.

Next in importance to the diet in epithelioma should be the constitutional treatment. Among the many remedies that will act upon the secretions, the blood, and the skin cells are the preparations of iron, manganese, sulphur, iodine, arsenic, and cod liver oil. In employing one or the other of these hæmatics, or blood tonics, as well as alteratives, the secretions, blood, and tissues are modified or changed to give better digestion, assimilation, and nutrition to the general system, and the tissues involved are thus enabled to take upon themselves some reparative action.

At times arsenic, given as the trioxide in from 1-50 to 1-20 of a grain, alone or combined with sulphur or calcium sulphide, may accomplish the best results. Arsenic sulphide and iodide are valuable preparations. In other instances iron, alone or combined with manganese and arsenic (as iron arsenate) has systematically the most happy results as well as the most powerful local action in altering the intense malignant action of the skin cells. Mercury, iodine, and cod liver oil are in some cases remarkably efficacious, given either combined or alone, to tone up the system and modify the local destructive action of the tissues. For this patient I ordered the following combination for its systemic action:

R	Strychnine sulphatis	.....	gr. 3ss.
	Liquor acidæ arsenosæ	.....	℥ss.
	Acidi hydrochlorici diluti	.....	℥ss.
	Glyceriti pepsini, q. s.	ad.	℥ss.

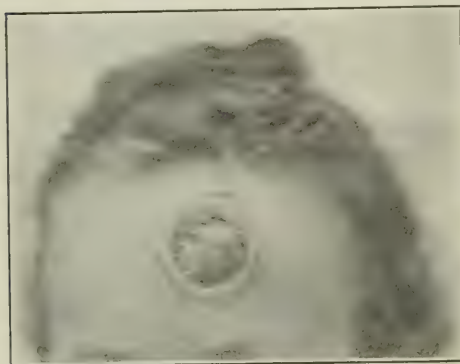
Misce. Sig.: Two teaspoonfuls in a little water after each meal.

In addition to the necessary constitutional treatment just enumerated, local remedies are also imperative in each and every case: First, for the purpose of removing all malignant cells and tissues, and secondly, for the antiseptic action upon the diseased structures.

We will thoroughly curette the involved parts to remove the diseased tissues. Then we will apply the abrus or jequirity bean made into an emulsion by macerating the bean deprived of its rind in cold water and trituration. This emulsion will destroy all of the diseased tissues not removed by the curette. After a sufficient length of time, the wound is cleansed twice daily with a solution of bichloride and the cavity is filled with very finely powdered red cinchona bark, which is one of the best stimulating, astringent, and antiseptic powders that can be employed in the healing of a cavity produced by a superficial epithelioma.

The abrus precatorius bean belongs to the leguminous family, and is a native of India, but also grows in other tropical countries. It is small, nearly round, of a bright red color, with a black spot at the hilum. The poisonous constituents are a globulin and an albumose, the action of which closely resembles that of toxins of bacterial origin. No alkaloid is present in the bean.

The therapeutic action of abrus is that of a strong eschrotic, and it is often used with beneficial results in the treatment of trachoma, chronic metritis,



Epithelioma involving the forehead

irritation. Any locally irritated tissue may be the starting point.

Many theories have been advanced to explain the cause of this growth, but none have as yet been positively established. In a majority of cases it is attributed to irritation either by contact with paraffin or by the irritation of soot in the folds of the scrotum thus producing chimney sweeper's cancer. Epithelioma of the tongue and lip has been produced by the irritation of a short clay pipe or a broken tooth. Epithelioma has also occurred where there was no irritation. Old scars and preexisting warts, nævi, and sebaceous cysts frequently undergo degeneration without an apparent cause and become the seat of an epithelioma. As a rule this affection is not inherited, but in some families there is a predisposition to cancer. A theory has been advanced that cancer is of parasitic origin, and cases have been reported where the disease has been transmitted from one individual to another, and some experiments have demonstrated that cancer may at least be transmitted from one animal to another of the same species. Epithelioma occurs in middle life, and more frequently in men than in women.

Treatment: The treatment in all of these cases should be dietetic as well as constitutional and local.

and chronic suppurative otitis. Either the powdered drug may be applied by means of a camel's hair brush, or an infusion may be made by triturating three seeds in a mortar with an ounce of cold water, to which is added an ounce of hot water. When cold the solution is filtered, the resulting filtrate, containing the globulin and albumose, if introduced into the eye, is highly irritating, and sets up a purulent inflammation. Its therapeutic success in the application of epithelioma, trachoma, etc., depends largely upon the method of application. Good results are sure to follow if cautiously used in order to avoid excessive reaction.

I have always found it most valuable in cases of beginning epithelioma to destroy the cancerous growth. The emulsion should be fresh and carefully made, and great care be exercised in its application so that not too much of it is brought in contact with healthy skin. The slough, however, is soon followed by healthy granulation and repair of the destroyed tissues.

Prognosis: The prognosis varies with the age of the patient, the form, duration, and location of the epithelioma and the presence or absence of glandular involvement.

In the patient under consideration we have only a superficial epithelioma with no glandular involvement, and I believe there has been very little or no metastasis, hence I am of the opinion that the ulcer will eventually heal by granulation with no tendency to recurrence.

1805 WALNUT STREET.

PREVENTION AND CURE.

BY BEVERLEY ROBINSON, M. D.,
New York.

All medical men to-day who are thoughtful and informed, recognize fully how much more important it is to prevent disease than to cure it. Indeed, what is termed a cure is not in any strict sense a cure at all—nine times in ten in acute disease, medical or surgical, Nature with intelligent guidance, which usually means little or no active interference, works out the ultimate well being of the patient so far as may be. Of course, I do not wish to say for an instant that there should not be help rendered in a proper and judicious way. This may be given by a good and reliable nurse—sometimes without much, if any, medical supervision on the part of physician or surgeon—again with oversight and instruction from time to time by the latter. But as to very frequent counsel, advice, acting from either source, it is more than questionable often whether, or not, benefit results. What we most need above everything else in time of illness is gentle, soothing ministrations and the touch and aid of the one who knows how and when to give suitable food and drink, to ventilate the sick chamber, to change and air the bed, to smooth and arrange the pillows and coverings, to look after the fæces and urine, and see that knowing and watchful care is instituted at all times. Love, sympathy and the hourly, godly works that proceed almost infallibly therefrom, is what is above all imperatively required. Charts, tempera-

tures, pulse, respiration, heart beats, etc., may often be ignored from a scientific standpoint without great detriment to the patient. But attention to other things then and there is frequently vital. If the patient is manifestly feeble, stimulate until weakness diminishes, or disappears—if cold give heat to the extremities, or elsewhere locally; if fainting occurs, loosen everything tight, place the head low, open windows, or fan to give air and bathe the brow with some pleasant volatile liquid like cologne or spirits of camphor. All the foregoing to my mind should be regarded mainly as preventive—preventive of accidents and complications of disease in which frequently resides the great danger and which may not, probably will not, occur, if careful continuous attention be paid to them.

In a similar way, in chronic disease, and only for a longer period, we should have these indications carried out. Do we really cure chronic diseases? I fail to have seen it in the large majority of instances. We simply render them more bearable, and by modifying, or lessening, symptoms for a shorter or longer period, we give comparative ease and comfort, and no doubt, also, prevent at times, the development of certain untoward sequelæ. If the foregoing be admitted as true, doesn't it seem far better to interfere medically, or surgically, as little as possible? Doesn't it seem wrong to give medicines to correct what at best is doubtful as to origin and consequences—or to use the knife except where the evident condition and natural results amply justify it?

I am well aware that what is written, if considered at all, will raise a storm of protest. And why? Not because it is not practically true, but simply because it is subversive of a great deal that is time honored and still taught generally. On the other hand, I am willing to state very frankly that after a lifetime of service in hospitals and private practice, such has come to be my conviction. Of course, medicines properly and very judiciously given, are useful, but not, as I believe, strictly speaking as curative agents. They relieve, ward off symptoms and thus should be used. Perhaps, there are a few exceptions, because up to date, we still acknowledge a few specific drugs. But apart from these, I challenge my affirmations to be gainsaid successfully. In surgery, to my mind, setting fractures, opening abscesses, removing foreign bodies are among the few operations about whose certain utility there can be little or no questioning. Think it over and see, *not* as to relief or modification of symptoms, but as to *cure*.

Why write the foregoing? Will it not upset many minds; or if not, will it not be scoffed at, or ridiculed? No doubt, but then most truths are, at least in the beginning. The utility, as it seems to me, is to endeavor to make people do what will prevent disease and also prevent operations. It is far better to continue well, than to become ill for the purpose of getting a so called cure. Do we know how to do it? Alas, in some, in many instances, no.

We cannot avoid or prevent as yet, the development of a cancerous growth, probably, in the vast majority of instances. But we can prevent the occurrence of appendicitis and pneumonia, very frequently. The first is avoided by sensible dietary:

the second by living constantly, as far as may be, in a pure atmosphere—and especially by avoiding close, infected places when greatly fatigued in mind or body. Doubtless, also, many a time this and other infectious disease may be prevented, or warded off, by the use of a really antiseptic mouth wash and gargle. Likewise there are many cases of surgery in which disease has appeared owing to previous bad hygiene, or habits, surroundings, profession, work—and the surgeon while he knows he does not cure causative factors, mitigates results. Thus a gastrointestinal anastomosis may occasionally be indicated in ulcer of the stomach. Thus the ablation of an enlarged prostate may give many years of comfort to an otherwise healthy man passed middle life. But the ulcer of the stomach would not have occurred if the anæmic, nervous man, or woman, had had proper rest, proper food and it may be, a suitable preparation of iron. In like manner the prostate, as a rule, would not have enlarged sufficiently to occasion great distress, if alcoholic habits, excessive eating, or indulgence in some wrong exercise, such as bicycling in a particular instance, had not been indulged in.

Now in medicine, as in surgery, there are many and great exceptions to all rules, and why? Simply because our knowledge of the causes of disease is imperfect, inaccurate, insufficient. We think we know frequently and later we find we were woefully mistaken and that all our knowledge is mere "vanity and vexation of spirit." A few years ago and every medical student thought swampy, badly drained ground caused malaria and rheumatism. About the former we know now (or believe we do) that we were absolutely mistaken. It is also possible that rheumatism is not caused by dampness of soil, but is an infection surely and at all times. Of course, low lying, marshy ground is not desirable either for the subject of malaria, or for the victim of rheumatism. Where have vanished the supposed causes of yellow fever and its contagion? Now that we know, thanks to two immortals of our profession, how the infection is carried to and implanted in human beings.

The last investigation of the congestion of the population of New York city shows that nowhere else in the civilized world do more deplorable conditions of housing exist. Why then do we insist upon spending large amounts of public and private funds to care for tuberculous patients, until first of all we have striven, heart and soul, to correct the primary cause? Poor food, overwork, great cares and anxieties may cause it (tuberculosis), but primarily overcrowding and fetid, poisonous air is easily its most important causative agent.

I have written enough to attract attention, I hope, and perhaps to be criticised adversely, but I trust I have not wearied anyone and surely, surely the vast subject is scarcely touched upon. As it is in our medical world, so it is in our social world. We wish and pray that our sons and daughters may be dutiful, obedient, useful in their day and generation. We hope and trust they may realize our highest ideals. But how is this to be accomplished? Not surely by sending them in every way from the time of their infancy, not by permitting false ideas of life and its obligations constantly to prevail, not by al-

lowing but one thought to be rampant, among youths and maidens, that the sole idea of life should be one of pleasure and amusement and that "honor thy father and thy mother, that thy days may be long in the land the Lord thy God giveth thee" may be quickly set aside when it conflicts at all with the wishes and ambitions of the passing hour.

42 WEST THIRTY-SEVENTH STREET.

SYMPHYSIS BY IMMEDIATE PROTHESIS.

By C. J. KÖNIG, M. D.,

Paris, France,

Laryngologist and Aurist of the Holy Trinity Lodge Hospital

Palatopharyngeal symphysis is not a rare affection and is a subject interesting alike to physicians, surgeons, laryngologists, and dentists. Tertiary syphilis is its most frequent cause; however, it may be due to diphtheria, scarlet fever, lupus, etc.; it is very rarely traumatic. In most cases it is not complete, for there exists usually a small opening between the buccal and nasal pharynx allowing the passage of a little air, but the latter can be forced through only with great effort. The opening may be only a virtual one, that is to say it may allow the passage of a probe, no air, however, being able to pass either by inspiration or expiration, the palate forming a valve which closes both ways.

CASE.—Having had the occasion to see a little girl, eight years old, who was in the latter condition, I set to work

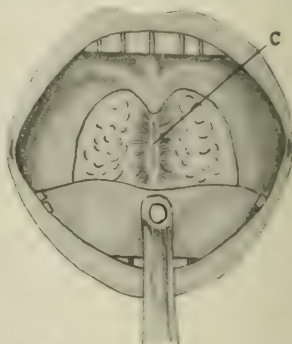


FIG. 1.—Showing thick median creatrix.

to remedy the condition with the desire to improve whatever methods were used against this affection.

The only procedure I could find described in the special textbooks of rhinolaryngology, was the method of Hajek. After incision of the soft palate transversally, the wound is dilated by means of a Voltolini velum tractor and, as soon as possible, by means of Hajek's dilator which is introduced daily in the beginning, later at intervals, gradually increasing the force of the dilatation. According to Moritz Schmidt the patients endure this dilatation hardly one minute in the beginning, but very soon during thirty to sixty minutes. He cited a case, where the symphysis was due to lupus, in six months. He also says he cured a case due to syphilis "just as quickly."

In the case that came under my care, I not only thought that such a procedure would not be followed by any beneficial or permanent result, but also that a more extensive operation followed by an immediate prosthesis could alone give satisfaction with less loss of time and expense to the patient.

Moritz Schmidt, *Die Krankheiten der oberen Luftwege*, third edition, p. 602.

The little girl whose case spurred me on to such an attempt, was, as I said before, eight years old. Her nasal obstruction was complete and was of traumatic origin, probably operative, for, since adenoids and tonsils were removed four and two years ago respectively, she has been unable to pass air through her nose either in one direction or the other, while previously she could do so. As a result of mouth breathing she was weakly, behind in develop-



FIG. 2.—Inferior concave surface of plate.

ment; through bad sleep she had become very nervous, and, on the slightest exertion, became covered with perspiration.

The examination of the throat showed a thick, median cicatrix (Fig. 1) of the pharynx three to four centimetres long, extending from the velum palati downward to a level with the base of the tongue or the upper border of the epiglottis. The whole posterior wall of the buccal pharynx was cicatricial and its lateral walls were drawn toward the median line in the form of an angle open anteriorly, the posterior pillars being joined together. The edge of the soft palate to the right and to the left was included in the cicatrix of the pharynx; the uvula was normal, and between it and the cicatrix on the right side existed a virtual opening communicating with the nasal pharynx and allow-



FIG. 3.—Superior convex surface of plate.

ing the passage of a probe 7 mm. in diameter, which could be easily moved from right to left in the nasal pharynx, which seemed normal in its dimensions. The opening, as I said, was a virtual one, for the child could pass no air through it.

The operation was performed on April 3rd under local anæsthesia with cocaine applied to the surface and novo-

caine injected. I made a median incision extending the whole length and through the thickness of the cicatrix. Then with two pointed dissection knives, bent laterally, right and left, and passed through the virtual opening, I made two lateral flaps, my incisions passing behind what constituted formerly the region of the posterior pillars and the tonsils. I incised laterally and inferiorly as far as possible in order to reconstruct the pharynx completely, making in reality an artificial pharynx. The cicatricial tissue was exceedingly dense and this part of the operation was rather difficult; the child swallowed quite a quantity of blood, which was vomited before the end of the operation, but the



FIG. 4.—Posterior horizontal view of the plate.

result was very encouraging, for the respiration through the nose in both directions was reestablished immediately, and inspection of the throat showed it to be entirely normal in its dimensions, its outlines, and its general appearance. There was considerable cicatricial tissue on the flaps and the posterior pharyngeal wall, which I removed with Hartmann's forceps.

Once the operation performed, it was necessary to keep the parts asunder for a while to allow their epidermization. I had previously shown the child to Professor Delair, of the Dental School of Paris, to determine whether it was possible to make a prosthesis to be applied to the teeth and palate and on which dilators could be attached reaching into the back of the throat to hold the flaps and the soft palate away from the posterior pharyngeal wall. Although he had never seen a similar case, nor made an appliance of that kind, he assured me immediately that it was possible



FIG. 5.—Apparatus in position.
(To be seen with a magnifying glass.)

and that the child ought to tolerate the prosthesis as well as children and adults tolerate the artificial soft rubber palates of which he is the inventor.

The apparatus he made for this case proved to be exceedingly ingenious. It was introduced into the mouth and throat of the patient immediately after the operation. This

is the description Professor Delair gave me of the apparatus:

"The pillars of the soft palate as well as the soft palate itself accomplish simultaneously or alternately, during phonation and deglutition, three well defined movements. It was therefore necessary to combine and execute an apparatus working automatically and imitating perfectly the action of the soft palate and of its pillars, without attenuation or amplification of the action and effect of the lateral dilators. These movements are: 1, maximum separation and approximation of the pillars; 2, raising and lowering of the soft palate; 3, anteroposterior and vice versa movement of the soft palate and of its pillars during deglutition.

"The apparatus was composed of: 1. A platinum plate adapted to the palatal arch and held in place by clamps surrounding the teeth. 2. A small, flat, gold chariot movable on two lateral slides; it moves anteroposteriorly and vice versa by means of a small rubber ring which unites it to the platinum plate. A stop and safety screw passes through it and lodges in a furrow of the platinum plate, thus preventing the disjunction of the parts in case the rubber should break. A hinge terminates the chariot. 3. A small, gold plate adapted to the central tube of the hinge and united to the chariot by another rubber ring acting as a spring and drawing the plate from below upward during the action of the soft palate, as well as the dilators attached to the plate. 4. Two small horizontal bars made of gold, soldered on two twin hinges, bent so as to surround the uvula, and surmounted by two aluminum dilators. The bars are about 20 mm. in length and are solidly held in place by two screws made of gold which serve as pivots. To their extremities are screwed vertically the two aluminum dilators, which are 4 mm. thick, 7 mm. wide, and 30 mm. long. The bars are united to the small gold movable plate, each by means of a rubber ring, which, on contracting separates the one from the other. Thus, as soon as they are placed behind the pillars and the palate in the artificial pharynx made by the surgeon, the dilators draw the soft palate forward, hold the walls of the pharynx separated, and resist the secondary cicatricial contraction."

As soon as the apparatus was put in place, the child was brought home and gargled every hour with a solution of sodium bromide and for a few days took a little of the same salt internally. I saw her the evening of the day of the operation; I found her playing in bed with her doll, and I learned, quite contrary to my expectation, that she had had no pain the whole day, no nausea, no vomiting, and that the milk she took did not pass into her nose, paradoxical as this may all seem.

Three weeks later the throat seemed entirely healed, and I thought the apparatus might be definitely removed, but as the child could eat, drink, sleep, and talk with the apparatus, and experiences no inconvenience whatsoever by its use, I thought wiser to leave it in place a little longer. It was removed, it is true, since the beginning, and replaced by the child's mother, after each meal in order to clean and boil it. Now it is removed before the meals, and replaced after.

This apparatus, of which the accompanying photographs will give a sufficiently accurate idea, will find its application in all palatopharyngeal symphyses of whatever origin, syphilitic, diphtheritic, scarlatinic, lupous, etc. By its means the minimum of irritation to the healing tissues will be obtained, for it is light, and movable in all directions, causing consequently no rubbing. The dilatation is not violent, but gentle; being, however, constant, it is not painful and is quite sufficient to resist secondary cicatricial contraction, as the present case proves. Intermittent dilatation is painful, and is frequently followed by failure to bring about a cure.

This case demonstrates the possibility of tolerating a permanent prosthesis in the pharynx and may have important consequences for the surgery of the throat.

65 Rue de Miromesnil.

A PLEA FOR THE ADVANCEMENT OF THE STUDY OF MEDICAL HISTORY.

BY HERMAN POMERANZ, M. D.,
New York.

"Not to know what has been done in former times is to be forever a child."—*Cicero*.

I.

For many years the writer has been profoundly impressed with the fact that as a class, the physician of today has as complete and comprehensive a knowledge of medical history,—its infancy, its growth, and gradual development,—as is possessed by a Tibetan lama, self immured in the grottos of Linga-gunpa.

This is by no means a too sweeping, Aristarchian condemnation, as many a reader, *prima facie*, may be inclined to think. Nor should it be scanned with a satirical tee-hee. To test its verity, exhaustive research is hardly requisite. Frequent conversations with medical men of all classes will establish the truth of my indictment. Medical men will readily admit their ignorance of medical history. In this connection the writer is reminded of an anecdote given us by James Boswell, idolatrous "Bozzy." A lady once asked Johnson why he defined the word "pastern" the knee of a horse. Instead of making an elaborate defense, as she expected, he at once answered, "Ignorance, madam, pure ignorance."

To be just, the physician alone cannot be blamed for his paucity of historical knowledge pertaining to his own profession. The history of medicine as a subject, both for research and compulsory study, has been unreasonably, unjustifiably neglected by the medical literati and the colleges of the Anglo-Saxon countries. It is mainly to the Teutonic writers—Haesler, Sprengel, Baas, and Wunderlich—that the world is indebted for the sum total of our knowledge of medical history. In the domain of research, historical, and philological, our German brethren reign preeminent. Though often laborious in the extreme, their literature as regards medical history is generally profound, always luminous, and never insipid.

For the robust comprehension of a science or an art, the study of its embryonic origin, its developments in multitudinous cradles, its wars with superstition and dogma, with priestcraft and mobcraft, is of primary, of vital importance. To the superficial student and to the practitioner of today it may seem that the medical theories, the blasted systems, and the mort civilizations of chiliads gone by can be of little interest and of less utility. Let the apathetic student of the healing art give its history analytic consideration and he will find that intrinsically it contains, to a varying degree, the "germs" of every system and every practice of all the ages, tested in the crucible of science. He will find sense in the seeming nonsense of customs extant since the matin of Time, and a deep significance even in the superstitions that have grown out of the very souls of nations. What subject can furnish more instruction, interest, diversion? Verily, the study of medical history, like virtue, is its own reward.

The history of medicine is eminently the history of civilization. It portrays with photographic fidel-

ity the peculiar psychology, the life, and death of nations,—barbaric, pagan, Christian. It vivifies, across the lapse of years, iconoclasts in medicine and surgery, men endowed with a restless inquisitiveness, who fought, often at the price of liberty and life, with devastating diseases on the one hand and merciless persecutions on the other. It narrates, how in successive ages human life has been prolonged, pain annihilated, diseases extinguished; how, concomitant with the progress of medical science, and as a result, there has ever been a steady improvement, physical, moral, intellectual, of the race of man. . . . The study, therefore, of medical history is a liberal education in itself. It gives the student a breadth of mental vision, a copiousness of pregnant ideas, and, to fixed conceptions a pliancy, which he cannot obtain from the study of any other subject. The knowledge gained is truly encyclopædian.

The history of medicine is admittedly a vast subject, embracing and explaining as it does to a considerable extent, the histories of most of the sciences, of philosophy, theology, and the belles lettres. Physicians of limited education and complete ignorance often argue that medicine being primarily a practical subject and the time devoted to study very limited, it is the height of educational folly to subject students to an enervating dissipation of intellect and of time by cramming them with historical erudition. These are absonous contentions. To those hothouse physicians let the response be, in the first place, that lack of time is a ridiculous reason and hardly merits refutation. In the second place, as regards the practicability of the subject, let it be said in the words of the Teutonic Macaulay, Hermann Haas: "Moreover, the history of medicine offers him, (the physician,) as scientific gain, through the knowledge of the past the measure for a just and well founded criticism of the doings of his own time; places in his hand the thread by which he unites past conditions and efforts with those of the present; and sets before him the mirror in which he may observe and compare the past and the present, in order to draw therefrom well grounded conclusions for the future. . . . The study of the history of medicine, above that of all other medical branches, should give a more ideal direction to our conception of our calling by showing that its duties and its rewards are not to be found exclusively in our daily labors and scanty pay (as is, alas, too often the popular belief), and by pointing out the fact that only in struggles and labors directed to the intellectual advancement of humanity—struggles unnoticed even in the present and probably too, long in the future, lie the fertile germs of futurity and a scion of improvement for all mankind."

II.

The writer, some time ago, communicated with the leading medical institutions in every State of the Union and found after diligent inquiry that not one had the compulsory, and few the optional, study of medical history in their various courses. To the Lilliputian mind this fact, dolorous to reflect upon, may appear of no import whatsoever, but to the intelligent physician it is fraught with the utmost significance. The colleges of this country profess to teach the science of medicine without paying the

least attention to a most important branch of the subject. Thackeray says somewhere, "Nothing is so good as a university education; nothing so bad as a university without the education." To a certain degree, this is lamentably applicable to many of our educational hothouses. They are ignorant of the fundamental requirements of a proper and a thorough knowledge of medical science. The catalogues altitiously describe the advantages of their respective institutions; their facilities are unbounded,—as unbounded as their assurance.

Regarding my indictment and in rebuttal as it were, the Cornell Medical College, undoubtedly one of the best institutions in the country, informs me that there are some dozens of interesting subjects more or less closely pertaining to medicine which it would be desirable to insert in their curriculum if the student could study twenty-four hours a day. Also, that the curriculum is now so overcrowded with absolutely essential subjects that medical history can only be taught students in lectures under general subjects, and is always so taught there.

This is the defense of all our medical colleges. They breathe a tender sympathy and regard for the poor student threatened with a surcharge of knowledge. "And it is so taught," is unfortunately a flight of fancy and has no basis in fact, as investigation by any one interested will prove.

III.

Chauncey M. Depew, the venerable Senator from New York, recently made some pertinent remarks at the commencement exercises of the Medico-Chirurgical College and Hospital, Philadelphia. It would be well for the student and the practitioner to take them to heart. He said: "Time is practically unlimited for young practitioners. It becomes more valuable as they grow more useful. Except on the score of income it is not wholly a misfortune but rather an opportunity. Most young men waste opportunity, with the result that when they are called they are found wanting. It is in the period of halting business that the industrious, energetic, and far sighted man perfects the learning of the school and vastly enlarges it. He has learned more or less thoroughly the textbooks and the lectures, but in the review for which he has ample leisure he will confirm the teachings of the college and more than that can absorb the literature of his profession. The curriculum made him a drudge; the literature will make him an enthusiast. Every professional man, in fact any man in any occupation should have a hobby or fad. The man who uses one set of muscles grows abnormally on one side to the decrease in vigor or paralysis of the other. So with the brain. The man who is simply a lawyer, a doctor, a dentist, a scientist, and nothing else grows narrow in his general conception of the world about him and his place and duties in it, if his whole mind and time are concentrated on his pursuit. A brilliant example of what I mean was Dr. Oliver Wendell Holmes. He was great in his profession, and greater because he cultivated general literature. Our greatest lawyers, like Webster in his day and Evarts in his day, and Choate and Root now, and your John G. Johnson are greater in their profession because of the all around constant exercise of every

faculty of the brain in the statecraft, diplomacy, on the platform, and in the study and appreciation of the highest art of all times."

The following letter received from the dean of the Rush Medical College will prove highly interesting. It was written in reply to my manuscript which I sent him:

Dr. Herman Pomeranz,
New York, N. Y.

CHICAGO, August 4, 1900.

DEAR DOCTOR:—I have your letter of recent date inquiring as to the reason why medical institutions in the United States, as a class, ignore the study of medical history.

It is not easy to express briefly one's opinion in regard to this important question because so many factors enter into the matter, but I should say that the principal reason is the already overcrowded curriculum. The courses of study in the several medical schools have been built up at random with little consideration for the student's limitation of time and energy or of his real needs. Instead of the faculty setting out to inquire, first, how many hours the average student may be expected to devote to his work each day, and, second, how much of this time should be spent in the class room, laboratory, etc., and how much time for study and reflection, each member of the faculty has indicated how much time his subject should be allotted. The result of this plan of procedure has depended not so much on the relative importance of the several subjects as a preparation for medicine, but on the relative persistence and insistence of the several members of the faculty. Hence, the enormously overcrowded and widely varying curricula of the several medical schools. In some, for example, the subject of orthopædic surgery receives almost as much time as the major subject of surgery, while in other schools it is not mentioned. A similar statement can be made of almost every subject along the line.

For the purpose of your question, however, the important fact is the enormous overcrowding of the curriculum, demanding so much time of the student that none is left for important topics like the history of medicine, which, important as it is to the student, has no specialist engaged in its practice who is interested in exploiting his knowledge of the subject and thus securing practice.

This wide diversity and overcrowding of the curriculum has attracted much attention the last few years in conferences of medical educators and the State boards of medical examiners, as you are doubtless aware. There are those who believe the remedy lies in the construction of a uniform curriculum for all medical schools, rigidly adhered to. We at Rush Medical College are not of this opinion, believing that the elective principle, now so universally adopted by institutions of general learning, is practicable and advantageous in the medical college as well, though with certain limitations. Under this plan each student is required to secure a minimum amount of credit in each of the great branches of medicine, though he has a wide choice of topics and teachers, while the subsidiary topics are made, to a considerable degree, elective.

It is not the purpose of this elective scheme with us to encourage the student to prepare for any special line of practice, as is the case at Harvard, but to give the student an opportunity, with the advice of his instructors, to lay special emphasis on those branches where he is weak, and also to develop his faculties along those lines in which he shows special interest and ability for investigative work.

In this elective curriculum the history of medicine is given in alternate years. Furthermore, many of the chairs dwell at greater or less length on the history of their special branches. The student who is interested, therefore, in the history of medicine is given an opportunity to acquire a somewhat comprehensive knowledge. I believe this to be a better plan than to have a brief perfunctory course of lectures on the history of medicine, which every student is required to attend and which, at best, can give only inadequate knowledge of the great topic of medical history. I further believe that a real vital interest in the history of medicine will be best developed by encouraging the student to study the history of the profession in the region in which he is located, making contributions to the history of medicine, histological and otherwise, from the study of

the original data. Such a plan as this we have now in contemplation.

With the enormous amount of new knowledge, which is being added to our store of medical science every year, and the urgent demands of each branch for more and more time on the part of the student, I do not see how it is possible to construct any medical curriculum which shall cover the field adequately. To insist that a student shall take work in all the numerous subjects and topics means that a mere smattering of attention can be given to many of the subsidiary topics. Such a course could not possibly convey any amount of information which will be of much value in any topic, for example, the history of medicine, and the method is sure to defeat the main object of any educational plan, viz.: that the student shall be trained to pursue anything he undertakes with thoroughness and a reasonable degree of completeness. This result is only possible under some kind of elective or selective system.

Yours very sincerely,

JOHN M. DOBSON, Dean.

1545 MADISON AVENUE.

UNCONTROLLABLE UTERINE HÆMORRHAGE.

By A. SAMUELS, M. D.,
Baltimore.

Associate Professor of Gynecology, College Physicians and Surgeons.

Many cases of uterine hæmorrhage occurring near the menopause without obvious cause have been reported within recent years. The pathological findings in these cases have been so various that nothing conclusive can be deduced. Some of the observers have attributed the hæmorrhage to changes in the bloodvessels, and have explained the hæmorrhage as the result of the inability of the thickened rigid vessels to respond to vasomotor stimulation. However, the connection between uterine arteriosclerosis and uncontrollable uterine hæmorrhage has not been established. In fact many cases that have shown a marked sclerotic condition of the vessels have been unattended by hæmorrhage, moreover serious hæmorrhage has been noted where the vessels showed no marked changes. Other observers have sought the cause of hæmorrhage in ovarian changes. Ovarian changes may be noted in histories of a large number of patients manifesting uncontrollable hæmorrhage of obscure origin, particularly in those who have not passed the menopause. It is quite clear that most of the causes of hæmorrhage have a definite connection with the periodic ovarian stimulation on which menstruation depends. It is quite important, therefore, to consider the mode of occurrence and control of normal menstrual hæmorrhage, as variations in the normal stimulus may result in abnormalities of the menstruation.

It has been sufficiently demonstrated by many observers that normal menstrual hæmorrhage is brought about by a gradually increasing pelvic congestion which culminates in hæmorrhage mostly by diapedesis, but also by a rupture of some of the endometrial capillaries at the height of the congestion.

The cause of this general rise of blood pressure resulting in congestion has not been definitely determined. Some of the observers believe it to be due to an internal ovarian secretion exerting its influence through the blood, while others have attributed this rise of blood pressure to nervous influences.

Here it may be well to consider separately the re-

sponse of the uterus including the blood vessels, and endometrium to the stimulus which excites this increased blood pressure, that brings about pelvic congestion, and normal menstrual bleeding.

Theilhaber has fully described how uterine contractions control hæmorrhage. He points out that during the greater part of the menstrual period, the uterus is large and flabby; contractions occur which gradually become longer while the bleeding becomes correspondingly less until, finally, the flow ceases completely by strong and continued contractions. He argues that if the muscular contraction is insufficient, hyperæmia results with its probable secondary results in swelling and oedema of the uterine parenchyma, and from these conditions long continued menorrhagia may readily occur.

Anspach's theory as to the occurrence of normal menstrual bleeding while essentially the same as that of Theilhaber attributes the menstrual bleeding as due to obstruction to the venous return whereby congestion is produced resulting naturally in diapedesis. He ascribes the obstruction to the venous return to weak uterine contractions narrowing the veins, but failing to narrow in a corresponding degree the thicker walled arteries.

These theories, while seemingly correct, are more or less defective as only the uterus is considered in bringing about the cessation of normal menstrual bleeding. The uterus, no doubt, plays an important part in bringing about the cessation of normal bleeding as Keiffer from his study of the histology of the nervous system of the uterus has conclusively proved that vasomotor stimulation causes relaxation or contraction of the whole uterus. The involuntary muscle of the bloodvessel walls is regarded as part of the uterine musculature and subject to the same variations and the same pathological changes. It therefore becomes apparent that other factors must be considered in bringing about the cessation of normal bleeding, viz., the bloodvessel walls and the natural stimulus. It is possible that at the height of menstrual congestion the pressure within the vessels is such as to paralyze their contracting power. As the pressure lessens from the escape of blood and from the diminution of the natural stimulus the vessels regain their tone and the uterus responds to vasomotor stimulation, contracting sufficiently to stop the hæmorrhage. For the complete cessation of the flow, strong and lasting contraction is necessary, and this is most probably brought about by a response of the entire musculature to vasomotor stimulation. Any cause interfering with the normal response of the musculature to vasomotor stimulation may cause irregularities of the menstruation.

The response of the endometrium to the menstrual stimulus is important and interesting. The gradually increasing congestion causes a definite swelling of the mucosa, so that the stroma cells become more distinct in outline, and later polyhedral from mutual pressure, while the glands appear larger from swelling of their epithelial cells. The surface capillaries show a remarkable power of distention to accommodate the increased supply of blood, and also appear to increase in number so that some observers have thought that new capillaries are formed. It is possible that these delicately walled collapsible tubes become apparent only when in a more or less dis-

tended condition. The actual hæmorrhage occurs by diapedesis through these delicate capillary walls, and also in all probability by the rupture of some of them, the corpuscles forcing their way between the individual cells, of the surface epithelium, or by dislodging one or two adjacent epithelial cells, finding a freer exit.

What is true of the mode of occurrence and control of normal menstrual hæmorrhage is also true as regards the mode of occurrence of abnormal hæmorrhage. The hæmorrhage occurs from capillary oozing, an overdistention of the endometrium capillaries being first produced. The ease with which hæmorrhage occurs depends to a considerable extent, on the healthy condition of the capillaries and their resisting power. It is but natural to expect that any disturbances of the circulation, whether arising from increased arterial supply, causing an overfilling of the capillaries, or from venous obstruction producing overdistention by backward pressure, would tend to produce uterine hæmorrhage. There is little doubt that such circulatory disturbances would result in the appearance of hæmorrhage were it not for the peculiar character of the endometrium to respond to stimulation. Many conditions have been attributed as causative factors of this capillary oozing. Reinecke reported four cases where hysterectomy was performed for bleeding. Pathologically he found marked changes in the vessels, and explained the hæmorrhage as due to the inability of the thickened rigid walls to respond to vasomotor stimulation. Pozzi, from his investigation as to the causes of hæmorrhage, found a thickening in and around the vessel walls due mostly to an increase in elastic tissue and only to a less extent in fibrous tissue. Whether or not this increase in elastic tissue is the causative factor in hæmorrhage remains to be fully proved. As Theilhaber states, it is extremely difficult to distinguish physiological from pathological changes in the bloodvessels of an organ subject to such functional variations as the uterus. He believes that most of all the changes, described as arteriosclerosis, are conditions normal in the parous uteri. He believes that the musculature plays an important part in the occurrence of hæmorrhage. Other observers have taken the opposite view from this and have attributed the cause of hæmorrhage to ovarian changes, and from their studies have been able to demonstrate the relationship between menstruation and periodic ovarian stimulation.

Lawson Tait, many years ago, clearly demonstrated that the cystic changes in the ovaries frequently give rise to menorrhagia. The endometrium in these cases showed little or no change from the normal. Czempin has observed severe menorrhagia in connection with annexal disease, and states that severe and lasting hæmorrhage may be due to exaggeration of ovarian stimulation resulting in arterial congestion. The hæmorrhage in these cases may be very profuse and is not benefited by curettage or any other treatment except the removal of the diseased organs. The endometrium in these cases shows little or no appreciable change from the normal. This is a point of some interest in view of the changes that the endometrium shows in cases of venous congestion.

So far the causes of abnormal uterine hæmorrhage naturally fall into three groups:

(1) Abnormalities in the periodic ovarian stimulation.

(2) Conditions giving rise to muscular insufficiency either from (a) actual deficiency of the muscular tissue, or (b) loss of tone and consequent deficient response to vasomotor stimulation.

(3) Conditions giving rise primarily to continued congestion of the endometrium, either from (a) increased arterial supply, or (b) venous constriction.

(1) Of the ovarian changes and their effect on menstruation we know comparatively little. We know from actual experiment that the growth of the uterus depends directly on the healthy functional activity of the ovaries, that the complete removal of the latter results in atrophy of the uterus, and that retention of a small piece of healthy ovarian tissue is sufficient to prevent these regressive changes. Physiologically, there is a gradual lessening of the ovarian activity as the menopause is approached, and this is accompanied by general regressive changes, namely, atrophy of the uterine muscle and mucosa, thickening of the walls of the vessels, with narrowing of their lumina, and a gradual cessation of menstruation.

The probability of disturbed ovarian function occurring at the menopause is readily appreciated, and the marked connection between the approaching menopause and uncontrollable uterine hæmorrhage strongly suggests the possibility of ovarian changes being the causal factor in hæmorrhage. Cases of spontaneous cure occurring when ovarian activity ceases and the menopause is fully established, strengthen this possibility.

In several of the reported cases of uncontrollable hæmorrhage, laid to the charge of arteriosclerosis, and muscular deficiency have shown ovarian changes. In a case reported by Barbour, the right ovary was cystic with very little ovarian substance left, while the left ovary was small and sclerotic. Anspach reported three cases of what he termed "metrorrhagia myopathica"; of these two showed ovarian changes to a slight extent.

It is evident that impairment of the functional activity of the ovaries may occur independently of any demonstrable lesion, and may be the cause of hæmorrhage in those cases where no pathological condition is found.

(2) It is obvious from a consideration of the part played by the musculature in the control of hæmorrhage that failure of the muscle to contract efficiently may be associated with hæmorrhage of the severest kind. Such failure may be due to (a) actual deficiency of the muscular tissue. Insufficient muscular development, such as not infrequently obtains at the time of puberty, or actual atrophy and degeneration, such as occurs normally at the menopause, but may occur as a premature and so far pathological change, or "sclerosis" of the uterus, whether due to a primary diathetic condition or a secondary result of infection, all come under this heading and in all the muscular coat of the vessels participates in the pathological changes. Without actual deficiency of muscle, insufficient contraction may be due to the loss of tone of the musculature. This may occur as a simple atony associated with a lowering of tone throughout the body from some

general cause, and possibly accompanied by manifestations of muscular atony in other parts of the body or as a local change from the various causes producing atony of the uterine muscles through fatigue of the nerve cells.

In cases of metrorrhagia arising from this cause, intermenstrual leucorrhœa is not an infrequent symptom, the explanation being the lowering of tone in the vessel walls and the consequent escape of leucocytes. Typically, deficiency of the musculature, without deficient vitality of the vessel walls from loss of tone will result in metrorrhagia, the hæmorrhage becoming more prolonged and profuse as the secondary hyperplasia of the uterine parenchyma becomes more evident.

Theilhaber places the majority of uncontrollable hæmorrhages at the menopause in this class. He has been supported in his view by Palmer Findley. Normally the regressive changes in the musculature associated with the menopause are associated by correspondingly regressive changes in the bloodvessels which become accommodated to a decreased blood supply. Anything therefore preventing this normal diminution in the blood supply or anything keeping the blood supply at its former level, in face of the retrograde changes in the muscle will cause hæmorrhage, were it not that the vessels are prevented from closing properly. It would seem more reasonable to regard hæmorrhage as the result, not of the atrophied condition of the muscle which is physiological, but of the patent condition of the vessels which is pathological. A normal blood supply acting on an insufficient musculature will have the same practical result as an increased blood supply on a normal musculature. This gives rise to the question whether the muscular atrophy is premature and therefore pathological, and to be blamed as the casual factor in the causation of hæmorrhage, or whether the blood supply is maintained at a high level, either through failure to diminish when it naturally should, or from a real and as yet unexplained increase in pressure.

Although many of the reported cases of uncontrollable hæmorrhage show intermuscular fibrosis with atrophy of the muscle, yet there is no general agreement that atrophy of the muscle beyond that occurring normally at menopause is characteristic. Shaw, investigating cases of metritis, finds no marked increase of connective tissue at the expense of the muscular, but rather a hypertrophy of both elements due, he considers, to efforts on the part of the uterus to rid itself of the thickened mucosa.

Cases of hæmorrhage where the musculature is insufficiently developed, or where its atrophy is definitely premature are to be placed in the category of myopathical hæmorrhages. In this class also may be justly placed those cases which have as their starting point an acute febrile or wasting disease such as typhoid or tuberculosis. All of these are definitely associated with changes in involuntary muscle, and show their effects as a rule on the heart. Otherwise, the changes in the uterine musculature are probably for the most part secondary to circulatory disturbances.

(3) Cases of intractable uterine hæmorrhage due primarily to circulatory disturbances form an impor-

tant group. Continued congestion of the endometrium may be due to (a) an increased arterial supply. In determining this the endometrium may be primarily at fault, as in the case of direct infection, placental retention, where the remnants act the part of an irritant foreign body and malignant diseases of the mucosa. Inflammatory reaction and tumors of the annexa, also tumor formations particularly fibromyomata in the uterus itself will likewise determine an increased arterial supply, and to these may be added any local irritation, mechanical or psychic. Freund has shown that arterial congestion is characterized by an increase in the number of capillaries and the widening of the vessels, in which the veins take part more readily and to a greater extent than the arteries, the widening of the arteries being of a diffuse character affects the capillary venous network, on which the strain of the increased blood supply first tells.

(b) Venous obstruction may arise from general conditions such as the heart or kidney disease, lung affections, chronic constipation, etc., or from local obstructions to the venous return such as would be caused by tumors of the uterus and from displacements. The resulting passive congestion does not, according to Freund, cause an increase of capillaries, but results first in irregular dilatation of the larger veins, particularly of those in the fundus.

Long continued congestion from whatever cause brings about a typical reaction in the mucosa. Here the changes are slow and gradual; the distention of the capillaries does not result in hæmorrhage, as in the more rapid menstrual increase in blood pressure, because the tissues have time to adapt themselves to the increased blood supply. Hyperplasia of the tissue results, affecting first the mucous membrane and extending in the course of time to the entire uterus, giving one of the forms of "chronic metritis."

Many attempts have been made to elucidate "chronic metritis," some observers regarding it as always due to infection of a more or less remote date, others as secondary to chronic endometritis, others as a primary condition giving rise to chronic endometritis by interference with muscular contraction and consequent hyperæmia. There are many pathological changes involved, but one form of infection, where the uterus is generally large and soft, with thickened walls showing no evident disproportional increase in fibrous tissue, but rather a general swelling and hyperplasia of all the constituent elements, the endometrium at the same time exhibiting one or other of the usual formations of glandular endometritis, it is almost certainly due primarily to a disturbance in the circulation. This is the form of chronic metritis found in the various displacements of the uterus.

Clinically these cases are characterized by an increasing menorrhagia. The menstrual stimulus, normally resulting in a comparatively rapid overdistention of the capillaries, produces its effect more slowly through the thickened mucosa and its already comparatively distended and more numerous capillaries. When hæmorrhage does occur at the height of the congestion, it is more profuse than normal, because of a more widely distended condition of the

capillaries. The bleeding lasts longer, partly from the lowered tone of the vessels, from prolonged dilatation, and partly from insufficiency of the oedematous muscle, resulting in less efficient response to the vasomotor stimulation, and failure to arrest the hæmorrhage with normal rapidity.

Not all cases of venous congestion become clinically apparent to menorrhagia. Whether abnormal hæmorrhage results depends to some extent on the resisting power of the endometrial capillaries. The vessels of the endometrium are peculiar. Macgregor has carefully described them, distinguishing between thick walled and thin walled vessels. The latter are merely tubes lined by a single layer of endothelium, and show an enormous power of dilatation. The "thick walled vessels" derive their support from a condensation of the stroma cells around them, and these, Macgregor states, while showing many changes in the way of thickening of their walls, hyaline degeneration, etc., never dilate. The thick walled vessels which it seems hardly correct to call "arterioles," may become dilated in cases of long continued venous congestion.

In determining the causal factor in any case of uncontrollable uterine hæmorrhage many conditions must be considered. After excluding cases probably arising from muscular insufficiency and eliminating all the usual causes of long continued congestion, there still remains a class unexplained. A careful consideration of the possible known causes markedly reduces the number of these obscure cases. Those cases becoming evident only at the menopause have probably their origin in circulatory troubles, congestion having lasted perhaps for years previously without giving rise to any troublesome symptoms.

We do not know how far ovarian activity acts in maintaining the uterus in a healthy condition, but a twofold action at least suggests itself. The periodic vasomotor stimulation causing reflex contraction maintains the musculature in an efficient working condition, and ovarian secretion in some obscure way preserves healthy uterine tone. When ovarian stimulation begins to fail the uterus suffers from a certain amount of atrophy from disuse, and there is a tendency to degenerate from cutting off some of its trophic influence. The menstrual stimulation is essential in starting a hæmorrhage and the prevailing uterine conditions prevent its arrest.

Before concluding I wish to report two cases of uncontrollable uterine hæmorrhage where hysterectomy was performed for their cure.

CASE I.—Mrs. H. H. W. Family history, good. Past history, patient had had one child, at the age of twenty-two; delivery normal. Began to menstruate at the age of fourteen, occurring regularly every four weeks. Slight pain before menstrual flow appeared. Flowed from four to five days. Menses returned eight months after birth of child. Two years after the birth of child the menses became irregular, occurring every three weeks and lasting from eight to ten days.

Present condition. Menses occurred every fifteen to sixteen days; the bleeding was profuse and lasted from ten to fourteen days, having practically no clean intermenstrual period. Patient's general condition was good. Red corpuscles, 3,000,000; hæmoglobin, sixty per cent. On examination the uterus was found enlarged and of an irregular shape. Tubes and ovaries were apparently normal. Clinical diagnosis, interstitial fibromyomata of the uterus. Operation, supravaginal hysterectomy. Patient made an un-

eventful recovery. Macroscopically, the uterus was firm and enlarged. On section the walls of the uterus were irregularly thickened. The thickening was due to an increase of muscular tissue. The endometrium was regularly thickened throughout. The surface was smooth and of a pinkish color. Histologically, the endometrium showed a marked increase in the number of glands, a few of which were dilated and dipped into the muscular coat. The gland epithelium was swollen and oedematous. There appeared to be no marked change in or around the vessels. There was not the least suggestion of a malignant process. The change in the mucous membrane strongly suggested the primary trouble was in the endometrium. The increase in the musculature seemed to be that of a "work hypertrophy" that had most probably been caused by the efforts of the uterus to expel the thickened endometrium. The case was no doubt one of chronic metritis following the infectious processes of the endometrium.

CASE II.—Miss E. F., age thirty-five, no children, no miscarriages. Menstruation began at sixteen, flowed seven days, slight pain in back and lower part of abdomen before flow became fully established. Appetite was good. Patient was constipated. Two years ago patient's menses became more profuse, lasting ten days. The flow gradually increased, and at the present time flow lasted fourteen to sixteen days. The uterus was somewhat enlarged, normal position. Patient was curretted for diagnosis. Histologically the endometrium appeared thickened. Glands were swollen, tortuous, and increased in number. The glands dipped far into the muscular tissue. The cells stained uniformly and showed no tendency to break through. The glands were surrounded by stroma of embryonic cells, that is, cells which produced connective tissue. The arteries were increased in number and size. A slight congestion was seen near the surface epithelium. Diagnosis, hyperplastic glandular endometritis. Patient was relieved by currettage, and remained in an improved condition for three menstrual periods, during which time the menstrual flow was less and lasted eight days. The menstrual flow again became very profuse, and the bleeding lasting from twelve to sixteen days. Supravaginal hysterectomy was performed. Macroscopically, the uterus was enlarged and soft. On section the walls were appreciably thickened; the endometrium was of a pale color and presented an undulated appearance. The thickening of the endometrium appeared more marked just behind the internal os. Histologically, there appeared to be an increase of muscular tissue. The arteries were thickened and increased in number. The endometrium showed changes as described. The case was interesting from the fact that it showed changes in common with two conditions. The increase of muscular tissue suggested a chronic metritis following a chronic endometritis. The change in the arteries, while not decidedly marked, suggested a possible beginning of an arteriosclerosis.

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2009 McCLELLAN STREET.

CASE OF TETANUS WITH RECOVERY FOLLOWING INJECTION OF ANTITETANIC SERUM INTO THE SCIATIC NERVE.

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The following case of tetanus may be of interest, as the symptoms show some deviation from the usual and as the patient recovered after having received large quantities of sedatives and antitetanic serum together with one intrasciatic injection of antitetanic serum.

CASE.—M. T., a well developed white male, thirty-seven years of age, a teamster by occupation, was admitted to the medical wards of the Philadelphia Hospital, August 6, 1908, and assigned to Dr. Boston's service. Patient complained of a continuous, dull pain in the front parts of the abdomen and chest, a tired feeling about the neck and lower jaw and a sensation of pain and stiffness on motion in the back and the posterior part of the thighs.

Family history was negative.

Personal history showed him to be a man of good habits. Past medical history disclosed nothing of clinical interest. He had never suffered any serious illness, and he denied venereal infection.

Present illness: This began three days before admission. While at his work he experienced a feeling of pain in the anterior part of the chest and of stiffness in the legs. These symptoms became worse, and he was forced to give up work, and three days later came to the hospital. On admission his temperature was 97° F., the reduction being due probably to his admission bath, pulse 95, respirations 26.

Physical examination: Eyes, normal. Tongue, somewhat coated, otherwise negative. Face and neck negative. Pulse, frequency 95, of good volume and rhythm, and of medium tension, slight arteriosclerosis. Chest, bony and muscular development good, respiratory movements apparently normal. Heart and lungs, negative. Abdomen, a very slight degree of rigidity of the anterior muscles, some generalized pain but no localized tenderness. Liver, spleen, and kidneys, negative. Upper extremities, normal. Lower extremities, slightly painful to forced passive motion, the pain being in the ham string group of muscles. Reflexes, deep tendon reflexes, normal, no Babinski sign nor ankle clonus. The blood gave a leucocytosis of 12,800; differential, polynuclear, seventy-eight per cent.; small lymphocytes, seventeen per cent., large lymphocytes, five per cent. The urine showed neither albumin nor casts.

As patient gave no antecedent history that would in any way account for his condition, he was given the initial purge and placed on the salicylates with the supposition that his trouble was of a rheumatic nature. The following day, however, his condition became much worse. There were marked rigidity of the muscles of the anterior abdominal and thoracic walls, some stiffness in the lower jaw, neck, back, and thighs; severe pain in the back and abdominal muscles, radiating down the posterior part of the thighs. The temperature was 98.6° F.; pulse, 84; respirations, 26. Tetanus was now suspected, and on closely questioning the patient it was learned that about three weeks previously he had received a slight wound of the right foot by stepping on a rusty nail in a stable floor. He stated that he at once went home and applied carbolic acid to the wound and gave it no further thought.

On inspecting the right foot there was found a small scar, entirely healed, which had escaped notice during the physical examination; this was reopened and partly excised and the wound cauterized with pure carbolic acid followed by the application of alcohol. The salicylates were, of course, discontinued. He was given 1,500 units of antitetanic serum and this was repeated in the evening, sodium bromide, gr. xxx, and chloral hydrate, gr. xv, being given that night. The following morning, the third day of his hospital confinement, he was no better; he had slept little during the night. He was now placed on the following routine treatment: 3,000 units of antitetanic serum every four hours and sodium bromide, gr. xxx, with chloral hydrate, gr. xv, at meal times and nine p. m. Toward evening his condition became still worse, his back was

arched in opisthotonos and the muscles of his abdominal and anterior chest walls were firmly contracted and very rigid. The muscles of his lower jaw were only slightly contracted. At no time during the day had his temperature been above 100° F. Three attempts to do lumbar puncture were made, but, owing to the arched condition of his back, each failed. At eleven o'clock p. m. the assistant surgeon, Dr. Muller, was called and under chloroform anaesthesia the sciatic nerve was exposed at its exit from the pelvis and 3,000 units of antitetanic serum injected directly into the trunk of this nerve. The following morning patient was feeling some better; he had secured some rest during the night. Toward evening of the fourth day tetanic convulsions developed. These occurred at intervals of about one half hour and would last from thirty seconds to one minute. His face would assume an expression of great pain and he would utter a groan. The muscles of the back, neck, and legs would become tetanically contracted, increasing the degree of opisthotonos. Between the spasms the muscles involved were tonically contracted, the anterior muscles of the chest and abdomen being in a state of ironlike rigidity; the jaws, however, were not locked, nor was there any frothing at the mouth. Patient was perfectly conscious and begged for relief. His bromides and chloral were administered and morphine sulphate, gr. $\frac{3}{4}$, given hypodermically and, after having had six convulsions, he resumed his state of tonic rigidity and secured some rest. During the night, however, he slept very little.

On the fifth day, as he was showing signs of exhaustion, tincture of digitalis, m.xv, t.i.d. was added to his treatment. His condition remained about the same until the ninth day, when a semidelirium developed; on the eleventh day this became a joyous delirium. As his strength was fairly good it was thought that this was due to the antitoxine and its use was discontinued. On the tenth day a generalized rosular eruption appeared, becoming brighter the following day and lasting until the sixteenth day, when it began to disappear and was entirely gone by the eighteenth day, being followed by no desquamation.

Patient since admission had been on a milk diet, which he took without difficulty every two hours during the day time. At no time was his feeding interfered with by stiffness of the jaw. Up to the twelfth day the heart sounds were fairly good, when the first sound became markedly weaker, with accentuation of both aortic and pulmonic second sounds. The bromides were here stopped.

Muscular rigidity continued until the twenty-second day, when it began gradually to diminish, and on the twenty-fourth day the patient was sufficiently relaxed to admit being propped up in bed.

The delirium was at its height on the eighteenth day and then it resembled that of alcoholism minus the tremors, and it was here necessary to restrain him for twenty-four hours. Chloral hydrate was then discontinued.

On the twenty-third day, he began to appear lucid, and on the following morning was perfectly rational but in a very weakened condition. The pulse was soft and compressible, of small volume and arrhythmic. The heart action was much impaired and there was some dyspnea. Spirit of nitroglycerin, \mathfrak{m} , ii, t. i. d., was added to the digitalis, to lessen heart work, and in a few days the dyspnea disappeared and the heart action improved. Throughout the course of the disease the temperature ran a fairly regular course varying within three degrees. Subnormal, 97° F., on admission, it reached normal on the second day. Only twice did it reach or exceed 102° F.; on the fifth day it was 103.6° F., and on the seventh day 102° F. The bowels were kept regular with calomel and magnesium sulphate. The wound in the right buttock, the site of the sciatic injection, healed perfectly.

Patient was discharged as cured September 11th, the thirty-sixth day after admission to the hospital.

THIRTY-FOURTH AND PINE STREETS.

Gas from Abdominal Abscess.—When gas comes from an abscess which has been opened in some part of the abdomen, it must not be hastily assumed that the bowel is involved, as many of the abdominal suppurations are associated with gas forming bacteria. This is notably the case with subphrenic abscesses.—*American Journal of Surgery.*

PERFORATING ULCERS OF THE FEET IN TWO BROTHERS, CAUSED BY PRODUCTIVE AND OBLITERATIVE ENDARTERITIS.

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I am recording these cases because in so far as I have had access to the literature they are unique in that they concern two brothers.

CASE.—Family history: The father died at the age of seventy-four from chronic nephritis. He had always had good health and had led an active business life. The mother died at about the age of sixty. She had been insane for about ten years before her death.

To this union were born two sons, the subjects of this report. The parents separated after a few years. The cause of the separation was unknown. The genealogy of the father had been traced to the time of William the Conqueror and had shown a number of distinguished men. There seemed to have been no hereditary disease in the family. Of the mother's family we know nothing. After her separation from the father she remarried but had no children. The father remarried and had one son of good physical development and average intelligence. He is now about twenty-eight years of age and in good health.

Personal history: The older brother was forty-eight years of age, of good physical development but low mentality, bordering on imbecility, and since the death of his father was confined in a hospital for the insane. He had his feet frozen (?) when a boy, and at the age of twenty had his right great toe amputated at the metatarsophalangeal joint for a chronic ulcer on its plantar surface which had resisted all treatment and led to necrosis of the bone. Healing occurred promptly, and he had no more trouble until in 1903 or 1904, when the same condition developed on the ball of the left great toe. Although I instituted careful treatment early, the ulcer continued, necrosis of the bone of the terminal phalanx occurred, and I was obliged to amputate at the metatarsophalangeal joint. Primary union occurred except at a small point which opened down to the bone and resisted treatment for many weeks, but finally healed without necrosis of the bone developing. The stumps remained healed until about the first of May of this present year (1909), when the left one opened again.

During the course of the ulceration the epidermis became very much thickened around the fistulous opening. There was very little pain and very slight thin purulent discharge.

The younger brother was forty-six years old. He had always been physically strong and of rather unusual intelligence. His trouble began when he was seventeen years old as a sort of blood blister on the ball of the great toe, which healed after three months, leaving a callus in its place. This was in June, 1879. It recurred again in August, 1884, beginning as a dark spot imbedded in the old callus. It finally healed and remained so until in October, 1898. Up to this time, a period of ten years, the trouble was confined to the ball of the one great toe. In 1891 a similar blister appeared on the inner aspect of the metatarsophalangeal joint of the same foot. The physician who treated the resulting ulcer said: "It looked like senile gangrene, but could not be, as he was too young." It healed after a long time leaving a sort of bunion. In each instance the trouble began superficially and had never led to necrosis of the bone. It had been confined to the one foot and the patient was able to do all kinds of hard work.

By December, 1891, the old bunionlike callus had broken down and necrosis of the bone was well advanced, necessitating amputating of the toe and first metatarsal bone.

In 1892 the disease set in in the other foot, and in the patient's own words, "From this time on the destruction was rapid and effectual." Before 1896 the other great toe had been amputated and ulcers had formed on the ball of the feet at the metatarsophalangeal joints of the fourth toe. Bone necrosis now invariably occurred in the depths of the ulcer and at one time sinuses burrowed toward the heel. From 1892 to 1896 the ulcers remained constantly open except for a short time while in the hospital at St. Paul in 1896. All sorts of opinions, including syphilis, tuberculosis, and even leprosy had been given on the condition. Constitutional treatment of various kinds had been tried. Rest, anti-septic irrigations, curetments, iodoform injections, gauze packings, et cetera, had all proved ineffectual.

He came under my care in March, 1897. There were deep ulcers with bone necrosis in their depths with surrounding callus formation on the ball of each foot and under the metatarsophalangeal joints of the fourth toes of both feet. The necrosis seemed to have begun at the base of the first phalanx of the fourth toe, subsequently involving the joint and perforating the foot completely and opening on the dorsum. This condition developed within a few months after coming under my care. The necrotic bone was curetted out at frequent intervals, the sinuses were packed with iodoform gauze, large doses of potassium iodide were given for months with no improvement. A diagnosis of trophic ulcer was made, and after much hesitation amputation of the feet was recommended. I accordingly amputated both legs at the junction of the middle and lower third on April 28, 1898. He made a rapid recovery, gained about thirty pounds and by August was using artificial limbs. The stumps remained healed for about a year, but in the fall of 1899 necrosis of the bone of the stumps had reached such a state that amputation of two or three inches of the bone was necessary. This was done on November 9, and it was a year from the following March before they were completely healed. During this time the patient had one exceedingly severe attack of pain associated with "swelling of the cords in the legs and glands in the groins." It was after this subsided that the healing of the stumps occurred.

He now had no further trouble until the fall of 1907, when he was obliged to give up his work as bookkeeper and have some necrosed bone removed from the stumps. Although it has been a year and a half, one stump is still open and the patient has been unable to do any work during all this time.

During the almost thirty years of affliction the general health has remained excellent. It is said that on one occasion in 1895 sugar was recognized in the urine, but never before or since. The patient began to lose his hair at twenty-one, but this is a family characteristic, his father and brother having the same. He has never been bothered with cold feet, and there have been no fornications or abnormal sensations except in the region of the callus or ulcers where there has been some hypaesthesia. Pain has been a prominent symptom existing, however, only when the ulcers were forming or open. It would subside when they began healing. It was of a shooting, aching, and paroxysmal character. There has never been any nutritional disturbances in the fingers, such as glistening condition of the skin, loss of the nails, or Raynaud's disease. There was no nutritional disturbance in the nails of the toes, and no change of color in the feet during the paroxysms of pain.

At the time of amputation of the feet pulsation could be felt in the dorsalis pedis and the posterior tibial arteries. At the present time the femorals and popliteals pulsate normally. The recurrences in the stumps have sometimes affected both at the same time, but not often. Acquired syphilis is absolutely excluded in both of these cases.

Pathological report: Unfortunately the feet of the younger brother were allowed to spoil before I undertook this study. The toe amputated from the older brother was poorly preserved, but allowed the following details to be made out. As the clinical features of the two cases were alike I feel no hesitancy in assuming the pathology to have been identical. Transverse sections were made of the tissues of the first phalanx of the toe, including the periosteum. These were hardened in alcohol, mounted in celloidin, cut, and stained with hematoxylin, carmine and Weigert's elastic stains.

These sections showed some ten or twelve arteries large enough to be visible to the naked eye, the walls of which appeared somewhat thickened. On microscopical examination almost all of these showed the muscular tunic to be of normal thickness and contour. The line of demarcation between the latter and the intima was well preserved. The intima in almost all of these was very greatly thickened, being in some specimens as thick as the muscularis. This thickening was of a hyperplastic character and in some cases even in these larger vessels almost completely obliterated the lumen. It was quite uniform and did not show the eccentric or new moon shaped character so commonly observed in the ordinary arteriosclerosis. The elastica interna was generally well preserved, showing that the hyperplasia was limited to the intima. Although in none of these

larger vessels was the lumen completely obliterated, yet in many it was so compromised as to resemble very much the canalization so commonly observed in an obliterating thrombus. The veins did not appear to be affected. The sclerotic process seemed to be proportionately more marked in the smaller vessels, a number of which were completely occluded. In some places patulous and occluded vessels were in close proximity to each other. The adventitia and the vasa vasorum showed nothing abnormal.

In conclusion I wish to emphasize the importance of carefully considering vascular changes in all cases of perforating ulcer of the foot. I am sure this condition has not received the attention that it deserves and that the neurogenic theory has been unduly emphasized. In such nervous affections as tabes, syringomyelia, peripheral neuritis, etc., there is no doubt of its aetiology. The ulcers and trophic conditions observed in diabetes are almost always due to associated arteriosclerosis. The erythromelalgias which terminate in gangrene are most likely not neuritic entities but rather, like intermittent claudication, due to endarteritis productiva (obliterans). Either of these conditions as well as acrosyncope or acrocyanosis immediately suggest the possibility of an underlying sclerotic condition of the vessels. It seems possible that simultaneous sphygmographic records of the pulse in the two extremities might show differences of amplitude and conduction time when only one foot is affected.

The aetiology of our cases is unknown. The vascular changes are not those of syphilitic arteritis or the ordinary senile type. I have found nothing to indicate a thromboangitis such as Buerger has described. (Leo Buerger, M. D., Thromboangitis Obliterans: A Study of the Vascular Lesions Leading to Presenile Spontaneous Gangrene. *American Journal of the Medical Sciences*, October, 1908). We can readily conceive of a maternal *Grundlage*, but of this we have no positive evidence. It seems quite likely that there was a hereditary predisposition which became manifest in both cases in the period of adolescence when the growth functions were abating. Undoubtedly trauma is the important exciting factor. The results of amputation in my cases fully confirm the opinion of most authors that it should only be undertaken as a last resort.

PHYSIOLOGY AND THE SECOND LAW OF THERMODYNAMICS.

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(Concluded from page 556.)

The first law of thermodynamics has, according to Ostwald, "been proved with an exactness of 1:1000, even for physiological combustion." The second law (irreversible increase of entropy) would seem to be true of all spontaneous or metabolic processes in animals and plants, although Lord Kelvin and Helmholtz have doubted whether it is either necessary or sufficient for their production, while Maxwell, Boltzman, and Gibbs have asserted that it is possible for occasional small isolated violations of the second law (decreases of entropy) to occur in any real body. The most effective way of investi-

gating the relations of the second law to physiological processes would appear to be, as Cohen originally⁴ demonstrated, through the temperature coefficients, the central feature in the Gibbs-Helmholtz equation. There are two mathematical criteria for identifying chemical processes when other details are not specified. These are the reaction velocity constants and the temperature coefficients. If we wish to establish the fact that two chemical processes are identical we need only to ascertain that their temperature coefficients are identical. On the other hand, if the temperature coefficients differ sensibly from each other, we have mathematical certainty that the two processes are not the same. In this way Loeb has recently demonstrated that the chemical processes operative in producing segmentation and development of the ovum are totally different from those that cause death, because the temperature coefficients for duration of life and for rapidity of development in larval forms are not of the same order of magnitude.⁵ Again, Snyder has shown that since the temperature coefficients of purely physical processes are of a low order of magnitude, a study of the temperature coefficients of the velocity of nerve impulse indicates that the underlying cause of nerve conduction is not purely physical, since the velocity coefficients are of such magnitude that the phenomena could only be produced by chemical (thermodynamic) change.⁶ By collating the results of fifty-five series of experiments by twenty-six different physiologists, Snyder has shown⁷ that the temperature coefficients of all metabolic processes are of the order of magnitude of chemical changes, while those below the lower limit set for chemical changes indicate physiological activities due to physical or mechanical causes. From experiments showing that the curve of isotonic or isometric muscular contraction rises as the temperature falls, Bernstein concludes that the purely physical temperature coefficient of muscular energy ($\frac{d\psi}{dT}$) computed without reference to reaction velocity and upon the assumption that the muscular energy remains constant, is a negative quantity,⁸ as we should expect from the Gibbs-Helmholtz equation: $\psi - \epsilon = T \frac{d\psi}{dT} = -T\eta$.

As cell theory in physiology is giving way to the dynamic idea of the correlation, coordination, and integration of heterogeneous chemical systems made up of phases of matter in mass, so there are indications that pathology is passing out of the morphologic or descriptive stage and becoming a dynamic science. Descriptive or cellular pathology, as originally expounded by Virchow, has been of enormous consequence in the diagnosis of certain diseases, especially tumors, but of the causal complex at work in the production of disease it has told us but little. Pathological changes as seen under the microscope have been well called "post mortem" changes, for they represent the only end results of

a long series of chemical reactions, and this stable terminal product, as seen in the dead tissues, gives us no idea of the conditions obtaining when the same chemical systems were "alive" or in the labile state. As Taylor has said,⁹ the real question at issue is, not in what cells the trouble is located, but what chemical or dynamic changes were operative in producing it. If the living patient be regarded as an aggregate of heterogeneous systems made up of phases in relative equilibrium, then his diseases are conceivably a disturbance of such equilibria, and the relations of bacteria and protozoa to disease are really thermodynamic problems. As a case in point, our relative knowledge of diabetes and nephritis has been cited by Taylor, to show the extreme value of physical chemistry in experimental pathology. In nephritis we have known the site of the lesion from the first; in diabetes we have never known it. But the absence of any known lesion in diabetes has stimulated chemical investigation of its metabolism to this extent, that we now have some definite ideas as to the cause and proper treatment of the disease. Of the real causes of the albuminuria, dropsy, and uræmia in Bright's disease, we know next to nothing, because the problem has not been approached as a chemodynamic problem. Beginning with Tammann's studies of osmosis in the semipermeable membranes of the kidney,¹⁰ we are now in a position to understand what happens in the living kidney when it is inflamed. All that we know of toxines, antitoxines, hæmolysins, precipitins, and immunity in bacterial and protozoan diseases indicate that these are thermodynamic or qualitative problems, rather than problems in molecular dynamics and stereochemistry, which are quantitative. The Bordet-Wassermann reaction in the serodiagnosis of syphilis and other diseases goes far to show that the antigens, complements, and amboceptors involved are really aspects of chemical substances in the labile state and that the fixation and derivation of the complement are chemical processes. It has often been noticed that organisms in small ponds and rivers are of much smaller size than the same animals in larger streams and shallows. The experiments of Vernon and Calkins have shown conclusively that this is due to some excretions which the organisms throw out, which (in sufficient quantity) become factors of autolimitation in the development of the individual, just as the struggle for existence and for food are heterolimiting factors in the development of the species. This is the whole rationale of bacterial or protozoan disease and immunity. That the pathogenic bacillus can secrete substances that limit its own activity and development is conceivable thermodynamically if we regard the bacillus as a self contained or adiabatic system bounded by a semipermeable membrane. We know that pathogenic bacteria may, under certain conditions, become inactivated and nonpathogenic. It is well known among experimenters that very few of the pathogenic bacteria used in laboratories are really toxine producers, and of these, nearly all have been derived from one or two original cultural strains. The same thing is true of the

⁴Cohen. *Physical Chemistry*, New York, 1903, pp. 50 to 57.

⁵Loeb. *Pflüger's Archiv*, cxvii, p. 411, 1908.

⁶Snyder. *American Journal of Physiology*, xxii, p. 179, 1908.

⁷Snyder. *Ibidem*, 309. Snyder's first work on temperature coefficients was done in Loeb's laboratory. See the controversial papers in *Science*, n. s., xxvii, pp. 645 to 648 and pp. 795 to 797, 1908.

⁸Bernstein. *Pflüger's Archiv*, cxvii, p. 129, 1908; cxviii, p. 462.

⁹Taylor. *Proceedings of the Pathological Society of Philadelphia*, n. s., x, pp. 29 to 37, 1907.

¹⁰Tammann. *Zeitschrift für physiologische Chemie*, xx, p. 180, 1896. Mention should also be made of Carl Ludwig's work on renal osmosis (1842-9).

bovine tuberculous bacillus in human blood (*teste* Koch) or the case of the *Bacillenträger*, who transmit typhoid fever and other diseases while remaining immune themselves. In such media the micro-organisms are not strictly alive in the biological sense, since the biological criterion of life is that the organism should continue to undergo metabolism or dissipate its energy. Thermodynamically, it begins to die the moment it comes into being. But since the thermodynamic criterion of death is, "the phase of dissipated energy, "it is conceivable that the unfertilized ovum, the sessile hæmatococcus, the senile paramœcium, the encysted amœba, the inactivated pathogenic bacillus have all passed into a temporarily inoculated or adiabatic state, in which energy can neither go in nor out of them. That they are not true phases of dissipated energy, is indicated by the fact that their vital activities begin afresh when they are subjected to the catalytic influence of external chemical substances which stimulate their surface energies, or when they themselves produce a similar effect upon surrounding media. How thermodynamically alive the tubercle bacillus can be under such conditions may be judged from the byword cited by Cohnheim, as the result of extensive post mortem experiences: *Jedermann hat am Ende ein bisschen Tuberkulose*. In like manner, the venom of the cobra is thermodynamically inactive in relation to the poison gland or other parts of the serpent itself, and some venoms can be ingested into the human stomach with impunity, but whenever cobra venom is injected into the blood channels of a warm blooded animal, it will rapidly reduce the living body to a definite phase of dissipated energy, as far as its vital activity ("free energy") is concerned, and this thermodynamic process is essentially catalytic in that the vast extent of destruction of the red blood corpuscles or hæmolytic is out of all proportion to the quantity of the agent employed. In cases of sudden death following injections of blood serum, the anaphylaxis, which the Germans call *Allergia* (altered energy) is conceivably due to the catalytic effect of previous over-sensitization of the tissues, whether death be due to the effect of a new extraneous substance, or whether (in the view of Rosenau and Anderson) the substance which sensitizes the tissues in the first instance and that which subsequently poisons them be identical. The ferments and enzymes of living animal and vegetable bodies are mostly reversible colloids; that is, they can decompose a complex substance into its components or, by chemical synthesis, integrate the components back into the original substance. Physiological and pathological processes are full of these apparently reversible actions in which causes and effects seem so correlated that cause may become effect and effect cause. Here as in the steam engine, the automatic conditions governing the dynamics of pseudoreversible or modified Carnot cycles, are in full swing. As examples of such cycles, mechanical or chemical, Hurry instances, among others":

1. Hæmogenesis and hæmolytic, or the regulation of the adjustment between the birth and destruction of the blood corpuscles, chemotaxis producing a physiological polycythæmia or oligocythæmia, according to requirements.

2. The mechanism of respiration, which depends on the reciprocal relation existing between the condition of the blood and the activity of the respiratory centre, the latter increasing and decreasing with the rise and fall of carbon dioxide tension in the blood.

3. Arterial tonus, which is maintained by the fact that the rate of the heart's beat is in inverse ratio to the vasomotor constriction, the rate of the pulse decreasing or increasing with the rise and fall of blood pressure.

In pathology these cycles are called "vicious circles," and, as Hurry points out, their number is greater than we might suppose. Following this argument, we may indicate a few of these determinisms graphically, as follows:

Bronchitis \longleftrightarrow emphysema \longleftrightarrow bronchitis.
Anæmia \longleftrightarrow persistent hæmorrhage \longleftrightarrow pernicious anæmia.
Gastric catarrh \longleftrightarrow portal congestion \longleftrightarrow gastric catarrh.
Bronchial congestion \longleftrightarrow coughing \longleftrightarrow bronchial congestion.
Eyestrain \longleftrightarrow neurotic disorders \longleftrightarrow eyestrain.
Polydipsia in diabetes \longleftrightarrow dilution of blood \longleftrightarrow increased polyuria and glycosuria \longleftrightarrow increased concentration of blood \longleftrightarrow thirst and polydipsia.
Increase of sugar in diabetes \longleftrightarrow diminished tolerance of carbohydrates \longleftrightarrow consumption of carbohydrates \longleftrightarrow increased excretion of sugar.
Incompetency of heart \longleftrightarrow increased impurity of blood \longleftrightarrow impaired nutrition of heart \longleftrightarrow increased cardiac incompetency.
High fever \longleftrightarrow depression of healthy heart \longleftrightarrow inadequate blood supply to myocardium \longleftrightarrow increased enfeeblement of heart.

It must not be supposed that any of the above are reversible cycles in the strict mathematical sense, for this implies that in reversing backwards from final to initial stage every process in the cycle would be retraced, step by step, in the opposite or negative direction, like a train of cars returning over the same track from destination B to a starting point A. Along such a return path entropy would decrease, in other words, increase in the negative direction, which does not obtain in nature. If we could trace out all the intermediate stages of the above processes, we should probably find that they are in reality true irreversible cycles, the events moving circlewise and always coming back to the initial stage or starting point, but coming back to it by a different path, and always moving irreversibly in one definite direction, never in the opposite one. Suppose one diameter of such a circle to shorten continually, then it would become the conjugate diameter of an ever flattening ellipse, and, as the latter would gradually tend to become a straight line, so the irreversible cycle would tend towards a true reversible cycle as its limit. In other words, a reversible cycle is the extreme or limiting case of an irreversible cycle that moves circlewise in one definite direction. So the Greeks conceived even of eternity or infinity as a continuous series of phenomena moving circlewise, so that a first cause is no more possible than a last effect. A theorem of Newcomb's asserts that if a straight line be infinitely prolonged in a definite direction, an in-

definite set of perpendiculars erected along such a line would ultimately be found to point in opposite directions, indicating curvature in Euclidian space. Continual motion along such a line, say under the conditions of Newton's first law, would by Newcomb's theorem, probably be in the nature of an irreversible cycle, at least for beings imprisoned in tridimensional space, and noncyclic irreversibility would seem, theoretically at least, to be just as impossible in a world of three dimensions as a mathematically reversible cycle is in actual practice. Philosophically then we may regard a circular irreversible cycle as one finite mode of the reversible cycle which it approaches mathematically as its limit. If we conceive of causation in the dynamic or reversible sense of Newton's Third Law (*causa æquat effectus*), we have the possibility of cause and effect becoming interchangeable. To Ernst Mach is due the modern conception that causality is an assemblage of initial conditions, predisposing or exciting, which must all of them be present if any given phenomenon is to occur and recur in the same definite way. We express this mathematically by saying that the effect is a function of the causal complex, or $x = f(a, b, c, d, \dots)$, so that, when any phase of the latter changes, the effect produced must differ in degree, if not in kind, from the original one. The ideally reversible cycles of Carnot's theory require the nonfrictionless (and therefore nonthermodynamic) systems of pure mechanics; that is, they are purely fictitious processes, existing only in the minds of mathematicians and having no place in the world of actuality. "Even to think of it," said Lord Kelvin, "we must imagine men with conscious knowledge of the future, but no memory of the past, growing backwards and becoming again unborn, and plants growing downwards into the seeds from which they sprang."² The gruesome consequences of such "protoplasmic reversions" have been traced out in clever bits of imaginative fiction, like the *House of Souls*, and we occasionally see something of the kind in the fetal monstrosities and other regressive abnormalities of pathology, but fortunately for mankind, the order of actual thermodynamic events is always irreversible, depending in each case upon definite initial conditions which are normally such that human beings never reverse backwards through the lower forms of life into the initial protoplasm from which they came. The general law, as Minot has recently stated it,³ is, that, cytormorphosis is always in one direction, and differentiated protoplasm cannot reverse backward to the undifferentiated condition. So the order of thermodynamic events in the universe, as known to us, is always in one definite direction, but it is perfectly possible, philosophically, to conceive of another universe in which such events would move in the opposite sequence, provided we reverse the scale of time by which the order of irreversible events is measured. For time, as Carlyle said to Emerson, has only a relative existence, and is measured by man's own arbitrary standards. Many chemical reactions are imperfectly reversible in that, after coming to equilibrium, a certain percentage of the substances formed may, after a definite or indefinite lapse of

time, change, through "dissociation" back to the initial substances. But there are some reactions, especially those with organic substances, that stop short at a certain point and balk further attempts to make them move forward or backward, owing to the mysterious forces known as "passive resistance to change," which, as Gibbs pointed out, do not, like friction or viscosity, merely retard chemical action, but actually prevent it. The thermostability of the amboceptor in infectious processes or the so called "functional inertia" of living tissues would be good examples of such passive resistance, permanent or temporary. Attempts to explain these passive conditions by phrases like "false equilibria," "pseudo-reversible reactions," or "possible reversibility in infinite time," have not afforded much comfort to chemists. We know that catalytic forces can make a chemical reaction definitely fast or slow, as in the rapid fermentative changes of disease or the mineral changes at low temperatures in geological time; but of catalysis itself, we know nothing beyond the fact that it modifies reaction velocities and cannot affect a substance which has already attained to a phase of dissipated energy. Closely bound up with the "intermediate reactions" which catalysis sets going in such chemical systems as have not become phases of dissipated energy is the rôle of impurities in nature. It is known that many chemical changes are due in the last analysis to some slight traces of impurity in the working substances, and the refinements of physical chemistry have verified the theorem of Gibbs, that chemical purity is an approximation only, since the removal of the last traces of impurity from any substance would demand infinite expenditure of available energy.⁴ A mixture of sulphur and phosphorus, modern chemists tell us, is chemically impure, because it is chemically heterogeneous, i. e., made up of different kinds of atoms, but a mixture of allotropic forms of the same substance, as red and white phosphorus is physically impure, as being physically heterogeneous—made up of different kinds of molecules. From this point of view, ebullition, for instance, is only possible because the bubbles of the boiling liquid are due to gaseous impurities. De Heen⁵ has brought purified amylene from its ordinary boiling point (18°C.) up to 170°C. without any ebullition, and Lord Rayleigh has demonstrated that the durable foams and liquid films, which are so important in biology, cannot be formed by liquids that are absolutely pure. Physical as well as chemical purity is therefore, as Whetham puts it, "more often a pious dream than an accomplished fact," and it would appear that if substances existed and remained absolutely pure, there would be an end of physical, chemical, and biological phenomena.

There is one class of physiological and pathological happenings in which Maxwell's "small isolated violations of the second law" might seem possible, namely, those relating to the brain and nervous system. One of Maxwell's demons, according to Lord Kelvin,⁶ might make one half of a piece of metal glowing hot, while the other half remained icy cold, through his power to utilize dissipated energy and

²Lord Kelvin. *Popular Lectures*, ii, p. 465.

³M. S. Minot. *The Problem of Age, Sex, and Death*, New York, 1908.

⁴Gibbs. *Transactions of the Connecticut Academy of Arts and Sciences*, iii, pp. 104 to 107.

⁵P. De Heen. Du rôle des impuretés dans la nature. *Académie royale de Belgique. Bulletin de la classe de sciences*, 1907, pp. 859-874.

⁶Lord Kelvin. *Nature*, 1879, p. 176.

make heat flow from a colder to a warmer body. Within the rigid irreversibility and determinism of our actual existence, our minds are free to imagine such reversible processes; and phenomena, like gangrene, the vasomotor and trophic neuroses, aphasia, the various forms of paralysis, insanity, almost suggest some thermodynamic reversion of the kind Maxwell conceived of. Unfortunately, we know next to nothing of the actual causation of nervous diseases, still less of insanity, which is concerned with the most difficult of all problems—the relation of mind to matter or the real nature of consciousness. The materialistic hypothesis, as usually stated, asserts that mind is simply a function of the matter of the brain and becomes zero when the latter is annulled. But this is simply a gratuitous anthropomorphism based on the assumption that human mind is the only kind of mind. As Leibnitz insisted long ago, even if we could see the brain as a machine made up of vibrations and could understand its every motion, this would not tell us the slightest thing about the genesis of thought or the nature of consciousness. It is true that the Weber-Fechner law can be derived by interpolation from the second law of thermodynamics, and Dr. Améline has recently essayed a "théorie mécanique des phénomènes cérébraux" and even had the hardihood to formulate an "équation des psychoses,"¹⁷⁷ turning upon Janet's theorem that perception of time becomes less and less exact the more the mind becomes impaired through age or disease. But empirical formulæ of this kind are not likely to shed much light upon normal and abnormal psychology. Equally barren for biological speculation are the current modes of physical theory which declare heat to be a variation, electricity a rotation, light an undulation, sound or x rays a pulsation, matter a gyrotation, etc. "Now and then," says Loeb, "an author still makes the statement that 'life is motion,' but, as Driesch has pointed out, this statement is about as valuable as the information that the philosopher Kant was a vertebrate."¹⁷⁸ In other words, to define life narrowly as "a series of impulses in a colloidal electrolytic medium" is only a trite way of setting aside the possibility of deeper thought upon the subject. Yet the dogma of the spiritualist is even less tenable for scientific investigation since it goes back to the improbable and unprovable hypothesis of Descartes that mind and matter can actually exist apart from each other as parallels. Spinoza asserted that neither can exist apart from the other, indeed, he sometimes asserts their ultimate identity as different modes of the same eternal substance.¹⁷⁹ But Spinoza went further than this, and herein lies the source of his philosophical greatness, when he asserted that of a possibly infinite number of manifestations of being or substance, the human mind

can apprehend only two, viz., thought and extension; in other words, substance extended in three dimensions and mind itself. "All the changes which have come over the idea of substance," says Häckel, "are reduced on a logical analysis to this supreme thought of Spinoza's; with Goethe, I take it to be the loftiest, profoundest and truest thought of all ages."¹⁸⁰ Spinoza compared man's position in the infinite universe to the case of a small worm living in the blood, which might have some vague perception of the relation of the minute portions of the blood to each other, but could have no definite idea of the relation of the blood to the body, or of the body to the external world, and so on, *ad infinitum*.¹⁸¹ It will be seen that Spinoza's view not only marks out the limitations of our mind and senses, but demonstrates the utter futility of trying to prove that either mind or matter are the cause or the effect of the other. Our mind can conceive of *n* fold space, but our senses cannot apprehend it, yet all external phenomena are reducible to thought and sensation, so that our knowledge of externalities is necessarily an approximation only. This is what Kant meant when he said that all our intuitions are only approximate representations of phenomena, the real nature of which we do not know. These phenomena are due to the impact of an unknown, inaccessible noumenon upon senses that we know to be imperfect and minds that we know to be finite. With the data of comparative and infantile psychology we can trace the growth of such minds from the first nervous shock in an organized creature through the group of tropisms called instinct, through subconscious intelligence or "automatic animal awareness" up to apperception and consciousness. This reduces the dogma of *a priori* knowledge to a vanishing fraction, just as anthropology has destroyed the other Kantian illusion of the "categorical imperative" by demonstrating that in different phases of space and time, murder, rape, theft, adultery have been religious observances, as they are to us punishable crimes. But the problem of consciousness remains very much what Kant and Spinoza left it, and few are so well entitled to be enrolled among the high priests of science, true interpreters of the ways of nature to man, as these two greatest of metaphysicians.

Chemistry has been recently defined by Bancroft as the science of "all the properties and changes of matter dependent on the nature of the substances concerned," and this definition, he goes on to show, is elastic enough to include under chemistry all of physics (excepting pure mechanics and the laws of gravitation), engineering, geology and all biological sciences, including medicine. But in creating the science of chemodynamics, which treats of the delicate conditions governing the adjustment of equilibria of systems in the labile or metastable state, Gibbs converted theoretical chemistry into thermodynamics, which is itself a branch of mechanics. Mendeleeff predicted that the mechanics of chemical affinity would ultimately be reduced to Newton's third law of motion. This Gibbs had already accomplished in his theory of chemical equilibrium, indeed, the philosophy of reversible reactions had been implicit from the first in the equations which

¹⁷⁷Améline, *Journal de psychologie normale et pathologique*, Paris, 8, 5, 1906, 1907.

¹⁷⁸Loeb, *Stimmen aus Natur und Materie*, New York, 1906, p. 24.

¹⁷⁹That Spinoza has not in the ultimate identity of mind and substance, extension and matter (considering extension, witness the following remarks, *Quoniam ab infinito intellectu percipitur tantummodo, extensionemque constitutum, ut ens quod autem tantum substantiam pertinet; et consequenter quod substantia est ens, et quod ens est substantia, ens quicquidque non substantia que est ab eo, cum se ab alio non comprehendit. Sic etiam, modus extensionis et idea illius modi uno eodemque est res, sed duobus modis expressa, quod quidem Hebraeorum quædam per nebulam videtur videretur, qui scilicet statuunt, Deum, Dei intellectum resque ab ipso intellectus unum et idem esse. Ethics, Part II, Prop. VII, Schol.*

¹⁸⁰Häckel, *The Riddle of the Universe*, New York, 1900, p. 216.

¹⁸¹Spinoza, *Epistole*, xv.

the chemist employs to represent the dynamic phenomena of his science. Applications of the "phase rule" of Gibbs have demonstrated that substances are capable of existing in many metastable modes that earlier chemists have never dreamed of. If upon his solid thermodynamic diagrams or relief maps, we employ as coordinates to represent a chemical substance, the variables *entropy* and *energy* which localize the distribution of the substance in space, and its *volume* (as expressing its mass), all stable states of the substance will be represented by a "surface of dissipated energy" consisting of the locus of all points at which the energy is a minimum for given volume and energy. But if we attempt to represent systems of more than one component upon this "volume-entropy-energy surface," it will be found that a model in three dimensions no longer suffices, while systems of more than three components cannot be represented by any tridimensional model whatever." Gibbs foresaw this difficulty and got around it, as far as the algebraic part of his theory was concerned, by extending his equations to n dimensions. But if a tridimensional model is insufficient to represent a four component system in space, we would appear to have physical as well as metaphysical evidence that such a problem as the ultimate character of labile or metastable protoplasm is, as yet, beyond our ken. If the element copper can be the parent of tellurium, and if radium is capable of giving birth to a succession of new elements, some of which live only a few seconds, we can see all sorts of possibilities for the chemical constituents of labile living protoplasm. "Dimly we begin to discern vague chemical forms of infinite intricacy where proteid and carbohydrate and hydrocarbon are linked together in loose associations, the partners swaying in and out in endless rhythmical figures, each dissolution followed by a new integration."³² But we should be far from concluding from this that protoplasm is a harmonious equipotential machine working in four or more dimensions of space. It has been well said that while physical induction and laboratory experimentation break down on the imperceptible aspects of nature, the mathematical methods which enable us to get at the latter, break down themselves on nature's subtle or unimagined aspects.³³ The advance of modern science has shown that illuminative knowledge usually comes from some wholly unexpected source. Like Saul, the son of Kish, the laboratory worker has not always found the thing he originally set out to find. The philosopher's stone seems but a vulgar quest compared with the discovery of radium, and the insight it has given us into transmutations of substance or other forms of energy, and we are reminded that the square root of minus one was the divining rod that revealed so many new aspects of the transmission and utilization of electric power, in particular, wireless telegraphy. Maxwell little dreamed of these things in formulating his differential equations for the electromagnetic theory of light. In mediæval times their mere investigation would have been regarded as impious and their discovery a capital crime, and something

of this *odium theologicum* survives in the curious protest of Lord Kelvin's last days: "Do not imagine that by any hocus pocus of electricity and viscous fluids you can make a living cell. Anything that crystallizes can be made by the chemist. Nothing approaching a living cell has been made." We can sympathize with the real intention or implication of Lord Kelvin's warning, if he meant by it that all science becomes *graue Theorie* when it attempts to reduce the universe to a pocket formula, but we should not, on this account, judge scientific theories by sentimental or ethical standards, and over against this *ipse dixit* of the mathematician, we may set the more temperate statement of a trained biologist like Loeb: "We can only consider the problem of abiogenesis solved when the artificially produced substance is capable of development, growth and reproduction. It is not sufficient for this purpose to make proteins synthetically, or to produce in gelatine or other colloidal material round granules which have an external resemblance to living cells." Whatever the real goal of research may be, it may turn out in the end that the hypothetical one was as delusive and practically useless, as was the Northwest Passage in comparison with the discovery of America. Our notion of the true solution of a problem has become so much more complex than formerly that, as Poincaré justly remarks: "*Les problèmes insolubles sont devenus les plus intéressants de tous.*"

The importance of the thermodynamic point of view in chemistry is sufficiently indicated by the enormous growth of modern physical chemistry, and its advantages and limitations in laboratory work have been well summed up by Bancroft: "Other things being equal, the man who can handle his thermodynamics will beat the man who cannot, but in order to have this take place, thermodynamics must be considered as an instrument of research and not as a branch of metaphysics." The mathematical theory, as giving a deeper insight into the more imperceptible aspects of nature, superinduces a metaphysical concept of the universe; on the other hand, it is inductive methods that have unearthed most of the new facts in the laboratory, but these often tend again to produce a narrow and microcosmic materialism. Nothing illustrates the limitations of the human mind more significantly than the fact that the most striking advances in recent science could only have been made by applying both methods. Apart from its metaphysical interests, the scope of thermodynamics is to some extent vaster than that of the history of the human race, for the second law is the *Leitmotif* of the thermodynamic drama of cosmic existence in which, according to the predictions of Kelvin and Boltzmann, the earth must gradually cool down to a dark star, while solar and sidereal systems collide and resolve themselves into nebulae and nebulae condense back into systems. Here, as Haeckel has finely said: "Humanity is but a transitory phase of the evolution of eternal substance, a particular phenomenal form of matter and energy, the true position of which we soon perceive when we set it against the background of infinite space and eternal time." Again, in the most refined physical investigations, as black-body radiation, astrophysics, or the kinetic

³²See Bryan, *Thermodynamics*, Leipzig, 1907, pp. 179 to 185.

³³Ch. E. Allen in *Intercolonial Medical Journal of Australasia*, Melbourne, xiii, p. 316, 1908.

³⁴Lectures on the Method of Science, Oxford, 1905, p. 12.

theory of gases, thermodynamic reasoning is the final court of appeal. We may therefore expect thermodynamics to become more and more useful as a guide in research and a check upon theory in the field of biology. For the inexorable logic of an impersonal, mathematical science, does but emphasize the "vanity of dogmatizing," and so enables us to keep the balance true between what is actual and what is theoretical, between what is proven and what is probable, between what man, with his limited intelligence and defective sense organs, is capable of knowing, and the great ocean of the unknown or unknowable which lies outside him.

ARMY MEDICAL MUSEUM.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XC.—How do you treat typhoid fever? (Closed September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

XCI.—What are your views on the open air treatment of pneumonia? (Answers due not later than November 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXIX has been awarded to Dr. N. E. Sartorius, of Pocomoke City, Md., whose article appears below.

PRIZE QUESTION LXXXIX

THE PREVENTION OF RENAL COLIC.

By N. E. SARTORIUS,
Pocomoke City, Md.

The life of my patient has already been in jeopardy with at least one attack of renal colic, with its agonizing pain, and it is "up to me" to prevent a recurrence of this excruciating and dangerous trouble that may land my patient in eternity.

Before giving professional advice, and outlining a course of treatment, I acquaint myself with the previous attack. First, I try to find out if the patient passed a stone at that time, if so, and he has preserved the same, an examination of it helps me very materially to outline the proper line of treatment—since the treatment depends upon whether the colic was due to uric acid, oxalic, or phosphatic concretions.

Whether he did or did not pass a stone, I endeavor to have an x-ray picture taken, by a man

competent in radiography, and also make an analysis of the urine. If the picture discloses a stone large enough, or so placed that it cannot be expelled, I advise an operation, and an immediate operation, if the patient is suffering from anuria or has much pus in his urine. After the operation I prescribe a prophylactic course of treatment aimed at the particular kind of diathesis present. If, on the other hand, the skiagraph shows a very small stone and there are no alarming symptoms I depend upon medical treatment to prevent a recurrence of attack.

If an examination of the urine shows that the concentration is of uric acid, I adopt an alkali and solvent treatment, that is, by the use of antiseptic solvent agents such as hexamethylenamine (urotropin), grains vii to x dissolved in water, t. i. d.; or diethylenediamine (piperazine), grains v t. i. d., for a longer or shorter period. Thus I try to dissolve or at least smooth off the rough edges of these small calculi, so that they may easily pass on and give little or no trouble. At the same time I give the alkalies, preferably potassium citrate or acetate, 30 to 60 grains, in a glass of water, every three or four hours, to prevent the formation of other stones, and if during this time the density of the urine is high I have my patient drink plenty of water to prevent precipitation of crystals. Pure or mineral waters are best, as they are more solvent in the system than are hard waters. If the continuation of the alkalies for several months produces any anæmia, as it sometimes does, I give some preparations of iron. As a diet best for the uric acid cases, I allow fish, eggs, milk in moderation, fruits, vegetables, cereals and bread—rye bread being especially good, and some poultry and meat (since it is doubtful that uric acid calculi depend upon nitrogenous waste for their formation).

If my urinary analysis discloses oxalates I vary my medication, giving a course of nitrohydrochloric acid (dilute) and nerve tonics.

If the analysis shows an alkaline urine and the data indicate phosphatic stone I try to search out the causative local condition for treatment, since this is a secondary condition. By way of medical treatment I try acidulated drinks and prescribe a diet composed largely of meats and nitrogenous foods.

Regardless of the kind of calculus, I always look for any existing gastrointestinal trouble, as I am inclined to believe that such is the most frequent primary causative agent of calculi and kidney colic.

I also consider it very important to promote elimination by way of the bowels and skin; hence I increase intestinal secretion and keep the liver from becoming torpid by morning doses of sodium phosphate, and the skin active by regular baths, and I demand that my patients take regular and sufficient exercise in the open air, in order to better oxygenate the blood and tissues so that they may the more completely oxidize the food material consumed.

Dr. John B. Talmadge, of New York, says:

In preventing the recurrence of renal colic there are two methods which present themselves: One, surgical, the other, dietetic and medicinal.

In the former procedure we are guided by the x-ray photograph and ureteral catheter. If the shadows are distinct operation may be safely advised:

if, however, as is often the case, there is no distinct shadow or markings, and our cystoscopic and ureteral examination is not positive, then we must fall back upon the dietetic and medicinal treatment.

As regards this method of procedure, the causal indication is met by keeping at as low a percentage as possible the formation within the body of substances that lead to stone, and their accumulation in the kidneys, by measures intended to regulate metabolism; and when stones are present by dissolving the concretions. Because of the variable nature of the stone formation there are a variety of methods to be employed to influence metabolism, and bring about the solution of the stone. The remaining indication may be met in all cases by stimulating diuresis and flushing out the kidneys.

Stones are primary and secondary in variety. The primary stones are composed of uric acid, urate of sodium and ammonium, oxalate and carbonate of calcium, and cystine and xanthin. Secondary stones are due as a rule to some infectious process in the kidney pelvis, and are composed of calcium phosphate. This, indeed, often acts as a secondary covering to a primary stone.

In the case of uric acid stones, patients should not ingest foods containing a large quantity of nuclein, especially liver, kidney, thymus, fish roe, caviar, smoked or seasoned meats, pickled stuffs, nor those foods tending to the formation of uric acid, viz.: meat extracts, strong tea and coffee, asparagus, etc. Sugars, fats, and farinaceous foods, together with all alcoholic beverages, are injurious. The diet should consist mainly, however, of meats which have been boiled to free them from the meat extractives, plenty of milk, together with eggs, bread, and butter in small amounts, mild cheeses, jellies made with gelatin, and fruits in abundance, as the acids in these are not excreted as such by the kidneys. Beyond the foregoing no hard and fast rules can be followed in making up a diet list. The general condition of the patient, the state of the digestive organs, and the mode of life must be taken into consideration.

In conjunction with the foregoing dietary, plenty of open air exercise must be systematically taken, also warm baths, particularly the mineral baths, which increase diuresis and diminish urinary acidity and favorably influence general metabolism. German physicians also assert that the prolonged use of warm mineral water bathing reduces the production of uric acid.

To increase the dissolving power of the urine for uric acid, alkalis in the form of the carbonates or salts of the vegetable acids (citrates and acetates), alkaline earths, and lithium salts are employed. These are to be taken with plenty of water, as the active flushing of the kidneys is as important as rendering the urine alkaline and dissolving the concretions. The simple carbonated waters in this respect answer all purposes.

Where a gouty diathesis, an arteriosclerosis, or a bronchial affection complicates the nephrolithiasis, Carlsbad and Kissingen are found to be useful. As soon as the urine has been strongly alkaline for a short period, the alkaline salts and waters must be temporarily stopped or a too alkaline urine will precipitate the phosphates and these will turn the primary into a secondary calculus.

As to the medicines proper, diethylenediamine (piperazine) in the doses of 15 to 20 grains well dissolved in seltzer water and taken throughout the day, also hexamethylenamine (urotropin), 15 to 20 grains taken in one daily dose in plenty of water, are two as good solvents, so called, as can be given. The latter, while not inhibiting the acid reaction of the urine, prevents ammoniacal fermentation and renders the dissolving power of the urine for uric acid very much greater.

For oxalate calculi the same dietetic and medicinal treatment applies as for oxaluria. First, prohibit all articles of diet that contain a great deal of oxalic acid, such as spinach, rhubarb, beans, beets, tea, cocoa, gelatin, and all foods containing any great quantity of calcium (milk, eggs, vegetables of the cabbage family). Second, recommend foods presenting a high percentage of magnesium, because magnesium oxalate is easily soluble, and thus the oxalic acid is easily excreted (viz.: meat, fish, bread, farinaceous foods, apples). Kissingen and Hunyadi water both contain a large proportion of magnesium and are to be used accordingly.

Phosphatic stones are generally secondary, and the original alkaline urine or pyelitis, etc., must be treated in the first place. Flush out the kidneys with water rich in carbonic acid. Give a diet rich in albuminous foods and organic acids. The use of dilute hydrochloric acid aids in the excretion of the carbonates in the urine, as organic acids in the system are split up into water and carbon dioxide, and this latter readily forms carbonates. If the urine contains too many earthy salts give a diet poor in calcium and magnesium. To reinforce the acidity of the urine hexamethylenamine (urotropin), camphoric acid, and potassium chlorate may be used.

Xanthin stones require the same treatment as the uric acid variety, as their composition and reactions are so nearly alike.

Cystine calculi point to some abnormality in the digestive system. Here the digestive organs must be thoroughly tested, and when a deficiency is found this must be corrected. Then the flushing out of the kidneys with carbonated spring water will meet all requirements.

(To be concluded.)

Correspondence.

LETTER FROM LONDON.

The Hospitals of London as Teaching Institutions.—Requirements for the License to Practise in the British Empire.—Quackery and Unlicensed Practice.—The Late Sir Stephen Mackenzie and the Late Dr. Crocker.

LONDON, September 8, 1909.

During the month of September the medical journals in this country publish what are called students' numbers, and these give various details as to professional studies in England and abroad and an account of the various openings for medical men after qualification. The chief centres of professional study in the United Kingdom are London and Edinburgh. In London the intending student has the

choice of eleven large medical schools attached to the leading hospitals. It is sometimes a matter of difficulty to arrive at a decision as to which hospital to join. Usually that school is chosen which is most accessible, or has certain associations, or is most suitable for securing a particular qualification, or gives most facilities for any special study. Taking the metropolitan teaching hospitals in the order of their respective sizes, the London Hospital is easily first, for, although St. Bartholomew's, St. Thomas's, and Guy's Hospitals are each of nearly twice the size of any of the smaller teaching hospitals, the London is nearly half as big again as any of these three. At the present time the student who joins the London Hospital will receive his scientific training in the largest medical college in the country, and will gain his practical experience in an institution that treats nearly a quarter of a million out patients and over 14,000 in patients yearly. From the point of view of the man who intends to devote his life to medical investigation rather than to practice, the London Hospital offers exceptional facilities owing to the fact that its authorities have lately become the trustees of a large sum of money, the income of which is being entirely devoted to medical research. At the London Hospital there are over 900 beds in constant use.

St. Bartholomew's Hospital was founded in 1123 by Rahere, and has a truly remarkable record as the great hospital of the "City" of London and has for centuries enjoyed the confidence and support of the city authorities and magnates. At the present time the student who decides to become a "Bart's man" will have the advantage of the great experience to be gained in an institution that can accommodate 674 in patients and registers over 125,000 out patients annually. The new out patient department at St. Bartholomew's is one of the finest in the kingdom, and the medical school attached to it has recently been improved by the opening of the new and well equipped pathological department.

Founded by Thomas Guy in 1721, with accommodation for 400 patients, Guy's Hospital at the present time contains just over 600 beds and has developed in connection with it a first class medical school with a worldwide reputation. Owing to its situation, the hospital is in touch with a densely populated district in which the majority of the inhabitants are dependent upon it for help in time of sickness. There is a large and up to date residential college in connection with Guy's which offers certain advantages to students wishing to reside on the hospital premises.

St. Thomas's Hospital, which, with the exception of St. Bartholomew's, is our oldest hospital, is practically of the same size as Guy's, having 600 beds, and possesses a medical school which is one of the four best known medical schools in the world. This institution also offers a very large field for medical and surgical experience, the out patient attendance last year numbering over 226,000. The position of St. Thomas's enables it to carry on a great work among the poor of the populous southeast district, and is convenient for students living on the south side of the river.

The Middlesex, St. Mary's, University College,

King's College, and Charing Cross Hospitals each maintain individual schools, while the small educational establishments at St. George's and Westminster Hospitals are reserved for practical work and "final" subjects only, the preliminary scientific training of students joining these two schools being conducted at King's College.

University College Hospital, with 300 beds, is fortunate in being possessed of the magnificent medical school built by Sir Donald Currie a few years ago, while Middlesex Hospital is famed for its prominence as a centre of cancer research, and the medical school attached to it has produced many men who have become celebrated in this connection. It must not be thought, however, that this hospital is one sided in its teaching, for it contains some 300 beds devoted to general medicine and surgery. It can, moreover, claim the distinction that a member of its consulting staff, Sir Douglas Powell, M. D., occupies the presidential chair of the Royal College of Physicians. At the present time with regard to King's College Hospital, which is about to be removed to a new site at Denmark Hill, where the foundation of the new buildings was recently laid, students joining, now or in future, will receive their first two or three years' training in the elementary medical sciences at King's College in the Strand, as hitherto, but after this they will complete their work and gain their practical experience of medical and surgical work at the new hospital, which will be more up to date and on a much larger scale than the present institution. Ladies who wish to take a medical qualification in London find a special hospital which caters for their requirements. This is the Royal Free Hospital, which has for some years been associated with the London School of Medicine for Women on Hunter Street. The Royal Free Hospital contains 165 beds, and with its extensive out patient connection offers every opportunity for the students of the medical school attached to it to become proficient in all branches of medical science. The posts of house physician and house surgeon, besides several other resident appointments at this hospital, are open to lady students after qualification.

The subject of quackery has been engaging the attention of the General Medical Council, and an important volume has just been issued giving a great deal of detailed information with regard to the laws regulating medical practice in other countries. Information has been collected from 108 countries, and in no fewer than eighty-two of these practice by unqualified persons is penalized by fine or imprisonment. In only twelve do conditions similar to those in the United Kingdom exist. This comparison brings clearly to our view how much behindhand in the protection of the public we are in these countries. Moreover, of the eighty-two countries which prohibit unqualified practice, no fewer than forty-one are under the British Crown. The colonies are for the most part far in advance of the mother country, though it is true that some of the more important, such as some of the States of Australia and also New Zealand, are in much the same condition in this respect as the United Kingdom. The General Medical Council has per-

formed a useful act in collecting and making available the information in this volume.

The subject of quack medicines has also formed the basis of a question in Parliament. Captain Craig, M. P., asked the Home Secretary whether his attention had been called to the increase in recent years of the sale of quack medicines, whether he was aware that it had been proved that such nostrums frequently contained nothing but harmless drugs, colored grease, colored water, small quantities of aloes, pilules of sugar, etc., though advertised to cure a multitude of different maladies; whether he was aware that the chief cost of such quack medicines was in the advertising; and whether he would appoint a small commission to inquire into and report upon the whole subject. Mr. Gladstone, in a written reply, stated that inquiries were at present being made at the instance of the Lord President of the Council as to whether the practice of medicine by unqualified persons was extending and as to the effects produced by such practice. The inquiries will no doubt throw some light on the question of the use of quack medicines.

The medical profession in this country has just lost two distinguished members by the deaths of Sir Stephen Mackenzie and Dr. Henry Radcliffe Crocker. Mackenzie was physician to the London Hospital and well known to a wide circle of practitioners. He enjoyed a very large consulting practice. He had made several valuable contributions to medical literature, his best known works being perhaps those dealing with jaundice and certain diseases of the liver. Dr. Radcliffe Crocker died at Engelberg, in Switzerland, very suddenly and unexpectedly. He was one of the foremost dermatologists in Europe. The two works by which his name will be remembered best are the book on *Diseases of the Skin* and the *Atlas of Diseases of the Skin*. He was physician and dermatologist to the University College Hospital.

LETTER FROM WINNIPEG.

The Canadian Medical Association.—Dominion Registration.—Chairmen of Committees.—An Association Journal Decided On.

WINNIPEG, September 13, 1909.

The forty-second annual meeting of the Canadian Medical Association was held in Winnipeg on the 23rd, 24th, and 25th of August, under the presidency of Dr. R. J. Blanchard, of Winnipeg. It was the largest and most successful meeting in the history of the association, over 340 being in attendance. In his annual report the general secretary made reference to the work of the association during the last eight years, the time he had occupied that office. At the beginning of the period, in 1901, there was a total membership of 900, with an average yearly attendance of 152. During the past eight years the membership had gone up to 1,500, with an average annual attendance of 209, and the new members added at Winnipeg this year would bring the attendance up to 1,700. In the annual presidential address Dr. Blanchard referred to several questions before the Canadian medical profession, such as Dominion registration; the medical inspection of

school children; the prosecution of quacks, which should be done by the public and not by the medical profession; a bureau of health for Canada, etc. The address in medicine was delivered by Professor J. George Adami, of Montreal, on Certain Aspects of the Typhoid Problem. The address in surgery was also delivered by a Montreal man, Dr. James Bell, on Cancer of the Prostate. For the first time in the history of the association, following the rule of the British Medical Association, a popular address was given. That it was appreciated by the public was seen in the fact that the large church in which it was held was crowded to the doors. Dr. Hugh A. MacCallum, of London, Ont., delivered this address, on The Mind and its Method of Action in Causing and Curing Disease.

The discussion on Dominion registration was one of the features of the meeting. In the absence of Dr. T. G. Roddick, of Montreal, whose name has been inseparably connected with this question for many years, it was introduced by Dr. R. W. Powell, of Ottawa, who, after reviewing the history of the movement in Canada and reminding his auditors that the Canada Medical Act, as promoted by Dr. Roddick, was still on the statute books of Canada, proposed the following motion, which was seconded by Dr. R. S. Thornton, of Deloraine, Man.: "Therefore I move that the Canadian Medical Association now in session urge upon Dr. Roddick the great importance of impressing upon the government and Parliament of Canada the desirability of so amending the Canada Medical Act of 1902 that when five or more provinces agree to the provisions and pass the necessary legislation to make it effective, the bill may become law, and apply to those provinces which have so legislated; that in order to strengthen Dr. Roddick's hands, a committee be formed from each of the provinces to consult with him on the provisions of the bill and as to the amendments necessary or desirable; and, finally, that the various colleges of physicians and surgeons or Provincial Licensing Boards in the Dominion be respectfully invited to nominate at least one of their own members to serve on such committee." Representatives of the different medical councils of the provinces, with the single exception of Prince Edward Island, were present and addressed the meeting, and it appeared that all the provinces favored Dominion registration; but the representative from the province of Quebec, Dr. Normand, of Three Rivers, the president of the College of Physicians and Surgeons of Quebec, considered that a good way to bring about the desired end would be, first, to secure reciprocity with the General Medical Council of Great Britain. This, however, secured no other supporter than himself, and the motion was carried almost unanimously.

There was held a discussion on the kidney in which Dr. R. P. Campbell, of Montreal; Dr. Walter McKeown, of Toronto; Dr. John T. Fotheringham, of Toronto; and Dr. W. J. Mayo, of Rochester, Minnesota, took part. Dr. Mayo was elected an honorary member of the association.

It was decided to hold the next annual meeting in Toronto, with Dr. Adam H. Wright, of Toronto, president; Dr. George Elliott, of Toronto, general secretary; and Dr. H. B. Small, of Ottawa, treas-

urer. The following were appointed chairmen of the different committees: Dr. R. A. Reeve, of Toronto, chairman of the Executive Council and of the Committee on Medical Education; Dr. A. T. Shillington, of Ottawa, chairman of the Committee on Medical Legislation and of the Committee on Public Health and Hygiene, which latter committee will have particular charge of promoting a bureau of health for Canada, and having consolidated the four separate medical services of the Dominion into one bureau of health under one of the existing ministers of the Crown; Dr. E. Ryan, of Kingston, chairman of the Committee on Reports of Officers; Dr. H. B. Small, of Ottawa, chairman of the Committee on Amendments to the Constitution and By-Laws; Dr. J. H. Elliott, of Toronto, chairman of the Committee on Necrology; Dr. J. T. Fotheringham, chairman of the Finance Committee, which committee was instructed by the Executive Council to proceed at once to the establishing of a medical journal to be the official journal of the association.

Therapeutical Notes.

The Use of Tincture of Iodine as an Antiseptic in Experimental Surgery.—In a previous issue (*New York Medical Journal*, September 11, 1909) an account was given of the results obtained by Jewett in skin disinfection with iodine. In *La Presse médicale* for July 17, 1909, E. Gley describes the excellent results obtained by him with the use of tincture of iodine as a skin disinfectant in operations on animals. Every physiologist is aware, he says, of the difficulties of rendering the parts aseptic in experimental work on such animals as cats, dogs, guinea pigs and rabbits. In cats particularly great irritation is caused by the use of the razor in removing hair, and the subsequent application of soap by friction. Indeed, this method of rendering the surface of the skin aseptic has been abandoned in the case of the animals named, at the risk of operating under insufficient antiseptic precautions. With the use of a weak tincture of iodine other antiseptic applications are unnecessary. After the hair has been removed from the parts to be incised, it is merely necessary to paint the surface of the skin freely with the tincture of iodine applied by means of a swab of absorbent cotton. Soap of any kind is never used. The author employs a tincture of iodine of special strength, as follows:

R	Tincture of iodine,	15 parts.
M	Alcohol (95 per cent.),	75 parts.

Just at the moment of cutting the line of incision is painted with the tincture, applied as before. M. Gley says he has used this method in a large number of operations on animals and on various parts of the body, particularly the neck and abdomen, and in no case has failed to secure reunion of the parts by primary intention. In the case of the cat it is his custom to anoint the line of suture with an ointment consisting of fifteen parts of salol (phenyl salicylate) in 100 parts of petrolatum.

(Citing from a paper by M. Guibé on the same

subject, published in *La Presse médicale* for May 26, 1909, M. Gley sums up the advantages of the tincture of iodine as an antiseptic. On account of its penetrative power a solution of iodine in alcohol quickly infiltrates the intercellular spaces and lymphatic vessels of the skin; it penetrates deeply and destroys any microbes they may contain. Another special advantage lies in the rapidity of sterilization effected, which is only equalled by the ease of application of the tincture.

Treatment of the Eczema of Children.—Little, in an article in the *British Medical Journal* for June 5, 1909, which is abstracted in the *Journal of the American Medical Association* for August 21, 1909, considers the most frequent cause of infantile eczema to be exposure to cold, and such local irritants as hard water, strong soap, dirt and irritation caused by lack of cleanliness and neglect. The treatment is to treat properly any parasitic disease that may be present, to keep the parts that are subject to moisture scrupulously clean, to prevent the use of any irritant on the child's skin that could perpetuate the disease, to keep the part comfortably warm but not overheated, and to prevent scratching by any method that seems best. A simple straw-board splint on the arms, long enough to prevent flexion at the elbows, is generally sufficient to prevent scratching. The application of calamine lotion and Lassar's paste will aid in curing the condition, but at times the disease in infants is difficult to cure.

The calamine lotion suggested by the author has the following composition:

R	Prepared calamine,	gr. xl;
	Zinc oxide,	gr. xx;
	Lime water,	℥iij;
	Olive oil,	℥i.

M. et Sig.: Apply with a brush or cotton swab.

Continuing his observations on treatment, Little points out that overfeeding and underfeeding should be prevented. The bowels should be carefully watched, both to prevent constipation and to see that the food is satisfactorily digested, and agrees with the child. It is sometimes advisable to cause the bowels temporarily to be rather loose. While the excessive use of artificial foods is often a cause of eczema in young children, still it occurs when the child is breast fed. Certainly, it is inadvisable to allow a restricted diet of artificial food that contains large amounts of salts. Large amounts of alkalies are certainly contraindicated, and the same is true of much acids. Water should be freely given. Change of air to the country or the seashore seems often advisable. This is especially true during the heated term, and overheating houses in winter, causing the child to become very warm, will prolong the disease.

Little does not believe that warm bathing of the eczematous child is inadvisable, and says that the part may be bathed at any stage, with the precaution to use no strong alkaline or irritating soap, and to use either soft water or water that has been made soft by the addition of soothing powders. The inflamed area should never be rubbed, but should be dried by mopping with soft towels or gauze.

If there is much swelling or infiltration of the skin in children, Little administers calcium lactate, doubtless on the presumption that calcium prevents.

or inhibits exudation. As soon as the edema is less, he stops the administration of the drug. It may be given as follows:

R Calcium lactate, gr. xl;
Cinnamon water, ℥iij.
M et Sig.: Two teaspoonfuls in water, three times a day, before meals.

A Balsam for the Treatment of Eczema.—According to the *Bulletin général de thérapeutique* for May 23, 1909, M. Griffon has employed at the Saint-Louis Hôpital, Paris, a balsam of the following composition:

	Parts.
R Wood tar,	18
Oil of cade,	15
Resorcin,	2
Menthol,	5
Guaiaacol,	5
Camphor,	40
Sulphur,	15
Pulverized borax,	36
Glycerin,	54
Acetone,	80
Castor oil,	40
Hydrous wool fat,	100

M.

It is evident that the work of combining such a heterogeneous collection of drugs into a homogeneous balsam will call for more than ordinary skill. It is said, however, that the phenol compounds, e. g., tar, oil of cade, resorcin, guaiacol, etc., become associated in true chemical union with the camphor and menthol. The sulphur is obtained by precipitation from a hot saturated solution in oil of turpentine, and is treated afterward with the mixture of tar, oil of cade, castor oil and wool fat, all heated in a closed vessel at a high temperature. The acetone forms the solvent and vehicle.]

Ringworm of the Beard.—According to the *Journal de médecine de Paris* for July 24, 1909, Brocq uses the following application in the treatment of ringworm of the beard:

R Corrosive sublimate, gr. iii;
Formaldehyde solution, ℥viii;
Acetone, ℥iiss;
Spirit of camphor, ℥iiss.
M. Sig.: Paint the parts affected night and morning.

Before retiring iodine ointment of one per cent. strength is applied.

Mercuric Oleobrasidate for Syphilis and Phtheiriasis.—Erucic acid from colza oil is readily isomerized into brassidic acid. When mercuric oxide is treated with a mixture of this and oleic acid mercuric oleobrasidate is obtained as a bright yellow jelly, readily spread and rapidly absorbed without giving a sensation of greasiness. It is readily soluble in soap solution. For syphilis it has been applied by the method of inunction in average doses of 270 grains per diem, applied daily, or every other day, until thirty inunctions if necessary, although in many cases ten or fifteen applications have been sufficient. In many cases treated, only one instance of stomatitis occurred, and this in a patient who had previously received grey oil by injection. The friction is applied gently and slowly, for about ten minutes, until the application is absorbed. For syphilitic sores it may be used in the form of an ointment. It has been equally serviceable in the treatment of phtheiriasis pubis and capitis, for which

two applications should be made with a thorough washing, with soap and water between. In itch it is equally efficacious. In fact it may usefully replace mercurial ointment for these purposes; in addition to being more easily absorbed, it does not soil the linen.—*Pharmaceutical Journal*, July 24, 1909.

Treatment of Alopecia in Children.—The *British Medical Journal* for August 7, 1909, describes Perier and Gaujoux's treatment of alopecia in children. Under the term "alopecia" the authors include all cases of hair falling out, whether it be local or general. First treat the cause, if it be eczema or impetigo; in all cases due to contagion cut the hair short to the roots. Except where it is contraindicated by a delicate skin, shampoo with black soap night and morning, after which dry the hair well, then use one of the following prescriptions. Apply the remedy with a good deal of friction.

R Ammonia water, 5 parts;
Balsam Fioravanti (French Codex),
Spirit of camphor, ãã 75 parts.

M.

or

R Compound spirit of ether, 250 parts;
Ammonia water, 4 parts;
Distilled water, 25 parts;
Pilocarpine hydrochloride, ½ part;
Spirit of lavender, 25 parts.

M.

or

R Tincture of jaborandi, 25 parts;
Tincture of cantharides, 25 parts;
Soap liniment, 100 parts.

M.

or

R Precipitated sulphur, 1 part;
Oil of cade, 10 parts;
Petrolatum,
Wool fat, ãã 15 parts.

M.

or

R Acetic acid, 2 parts.
Oil of cade, 20 parts.

M.

An Iodotannic Phosphate Substitute for Cod Liver Oil.—At the Institute of the Assistencia Nacional aos Tuberculosis, Lisbon, Portugal, the following mixture is used instead of cod liver oil (Mair, *American Druggist*, August 9, 1909):

R Tincture of iodine, 5i;
Tannin, gr. xii;
Syrup of calcium lactophosphate, 3x;
Glycerin, 3iij;
Tincture of orange peel, ℥xv;
Distilled water, 3iv.

M.

For Toothache.—Waxes and liquids for introduction into carious cavities for the relief of toothache are numerous, but the following formula, published in a recent number of the *Journal de médecine de Paris*, is novel:

R Menthol, gr. xxx;
Pellitory root, gr. xxx;
Gum guaiac, gr. xxx;
Yellow bees' wax, 3i;
Eugenol, gtt. x;
Coffee extract, gtt. x.

Mix and make a mass to be divided into pellets weighing about half a grain each, which are then coated with pulverized cloves, and introduced into the aching cavity.

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MICROSCOPY AT THE NORTH POLE.

Much of the so called argument to which Dr. Cook's detractors have been resorting in their attempt to discredit the story of his having reached the North Pole has seemed to us to be but little above the plane of pettifoggery. Of such a character was the statement, sent from London in press dispatches about a fortnight ago, that he could not have examined the polar water microscopically, for the reason that the specimen would freeze instantaneously. That criticism was attributed to the "British Medical Weekly." We supposed at the time that the *British Medical Journal* was meant, and in that journal for September 11th we find the following quotation from Dr. Cook's account: "We now found ourselves beyond the range of all life—neither footprints of bears nor the blow holes of seals were detected. Even the microscopic creatures of the deep were no longer under us." Upon this our London contemporary comments as follows:—

The last twelve words are well calculated to arrest attention, for Dr. Cook and his two Eskimo companions were then traveling over a frozen sea, and it scarcely seems likely that in the midst of so many other difficulties of vital importance they should have taken the trouble to bore through the great thickness of ice under their feet to obtain a specimen of sea water and submit it to examination, nor, if obtained, is it easy to imagine means by which its freedom from microscopic organisms could, in the circumstances,

have been adequately tested. In the intensely low temperature prevailing, a tiny quantity of water such as that used, either for microscopic examination or for a rough test by centrifugalization, would freeze instantaneously.

The writer then goes on to say that, "of course, Dr. Cook may have found some way of getting over the difficulties indicated," but he thinks that "one might have expected him to make some reference at least to the fashion in which he reached his conclusion." "As it stands," he adds, "the unexplained passage suggests something of the nature of poetical license," and "must inevitably tend to create an unfavorable impression as to the probable accuracy of the rest of his observations." We fancy that our readers can readily think of several devices by any one of which Dr. Cook could make a satisfactory microscopical examination of the water at the pole—all so simple as to have made it wholly unnecessary for him to specify the procedure that he actually adopted. Probably, however, even the hypercriticism to which he has been subjected with regard to this point will be met by Dr. Cook in due time, though we do not think he will regard it as of such a pressing nature as to call for his immediate attention.

PELLAGRA.

In our issue for July 10th we published an article on The *Ætiology of Pellagra*, by Passed Assistant Surgeon C. H. Lavinder, of the Public Health and Marine Hospital Service, read at the sixth annual meeting of the American Society of Tropical Medicine, in which the author said: "The *ætiology of pellagra*, in any definite, scientific sense, is essentially unknown." In concluding his paper, he added that the idea, in one form or another, of an *ætiological* relation between pellagra and the use of maize as food was held by the majority of students of the disease, that such an idea was almost as old as the history of the disease itself, that it rested to some extent upon the observations and experimental work of many able men, and that in consequence it was not to be lightly cast aside, though, at the same time, "it would seem unwise to hold such views so dogmatically as to exclude investigation along other suggestive lines." Surely these statements are sufficiently conservative, and, we suppose, they may be held to represent the general attitude of investigators in the United States. The American medical profession cannot, therefore, be justly charged with complicity in any "sectional conspiracy" to discredit southern maize as an article of food, as was intimated in a New Orleans dispatch published in the *Sun* last Sunday.

In a more recent article, published in *Public Health Reports* for September 10th, Dr. Lavinder

takes up the subjects of the prognosis and treatment of pellagra. Cases that are still in the earlier stages are naturally regarded as the more hopeful. Including all instances studied, however, our mortality has not yet approached the low percentages recorded by Lombroso, though it must be taken into account that the American figures are largely derived from asylum cases, which are necessarily less promising than those which do not lead to insanity. He advises that maize be admitted into the food supply of lunatic asylums "with the utmost caution," for wholesome maize is not always easy to distinguish from that which is harmful. At the same time he remarks that "there is abundant evidence that good corn is not only a wholesome but a harmless food, and not a few writers have pointed out the folly of those who counsel the total rejection of so valuable a cereal." As regards the use of drugs, he speaks hopefully but guardedly of arsenic and of sodium chloride, also of transfusion of the blood of persons who have recovered from the disease, though he has himself thus far been unable to make use of individuals entirely suitable for the purpose.

THE LURE OF QUACKERY.

Barnum's celebrated aphorism, "The public likes to be humbugged," is false in principle. When he exhibited his famous painted elephant as the genuine sacred Siamese pachyderm, the public flocked to see it because they thought it was genuine. If a real white elephant had been on view receipts would not have been less, because the public loves what is wonderful. The public visits quacks and pays them large sums of money because very definite promises are made of quick and painless "cure," and not from any liking for humbug *per se*. Mercury, quinine, and iron have become household words and have lost what mysterious 'charm' they possessed when they were hydrargyrum, Jesuits' bark, and ferrum. The quack advertises the discovery of a hitherto unknown South American or Asiatic plant, gives it a fearsome polysyllabic name, and so excites the very human love of mystery. He resurrects a discarded operation or bandage, confers upon it an eponymic title of famous connotations, and reaps his harvest because his cleverly worded advertisements are believed; he succeeds, not because he is committing a fraud, but because he ingeniously conceals that fact. Quack doctors make fortunes because they are firmly believed to effect wonderful cures, not because they are notorious humbugs; at best they do not make even the financial success of the genuine ethical practitioner. The public recognizes and rewards true professional ability, and patronizes the imitation only because it distinguishes it but imperfectly from the real.

MOTOR INSUFFICIENCY OF THE STOMACH.

Motor abnormalities of the stomach may be more important than disturbances of its secretions. This idea, which for some time past has been upheld by Mathieu, has been greatly developed by him and Roux in a memoir presented to the French Association for the Advancement of Science in August. In the present state of our knowledge, the clinical types of motor insufficiency of the stomach may be divided into two large classes, according to whether or not the stomach contains liquid in the morning when the patient rises. A meal composed of 200 c.c. of soup or tea, 200 grammes of rice with milk, 100 grammes of bread, and six prunes is given the evening before. The presence of the remains of this meal indicates the existence of pyloric stenosis, and the degree of the stenosis can be ascertained by the amount of gastric secretion. The more marked the stenosis the greater will be the amount of residue. However, a worn out muscle will also, from the resulting dilatation, allow the quantity of residue to increase, and this may be forced out of the organ in spite of a certain degree of coexisting stenosis, on account of the considerable amount of secretion, as occurs in certain cases of gastric ulcer.

The peristaltic movements of the stomach are another sign of stenosis which should be looked for. As to the cause of the stricture, it is often due to a pyloric ulcer or one situated in the neighborhood of the pylorus, in which case there is a greatly increased secretion of hydrochloric acid, with pain due to spasm of the pylorus, hæmatemesis, and copious vomiting, the latter occurring at the stage of cicatricial contraction. Stenosis from cancer progresses more speedily, the pain being sharper and the cachexia more rapid. Stenosis arising from some external compression will vary symptomatically according to the nature of the process giving rise to the obstruction, such as inflammation of the gall-bladder or tuberculous peritonitis. If the stenosis is situated in the duodenum, above the ampulla of Vater, the bile flows back into the stomach. Cases of postoperative gastric dilatation should be included in the class of stenoses due to compression. It is a question whether or not the mesenteric artery can compress the duodenum. Changing the patient's position or the use of the stomach tube, the latter by emptying the organ, causes the symptoms of compression to disappear.

When the stomach is empty in the morning before the patient has eaten, but when the food taken at noon remains too long in the stomach, the meal being composed of 150 grammes of meat and from 150 to 200 grammes of potato and bread, and this is not propelled from the organ within three or four hours, when the splashing sound can be detected af-

ter six or seven hours, it may be concluded that the motor disturbance is not so serious. Under these circumstances the latter is due to a moderate stenosis, to spasm of the pylorus produced by some lesion in its neighborhood, to insufficiency of the gastric muscle, or to gastropnoia. Some general disturbance of the metabolism is usually at the bottom and should be corrected, or there may be ptosis with a vertical elongation of the stomach, which may be detected with the x ray, and this will require an abdominal supporter. Atony and ptosis are frequently associated. It should also be pointed out that in instances of pyloric insufficiency there are diarrhoea and meteorism. Chronic diarrhoea would appear to be often due to some gastric disturbance, usually pyloric insufficiency.

THE PHYSICIAN AS A COMFORTER.

What motives impel to suicide in cases in which a motive is clear at all? The ancients wrote that one had a justification for suicide if life became unbearable or an offense to one's self or to those held dear. Many present day suicides can be traced to a desire to escape continued suffering or disaster. Then, there are cases in which true delusions and paranoia or melancholia are fundamental.

Physicians very often hear from patients that "life is not worth living." Most of those who say that would fight very hard for life if they were in any danger of losing it. It is the part of wisdom to say some encouraging word on occasion. Very few of us, no matter how depressed, will be found utterly without hope in life. A kindly word may linger long in the thought of the unhappy one. A patient taken to an insane asylum, and in a most incurable condition, was seen there the first evening by two physicians. One of the physicians had expressed the opinion that this patient was quite sane, and an attendant heard the statement. This attendant told the patient of it, and thus produced a remarkably stimulating impression which acted entirely for good. The patient ultimately recovered.

Do not be timid about speaking directly to a patient. Tell him openly about his mental condition. Do not argue with a dement or a maniac. There is some advantage in open speech, however, with a neurasthenic or a melancholic patient. Both require stimulation. Give them a hearty greeting and impress them with some good feature present in the case. Such a sympathetic manner of attacking a difficult question will generally develop in the patient any possibility of cure which may exist. Not only in these mental cases, but in any others, do not hesitate to express a cordial interest in the welfare of your patients. A comforting physician may avert tragedies of many sorts.

THE INFLUENCE OF THE MIND ON THE BODY.

How can the mind, by taking thought, alter the structure of the body? Very plainly, thought or ideas can affect structure chiefly by emotion and, through emotion, the sympathetic system. Huchard has shown that many cases of arteriosclerosis are consecutive to emotional influences and with great probability the result of them. Some logical relation between thought and emotion acting upon the bodily tissues may alter the course of disease.

THE PERSISTENCE OF PROTOZOA IN MAN.

In the efforts of sanitarians and health officials to prevent the spread of those transmissible diseases which are due to bacteria the "bacillus carrier" may prove to be more troublesome than is at present realized. In the case of diseases due to protozoa the "carrier" is the important factor. With regard to malaria, for example, we know that one individual with gametocytes in his blood, though he himself may show no evidences of his infection, is sufficient to start an epidemic in a locality which, while free from the disease, has breeding places for anopheles mosquitoes of certain species. The relation of carriers to trypanosome infection and kala azar is yet to be worked out.

In the Section in Tropical Medicine of the British Medical Association, at the meeting held this year in Belfast, the subject of the persistence of the tropical diseases of man due to protozoa was discussed (*Journal of Tropical Medicine and Hygiene*, August 2d). The discussion was opened by Dr. Charles W. Daniels, the president of the section, who said that as our knowledge increased it appeared likely that all protozoa which affect man were subject to an alternation of sexual and nonsexual multiplication. If this was true of such an intestinal parasite as *Trichomonas intestinalis*, that organism should present a source of anxiety to health officers even of temperate climates. He inclined to the view that the dying out of an infection was due to changes in the environment of the parasite in the host. Applying this to malaria, he said that the important part of the acquired immunity which is shown by certain natives and some whites was the result of the development of protective agencies originated by the parasites themselves. Too much attention had been paid to the parasites, and too much stress had been laid on their protozoan nature. The sounder view would be to consider them as causes of disease and therefore more on a par with bacteria. Consequently efforts should be put forth to increase the resistance that already existed as well as to endeavor to destroy the parasites.

Obituary.

WILLIAM C. KRAUSS, M. D.,
of Buffalo.

Dr. Krauss, a well known neurologist, died in New York on Tuesday, September 21st, within a few hours of his return from a visit to Europe. He was sixty-four years old. He was a graduate of the Bellevue Hospital Medical College, of the class of 1886. He had made occasional important contributions to the periodical literature of medicine, several of which it has been our good fortune to publish.

News Items.

Changes of Address.—Dr. G. Pinegin, to 105 Palisades Avenue, Yonkers, N. Y.

Dr. Ulysses S. Kahn, to 59 West Fifty-fourth Street, New York.

Dr. Edward K. Mitchell, to 710 West Lehigh Avenue, Philadelphia, Pa.

Plans for Remodelling the Babies' Hospital, Fifty-fifth Street and Lexington Avenue, New York, have been filed. The alterations will cost \$10,000.

The New Hospital at Lock Haven, Pa., was formally opened on September 13th. The new building replaces the one which was destroyed by fire about a year ago. It cost \$75,000, exclusive of furnishings.

The Section in Paediatrics of the Medical Society of the County of Kings, N. Y., held a stated meeting on Wednesday evening, September 22d. The paper of the evening was read by Dr. Alexander Spingarn on *Dystrophic Conditions of Infancy and Childhood*.

Hospital and Medical College Buildings to be Erected in Canton, China.—Announcement is made that the University of Pennsylvania Medical College has purchased a large tract of land in Canton, China, upon which are to be erected a hospital and medical college.

The Bronx Medical Association held a "clinical evening" on Thursday, September 23d. The subject chosen for consideration was *Anterior Poliomyelitis*, and among those who presented patients and took part in the discussions were Dr. John F. Terriberry, Dr. Arthur H. Cilley, and Dr. B. H. Whitbeck.

Lectures on Organic Chemistry.—A course of lectures on organic chemistry, free to physicians, will be delivered during the coming season at the Wagner Free Institute of Science, Seventeenth Street and Montgomery Avenue, Philadelphia, by Professor Charles H. La Wall, of the Philadelphia College of Pharmacy.

The Cornerstone of the New North Hudson Hospital, at Clifton Park, Weehawken, N. J., was laid with suitable ceremonies on September 19th. Mr. L. A. Menegaux, president of the board of governors, presided, and about two thousand persons were present. It is believed that the new building will be ready for occupancy next February.

A New Hospital in Woodhaven, L. I.—It is reported that Woodhaven, Queens Borough, L. I., is soon to have a new hospital, which will cost about \$500,000. The institution, which will be called St. Anthony's Hospital, is to be erected by the Sisters of the Poor of St. Francis. The site for the new building is at Woodhaven Avenue and Fulton Street, where the sisters own eight acres of land.

The Opening Exercises of the Medico-Chirurgical College, of Philadelphia, will be held on Monday evening, September 27th, at 8 o'clock, in the college amphitheatre. Dr. William H. Rodman, professor of surgery in the college, will deliver the opening address, and the deans of the several departments will make the usual announcements for their respective departments. The increase in registration at the college is thirty-three per cent. in medicine, twenty-five per cent. in dentistry, forty per cent. in chemistry, and over one hundred per cent. in pharmacy.

The Wisconsin Christmas Stamp.—Three hundred and eighty-four designs were submitted in competition for the prize of \$100 offered by the Wisconsin Antituberculosis Association for the best design for a stamp to be sold during the Christmas season. The prize was won by Mr. Walter Cohn, 759 Cass Street, Milwaukee.

Assistant Superintendent of Bellevue Hospital Dismissed.—Michael J. Rickard, assistant superintendent of Bellevue Hospital for many years, was dismissed on September 21st by the board of trustees of Bellevue and Allied Hospitals, on charges of misconduct which had been preferred against him by the finance committee.

A Maternity Division at the Buffalo General Hospital.—A model modern maternity division has been inaugurated at the Buffalo General Hospital, consisting of private rooms, wards, operating and delivery rooms. The department has a very complete equipment and the nurses in charge have received special training at the Sloane Maternity Hospital in New York.

Jefferson Medical College Class Reunion.—The class of 1885 of Jefferson Medical College is planning to hold a reunion in Philadelphia, on or about April 2, 1910, to celebrate the twenty-fifth anniversary of the graduation of the class. Members of the class will greatly facilitate the arrangements for this function if they will communicate promptly with Dr. J. D. Orr, class president, 215 Second Street, Leechburg, Pa.

Officers of St. Mary's Hospital, Jamaica, L. I.—At a recent meeting of the board of trustees of the hospital the following officers were elected for the ensuing year: Dr. H. McDonald, of Morris Park, president; Dr. William Nammack, of Jamaica, vice-president; Dr. A. J. Blanchard, of Jamaica, secretary and treasurer; executive committee, Dr. C. K. Pfug and Dr. Lewis H. Fleck, of Brooklyn, and Dr. George Lennehan, of Jamaica.

The New People's Hospital in New York.—Plans have been filed for remodelling the four story and basement dwelling at 203 Second Avenue, New York, for the proposed People's Hospital, of which Mr. M. Greenbaum is president. The necessary improvements are to be made at a cost of \$15,000 and will provide a dormitory on the main floor; wards and private rooms on the first, second and third floors; and operating rooms, sterilizing rooms, a laboratory, and a nurses' room on the top floor.

The Dallas, Texas, Medical and Surgical Association held its fifteen annual banquet on the evening of September 11th. Sixty members were present. Dr. Frank J. Hall, president of the society, was toastmaster, and among those who responded to toasts were the Hon. William T. Atwell, Dr. W. J. Calvert, and Dr. R. S. K. Woods. The officers of the association are: Dr. Frank J. Hall, president; Dr. O. M. Marchman, first vice-president; Dr. A. Wilkinson, second vice-president; Dr. E. S. Gordon, secretary; Dr. F. A. Baldwin, treasurer.

Opportunities for Women Physicians in Great Britain.—According to the *British Medical Journal*, the openings in Great Britain for women who adopt a medical career, increase, and the new regulations of the board of education making the medical inspection of school children compulsory has opened up a wide field of work in that direction. Women hold many appointments as resident medical officers in hospitals for women and children all over the country; and in some general hospitals, and in a large number of sanatoria, infirmaries, fever hospitals, and asylums, women are eligible for appointment. Many medical women are also engaged in public health work.

Brooklyn Physicians to Honor Dr. Cook.—A public reception in honor of Dr. Cook is being planned by the medical profession of Brooklyn. A meeting was held a few days ago to make arrangements to welcome Dr. Cook back to Brooklyn, and among those present were representatives from the following medical societies of Brooklyn: Medical Society of the County of Kings, the Homœopathic Society of the County of Kings, the Eclectic Society, the Brooklyn Gynecological Society, the Brooklyn Surgical Society, the Brooklyn Pathological Society, the Associated Physicians of Long Island, and the Brooklyn Medical Society. A committee of arrangements was appointed consisting of Dr. Elias H. Bartley, Dr. Walter B. Chase, and Dr. Alfred Bell, who will communicate with Dr. Cook regarding the date of the reception.

Hookworm Disease.—According to the *Army and Navy Journal*, September 25, 1909, the physicians of the Philippine Islands have been asked to enter into a competition for a prize of \$300 to be given for the best essay on the hookworm disease as a cause of sickness in the tropics. It is expected that over five hundred doctors will take part in the contest, and this fact alone is an evidence of the progress of medical science in the Philippines.

Scientific Society Meetings in Philadelphia for the Week Ending October 2, 1909:

MONDAY, September 27th.—Medical Society of the State of Pennsylvania; Mineralogical and Geological Section, Academy of Natural Sciences.

TUESDAY, September 28th.—Medical Society of the State of Pennsylvania.

WEDNESDAY, September 29th.—Medical Society of the State of Pennsylvania.

FRIDAY, October 1st.—American Philosophical Society; Kensington Branch, Philadelphia County Medical Society.

Society Meetings for the Coming Week:

MONDAY, September 27th.—Medical Society of the County of New York.

TUESDAY, September 28th.—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

THURSDAY, September 30th.—Brooklyn Society for Neurology.

FRIDAY, October 1st.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; Manhattan Clinical Society, New York; Practitioners' Society of New York.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of the new cases and deaths reported for the two weeks ending September 18, 1909:

	September 11—		September 18—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	429	158	501	132
Diphtheria	188	23	206	16
Measles	88	6	82	7
Scarlet fever	82	4	58	4
Smallpox .....	..	..	..	..
Varicella	11	..	14	..
Typhoid fever	286	28	276	24
Whooping cough	36	17	52	17
Cerebrospinal meningitis	7	5	7	5
Total	1,126	238	1,196	205

American Urological Association.—The New York Society held a stated meeting on Wednesday, September 22d, at the New York Academy of Medicine. The subject selected for consideration at this meeting was the Newer Diagnostic Methods and Instruments in Urology. Dr. Howard Fox read a paper on the Theory and Clinical Value of the Wassermann Reaction, and Röntgen Rays and Argylol in the Demonstration of the Kidney Pelvis was the title of a paper presented by Dr. E. L. Keyes, Jr., and Dr. George M. MacKee. There was a general discussion. The next stated meeting of the society will be held on November 24th, and the subject will be Infections of the Urinary Tract, Source, Course, and Sequellæ. The officers of the society are: President, Dr. A. Ernest Gallant; vice-president, Dr. Follen Cabot; secretary, Dr. George M. MacKee; treasurer, Dr. Walter B. Brouner.

The Tri-Professional Medical Society of New York held its annual meeting at the Hotel Astor, on Tuesday evening, September 21st. After the transaction of certain routine business, including the election of officers for the ensuing year, Dr. A. Ernest Gallant read the paper of the evening, which was entitled *Lessons from Six Hundred Abdominopelvic Operations*. An interesting discussion followed, among those taking part being Dr. A. H. Goelet, Dr. Ross McPherson, Dr. J. M. Keyes, and Dr. H. Fischer. The following officers were elected: Dr. G. Morgan Muren, president; Dr. A. H. Goelet, first vice-president; Dr. G. K. Dickinson, second vice-president; Dr. Walter T. Dannreuther, secretary; Dr. E. D. Franklin, treasurer; Dr. D. E. S. Coleman, Dr. J. M. Lieberman, and Dr. W. J. Lederer, members of the executive council, to serve until 1912; Dr. Maurice Green and Dr. J. M. Keyes, members of the executive council, to serve until 1910.

The Health of Pittsburgh.—During the week ending September 16, 1909, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 2 cases, 0 deaths; typhoid fever, 18 cases, 5 deaths; scarlet fever, 17 cases, 1 death; diphtheria, 12 cases, 2 deaths; measles, 4 cases, 1 death; whooping cough, 11 cases, 2 deaths; pulmonary tuberculosis, 34 cases, 17 deaths. The total deaths for the week numbered 174, in an estimated population of 572,000, corresponding to an annual rate of 15.82 in a thousand population.

The Franklin District, Mass., Medical Society held its regular September meeting in Greenfield on September 14th. The scientific programme consisted of a paper on Ether Anesthesia by Inhalation, by Dr. George P. Twitchell, of Greenfield, and a Report of a Case of Purpura Hemorrhagica, by Dr. F. E. Johnson, of Erving. The next meeting of the society will be held on November 9th, and the programme on that occasion will include papers by Dr. Francis W. Donahue, Dr. Harry N. Howe, and Dr. Charles A. Moline. The officers of the society are: Dr. C. L. Upton, of Shelburne Falls, president; Dr. L. A. Newton, of Greenfield, vice-president; Dr. H. N. Howe, of Greenfield, secretary and treasurer.

The Health of Chicago.—During the week ending September 11, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 64 cases, 7 deaths; scarlet fever, 91 cases, 4 deaths; measles, 26 cases, 1 death; whooping cough, 57 cases, 10 deaths; tuberculosis, 65 cases, 61 deaths; pneumonia, 18 cases, 47 deaths; typhoid fever, 48 cases, 6 deaths; chickenpox, 14 cases, 0 deaths. The deaths from other important causes were: Cancer, 25 deaths; nervous diseases, 13 deaths; heart diseases, 56 deaths; apoplexy, 6 deaths; Bright's disease, 44 deaths; diarrhoeal diseases, under two years of age, 123 deaths; diarrhoeal diseases, over two years of age, 20 deaths. There were 5 suicides, 28 deaths due to accidents, and 2 deaths from manslaughter, making a total of 35 deaths by violence. The total number of deaths during the week was 562, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.17 in a thousand of population. The infant mortality was 215; 149 under one year of age, and 66 between one and five years of age.

The Health of Philadelphia.—During the week ending September 11, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, 1 case, 1 death; typhoid fever, 45 cases, 1 death; scarlet fever, 22 cases, 1 death; chickenpox, 2 cases, 0 deaths; diphtheria, 46 cases, 4 deaths; measles, 8 cases, 3 deaths; whooping cough, 9 cases, 6 deaths; tuberculosis of the lungs, 80 cases, 43 deaths; pneumonia, 13 cases, 16 deaths; erysipelas, 3 cases, 0 deaths; mumps, 4 cases, 0 deaths; trachoma, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 8 deaths; diarrhoea and enteritis, under two years of age, 50 deaths; periperal fever, 2 deaths; dysentery, 3 deaths. The total deaths numbered 385 in an estimated population of 1,565,560, corresponding to an annual death rate of 12.78 in a thousand of population. The total infant mortality was 115; 99 under one year of age, and 16 between one and two years of age. There were 32 stillbirths; 15 males and 17 females. The total precipitation was 1.59 inch.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending September 11, 1909, there were 1,317 deaths from all causes reported to the department, 98 more than for the corresponding week in 1908.

The annual death rate in a thousand population was 15.05 for the whole city, and for each of the five boroughs as follows: Manhattan, 14.95; the Bronx, 14.84; Brooklyn, 15.01; Queens, 14.91; Richmond, 20.07. The total infant mortality was 537; 370 under one year of age, 88 between one and two years of age, and 79 between two and five years of age. Of the total number of deaths of children under five years of age, 205 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 58; pulmonary tuberculosis, 158; diarrhoeal diseases, over five years of age, 220; organic heart diseases, 97; Bright's disease, 82; cancer, 71; pneumonia, 64; bronchopneumonia, 46; suicide, 10; homicide, 4; accidents, 57. There were 90 stillbirths. Eight hundred and fifty-one marriages and 2,311 births were reported during the week.

The Relation of Modern Laboratory Methods to the General Practitioner.—The various phases of this subject were discussed at a stated meeting of the North Branch of the Philadelphia County Medical Society, held on Tuesday evening, September 21st. Among the questions pertaining to the subject which received consideration were the following: To what extent should clinical diagnosis be influenced by laboratory diagnosis? May the laboratory prove a hindrance as well as a help to the general practitioner? To what degree should laboratory findings influence treatment, especially in surgery? Of what practical value to the family physician are the more recent laboratory tests in the diagnosis of tuberculosis, typhoid fever, etc.? How may the family doctor best cope with the question of the extra expense attaching to laboratory services? To what extent is it practical or advisable for the general practitioner to do his own laboratory work? Among those who took part in the discussions were: Dr. William E. Robertson, Dr. H. F. Pfeiffer, Dr. Wilmer Krusen, Dr. E. H. Wiggins, Dr. H. A. Duncan, Dr. C. C. Royce, Dr. W. C. Batroff, Dr. E. S. Saylor, Dr. H. A. Carey, and Dr. Harry Hudson.

Gifts and Bequests to Charity.—By the will of Mary Rhinelander King, of Great Neck, L. I., the Church Charity Foundation of Long Island will receive an endowment of \$10,000; the Church Orphanage Association, of Washington, D. C., will receive \$5,000; and Roosevelt Hospital, New York, will receive \$5,000 to endow the Francis Delafield, M. D., bed.

By the will of Lucius Clapp, of Randolph, Mass., the Massachusetts General Hospital will receive \$5,000 for the establishment of a permanent free bed.

The Mountain Side Hospital, Montclair, N. J., received a gift of \$26,000 from Mr. James N. Jarvie, of Montclair, on the occasion of his marriage recently to Miss Helen Newton.

By the will of Stephen M. Crosby, Dartmouth College will receive a legacy of \$50,000, and the Mary Hitchcock Hospital, at Hanover, N. H., will receive \$5,000 to endow a bed in memory of the testator's father.

By the will of Mrs. Emma A. Tillotson, who died in New York on September 12th, the sum of \$126,000 will be divided among the following New York institutions: Woman's College, Barnard College, Home for Incurables, New York Institution for the Blind, Home for Old Men and Aged Couples, New York Society for the Prevention of Cruelty to Animals, St. Mary's Free Hospital, St. Luke's Hospital, Skin and Cancer Hospital, and the Metropolitan Museum of Art.

The Collection and Preservation of Medical Records.

An appeal to the medical profession has been issued by the members of the Western Association for the Preservation of Medical Records for aid and support in their work of collecting and preserving historical data in regard to the origin, evolution, and personnel of the profession in the West and South. Prior to the organization of this society in May of this year, there had been no concerted effort made to collect historical and biographical records of the profession in that part of the country, and the result of this delinquency has been the loss of much valuable material pertaining to medical schools and societies and biographical records of practitioners and teachers of medicine in bygone days. Membership in the society entails no fees or obligations of any kind, and every physician who is in sympathy with this work is invited to join and lend his active support to the movement. The society is particularly anxious to obtain the following material: (1) Medical journals published in the West prior to 1880; (2) medical books and pamphlets written or published in the West; (3) manuscripts and autographs of early Western physicians; (4) old diplomas and other documents of a medical character; (5) proceedings of medical societies; (6) reports of hospitals and other medical institutions; (7) catalogues and announcements of Western medical colleges of all schools; (8) biographies and portraits of Western physicians; (9) information and material of any kind pertaining to medicine and medical men and affairs in the West; (10) curios of medico-historical character. The material collected will be kept in the Lloyd Library, Cincinnati, and will be systematically arranged, so as to be made available for research work. All contributions should be sent in care of the librarian, and as the association is without funds, the request is made that express charges be prepaid. Dr. C. A. L. Reed is chairman of the association; Dr. Otto Juettner is secretary, and Dr. A. G. Drury, 710 West Eighth Street, Cincinnati, is librarian.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 9, 1909.

1. Simple Inspection of the Eyes as an Aid in General Diagnosis, By HENRY B. STEVENS.
2. On the Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or are above It, By E. A. CODMAN.
3. Studies in Psychopathology. The Psychotherapeutic Value of the Hypnoidal State, By BORIS SIDIS.
4. Sudden Deaths in a Synopsis of Twenty Years' Medical Work, By FRANCIS J. CANEY.
5. The Queen's Closet Opened, By GRACE WHITING MYERS.

1. Simple Inspection of the Eye as an Aid in General Diagnosis.—Stevens speaks of the signs which may be observed in the eye as aids in general diagnosis, and remarks that the eyes from the vantage ground of their wonderfully perfect anatomical and physiological position are especially adapted to reflect many of the most important changes of the system. A large majority of those signs may be revealed by simple inspection merely, as the eyes, more than other organs, are at all times most easily and conveniently inspected. By simple but intelligent inspection we may gain important information concerning various physical and functional body processes. We may read, if we will, much of profit in regard to that all important mental or psychic side of our patients which we are too apt to overlook in our eager hunt for the pathological.

3. The Psychotherapeutic Value of the Hypnoidal State.—Sidis observes that the value of the hypnoidal state for the treatment of psychopathic affections is in the lowering of the high thresholds and formation of association with utilization of accumulated stored up energy requisite for the restoration of the higher psychic functions, for the exercise of the voluntary and personal control over the dissociated, automatically or subconsciously functioning groups of systems. The hypnoidal state is essentially a primitive rest state and has been utilized almost from the very origin of animal life for the repair and restoration of worn out organs and impaired functions. Unlike the waking state, the hypnoidal state does not present any special adaptations to the external environment. The only use of the hypnoidal state is repair of impaired functions and utilization of fresh energies. We can still use the hypnoidal state for the same purpose. The rigidity of group associations requisite in the struggle for existence gives way in the hypnoidal state. In the subwaking state there is a reduction, a redistribution and fall of thresholds, with a consequent potential reformation and recombination of systems into new groups and aggregates. The hypnoidal state may be taken to represent an indifferent or rather neutral mental or psychophysiological equilibrium. We can utilize this primitive state to bring about a more favorable change in the disturbed equilibrium of the narrowed, dissociated, impoverished, enfeebled, and full of automatism degraded waking life. The over-acting dissociated systems with their automatic reflex reactions may form associations with other systems and thus become inhibited as well as controlled in their function by the voluntary activity of per-

sonal consciousness, while the inhibited systems with their raised thresholds and accumulated reserve energy are set into function. It is, therefore, possible to bring about a greater vigor of personal activity, a more efficient control of reactions to stimulations, a better adjustment of the organism to the conditions of its environment. It is by means of such readjustment of disturbed psychophysiological reactions that psychopathic affections are restored to normal functioning and thus get cured in the subconscious, subwaking, hypnoidal state.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
September 18, 1909.

1. The Relation between Science and Art in Infant Feeding, By HENRY DWIGHT CHAPIN.
2. Investigation of Blood for Tubercle Bacilli, By WALTER V. BREM.
3. Medical versus Legal Responsibility, By ALFRED GORDAN.
4. The Stability of Type of the Tubercle Bacillus, By ALFRED F. HESS.
5. Syphilitic Pseudoparalysis, By L. T. ROYSTER.
6. Nodular Opacity of the Cornea. With Special Reference to Its Etiology, By JOHN GREEN.
7. Osteomyelitis of the Lower Jaw, By H. H. GERMAIN.
8. The Wassermann Reaction in Its Relation to Diseases of the Central Nervous System, By B. SACHS.
9. The Serodiagnosis of Syphilis, By HIDEYO NOGUCHI.
10. The Wassermann Reaction, By E. CASTELLI.

2. **Errors in Tubercle Tests.**—Brem refers to Rosenberger's investigations and remarks that in examining blood, urine, stools, sputum, and exudates for tubercle bacilli, the greatest care should be used to exclude contamination of water and all solutions used with members of the acid resisting group of bacilli (whether dead or alive). In his investigation coincidences occurred which were all but convincing of the presence of tubercle bacilli in the blood in every case of tuberculosis. Animal experimentation was negative, but the quantity of blood used for inoculation was too small for the results to be of great value. Acid alcohol resisting organisms were found eventually in fresh distilled water furnished by the Isthmian Canal Commission, in tap water, in old distilled water made with care in the pathological laboratory, and in all solutions made up with the Canal Commission water. These bacilli were either dead or nonpathogenic to guinea pigs. He concludes that there is as yet no conclusive proof of the frequent, continued presence of tubercle in the circulating blood.

4. **Tubercle Bacillus.**—Hess reports two cases of cutaneous tuberculosis with bovine infection in adults. He concludes that the fact that they remained localized should not be attributed to the low degree of virulence for man of the bovine bacillus, as it is well known that cutaneous affections due to the human type of bacillus, such as lupus or the "anatomical tubercles" contracted in the dissecting room, likewise do not tend to systemic invasion. Their main significance, however, lies in the fact that they furnish exceptional instances of bovine tubercle bacilli which have lived in the human tissues for many years without acquiring characteristics of the human type. From this point of view they constitute evidence against the conversion in the human tissues of bovine bacilli into human tubercle bacilli.

6. **Nodular Opacity of the Cornea.**—Green gives the history of an extraordinary rare affection, nodular opacity of the cornea. This disease is to be

distinguished, says the author, from a number of more or less similar conditions. Fuchs calls attention to some distinguishing features between this disease and superficial punctate keratitis. In nodular opacity the spots are compact and homogeneous. There are no inflammatory appearances, and the clinical aspect may remain unchanged for years. In superficial punctate keratitis, on the contrary, the spots are made up of an agglomeration of the very finest dots. Inflammatory appearances are invariably present, and the condition undergoes rapid changes. Von Reuss, under the name of "keratitis maculosa," describes a disease consisting of disc-like masses surrounded by a ring occupying for the most part the periphery of the cornea, but also at times the centre. Nummular keratitis (Stellwag) consists of very large masses of a saturated yellowish tint lying mostly in the periphery of the cornea, and in the superficial layers. Both types, in contradiction to nodular keratitis, offer a good prognosis. Grillike keratitis is a condition which, in respect to its course, its situation in the centre of the cornea, and the elevation of the epithelium over the lesions, presents many points of similarity. It is distinguished by the very definite mesh work or interlacing arrangement of the linear opacities. Fuchs suggests that nodular opacity bears some resemblance to certain cases of old eczematous keratitis in which a thinning of the epithelium over one or more of the denser opacities produces a bluish white prominence of the corneal surface. According to Morax the disease may be confounded with syphilitic nodular keratitis, in which the infiltrations, either solitary or in groups, are of a grayish yellow color. They develop slowly, last for several months, and finally disappear, leaving only insignificant deep or superficial opacities in the cornea. Under the title "spotted family degeneration of the cornea," Fehr describes a condition observed by him in two sisters and a brother. Each cornea showed a milky opacity in which scattered dots of greater saturation were distinguishable. Under magnification the diffuse opacity resolved itself into tiny punctuations, and the more saturated masses were seen to be due to the crowding together of the individual punctuations. This condition is distinguished from nodular opacity by the fact that the periphery of the cornea is involved and that the corneal surface is smooth and shiny.

7. **Osteomyelitis of Lower Jaw.**—Germain says that in acute cases affecting the body of the mandible the general rule for treatment should be to remove the facial wall of the lower jaw through an external incision, exposing the inferior dental canal. In this way all large, marrow spaces are opened, the best possible drainage obtained, the firm inner wall is left which keeps the jaw in shape and an opportunity is given to retain the teeth. This method is far superior to incisions in the mouth. The gravity of the disease demands radical treatment and leaves us little choice as to whether scars should be left or not. Subacute and chronic cases are a law unto themselves and no definite method of treatment can be laid down for their relief. In general we may say that the treatment of each case is a hunt for diseased teeth, pockets of pus, and sequestra. Sequestra representing the entire thickness of the jaw should be left until a firm involu-

crum is formed in order to minimize deformity. These cases need careful watching, as acute exacerbations occur frequently and are troublesome and dangerous. Trismus is frequently an annoying feature and rectal or nasal feeding may be necessary. Hot applications externally may give some relief from this condition, which is usually a combination of muscular spasm and inflammatory oedema. Lymphadenitis and angina Ludovici may occur at any time. The latter demands immediate surgical intervention.

MEDICAL RECORD.

September 18, 1909.

1. Some Practical Aspects of the Surgery of the Peritoneum. By W. A. NEWMAN DORLAND.
2. The Significance of Certain Pathological Conditions in the Fossæ of Rosenmüller. By J. W. JERVEY.
3. The Influence of Meteorological and Climatic Conditions on Metabolism. By JOHN BENJAMIN NICHOLS.
4. Anæsthesia in the Control of Inflammation. By JOHN W. WAINWRIGHT.
5. Our Medical Educational System. By O. L. MULOT.
6. A Clinical and Bacteriological Study of Forty-One Consecutive Cases of Diphtheria. By E. E. WUTTKE.
7. Compilation of Some Facts Concerning High Frequency Currents. By W. PARKER WORSTER.
8. Report of a Case of Hæmorrhagic Renal Infarct. By FORBES R. MCCREERY.

3. The Influence of Meteorological and Climatic Conditions on Metabolism.—Nichols says that in an atmosphere having the temperature of the body loss of heat by radiation conduction would be completely checked, while in air saturated with moisture loss of heat by evaporation would be blocked. If both these conditions should coexist, practically all means of heat escape would be cut off, and the organism would be greatly embarrassed. With heat elimination obstructed, and oxidation and heat production undiminished (or even increased through the overwarming of the body cells), the temperature of the body must necessarily rise; and while this rise would again somewhat favor radiation conduction, yet the conditions would be very oppressive and even dangerous. These considerations explain why the combination of great atmospheric heat and humidity brings about so great bodily discomfort, and introduces just the conditions favoring the incidence of heat stroke or insolation. Muscular activity under these circumstances is especially trying, on account of the excess of heat generated, and the difficulty of its elimination. There are other factors that influence heat dissipation and metabolism, and concern hygiene and diet, which do not properly pertain to atmospheric conditions. Clothing, for instance, acts as a shield against heat loss, and hence economizes oxidation. At the higher temperatures it is important that the clothing should retard heat dissipation as little as possible. Obesity also is a factor. An abundance of subcutaneous fat, by presenting a relatively less body surface for heat dissipation, and by protecting against radiation conduction and evaporation, lowers metabolism. At higher temperatures with humid air heat loss is so much interfered with in obese persons as to cause them to suffer more distress under these circumstances than slender subjects. These considerations, based on experimental demonstrations, indicate the need of a generous diet in cold weather or cold climates to make up for the greater heat

loss. There is no necessity for an increase of nitrogenous food in the cold, as energy yield only is needed, for which purpose fat and carbohydrate admirably serve. In hot, humid weather it is especially important, for the individual's comfort and safety, that heat elimination be adequate. Heat production should be reduced to a minimum, as by avoiding muscular activity. The diet is not the greatest factor affecting the amount of body oxidation, as any excess of food not required to be burned up to provide for the body activities is stored up in the body. However, excess of food does to some degree increase body oxidation, carbohydrate least, and protein much the most. Hence is indicated rather spare diet in hot weather, especially of nitrogenous food. However, in obese persons a spare protein diet might be of advantage, through its effect in diminishing the store of body fat and so improving the conditions for heat dissipation.

4. Anæsthesia.—Wainwright remarks that if irritation in anæsthesia can be avoided, inflammation will not occur; and it would follow that this treatment should not be confined to merely local conditions, but should be extended to inflammations of deep seated structures as well. The nerve trunks supplying a number of organs or areas can, many of them, be reached by local anæsthetics or by such narcotics as will control pain, thus influencing localized irritation, and so the damage to organs or tissues can be avoided. This opens up a wide field for experimentation with a prospect that success will follow.

6. Diphtheria.—Wuttke gives a statistical review of forty-one cases of diphtheria. He remarks: Thirteen cases had a typical pseudomembrane. The bacilli were longer than in the nonmembranous, averaging 3 micra on the twenty-four hour cultures, they ran a more severe course and were frequently followed by paralyses. Twenty-eight cases never exhibited membrane at any time. The bacilli in these nonmembranous cases were smaller than those in the cases with membrane, running from 1 to 3 micra, most of them being about 1.5 micra long. These cases ran a milder course throughout, responded readily and in a characteristic manner to treatment by antitoxine; paralysis developed in none. It would seem that in these cases the bacilli belonging to the short variety were not so virulent as the longer forms in the cases with membrane. One case followed a peritonissilar abscess after its spontaneous rupture. Two cases followed scarlet fever, with an interval of perfect health of four and seven weeks, respectively. One case was followed by an abscess due to staphylococci and streptococci which was treated surgically. Paralytic sequelæ were noted in five cases. In three of these there was a myocarditis. Antitoxine in doses of 4,000 units was administered to all cases as early as possible. In two advanced cases this dose was repeated twice. Recovery was complete and prompt in all cases. No local treatment was used in any case. Prophylactic doses of 1,000 units each were given to fifty-four individuals who had been exposed. In none of these the disease developed. The only undesirable effect of the serum noted was an urticarial eruption in about 20 per cent. of all cases, but most frequently in those cases in which only 1,000 units had been administered.

BRITISH MEDICAL JOURNAL.

September 4, 1909.

This is the Educational Number of the *British Medical Journal*.

THE LANCET.

September 4, 1909.

1. Cancer in Man and Animals, By E. F. BASFORD.
2. Presidential Address Delivered before the British Association for the Advancement of Science at Winnipeg on August 25, 1909.
By Professor Sir J. J. THOMSON.
3. Experiences in the Treatment of Distal Paralysis by Nerve Anastomosis, By A. H. TUBBY.
4. A Possible Natural Enemy to the Mosquito.
By J. MITFORD ATKINSON.
5. A Case of "Delayed Chloroform Poisoning" Treated with Dextrose; Recovery, By A. A. WEIR.
6. The Vacuolation of the Blood Platelets: An Experimental Proof of Their Cellular Nature,
By HUGH C. ROSS.
7. Domiciliary Medical Treatment under the Poor Law,
By MAJOR GREENWOOD.
8. Motoring Notes,
By C. T. W. HIRSCH.

4. **A Possible Natural Enemy to the Mosquito.**—Atkinson states that in the summer of 1908 it was reported to him by Mr. Gibson, the colonial veterinary surgeon of Hong-Kong, that he and Inspector Watson had seen flies eating mosquito larvæ in the nullah and streams adjacent to the cattle depôt at Kennedy Town in that colony. He had some of these collected and sent to the Tropical School of Medicine, London, where they were recognized by the entomologist Alcock, as belonging to the dolichopodides, many of the species of which family have well known aquatic propensities; they were, however, too much damaged on arrival to be specifically identified. This summer, toward the end of April, Atkinson went to Kennedy Town with Mr. Gibson and they saw hundreds of flies eating larvæ in the nullah and also in the streams near by. On stirring up the stagnant water at the sides of the nullah crowds of larvæ were disturbed; the flies pounced down upon them and rapidly devoured larvæ almost as long as their own bodies. At times they would fly away with the larvæ in their mouths. These were evidently all of the same species. Some were collected and sent to England and were identified by Mr. E. E. Austen, the dipterologist at the British Museum, as belonging to the species *Lispa sinensis*, Schiner, of the family of anthomyiidae, or flower flies.

5. **A Case of Delayed Chloroform Poisoning.**—Weir reports such a case. The patient, a boy, nine years of age, was operated upon for appendicular inflammation. The anæsthetic administered was chloroform, which was taken exceedingly well, the time occupied being about three quarters of an hour. After the operation the patient was restless and complained a good deal of thirst, but he vomited once only and that was twelve hours afterward. Saline solution was administered per rectum on account of the thirst. For forty-eight hours the patient seemed well, except for the restlessness; the temperature was normal and the pulse quite good. The condition as far as the operation was concerned seemed so good that one felt inclined to attribute the restlessness to the boy's disposition. On the following day, however, the restlessness had become a maniacal delirium, the patient

screamed, threw the clothes about, tore off his dressings, and had to be placed under mechanical restraint. By this time Weir decided that the case was one either of "acute postoperative mania," or "delayed chloroform poisoning." The almost entire absence of vomiting seemed in striking contrast to all reported cases of delayed chloroform poisoning, but he was inclined to favor the latter diagnosis and administered sodium bicarbonate by rectal injection. The urine showed diacetic acid, and although the quantity of urine was not measured it was judged by the nurse to be about normal; there was no albumin. The rectal injections and sodium bicarbonate were continued; and acting on a suggestion made by Dr. A. P. Beddard, a solution of glucose, half an ounce to half a pint of milk, was administered by the nasal tube and a 10 per cent. solution by the rectum. This was given four hourly, in addition to a good supply of carbohydrate food. For the next twenty hours the patient went from bad to worse, the face became a rich plum color, the coma deepened, frothy saliva oozed from the mouth, and the prognosis seemed absolutely hopeless. Typical Cheyne-Stokes respiration was present, and the sweating was profuse. The pulse, however, remained good, and was never above 108 per minute, and the patient retained everything given by the nasal tube and per rectum. After remaining in this bad condition for a few hours he began to show a little improvement, the first sign being an attempt to move his head. Within six hours from this first sign of improvement the change was nothing short of marvelous, and the prognosis from seeming absolutely bad seemed absolutely good. Within six hours, in fact, the boy's intellect was quite clear and he expressed a wish for some food. Recovery was perfect.

LA PRESSE MEDICALE.

July 17, 1909.

1. Novocaine in Dentistry, By G. MUKÉ.
2. Tincture of Iodine for Antisepsis of the Skin in Experimental Surgery, By E. GLEY.
3. Erythema Nodosum and Tuberculosis,
By ANTONIN PONCET.

July 21, 1909.

1. Repeated Cæsarean Section, By M. GARIPUY.
2. The Action of Fats in Excessive Gastric Secretion,
By ALFRED MARTINET.
3. When Does the Pupillary Reflex to Light Appear for the First Time in the Newborn, By A. MASITOT.
4. A Cerebral Antitoxine. Its Preparation, Action, and Usage,
By MAURICE PAGE.

1. **Repeated Cæsarean Section.**—Garipuy says that it is well demonstrated that the uterus regains its normal function during pregnancy following a Cæsarean section performed according to our modern technique, if the patient has been operated upon for the first time. But the termination of this pregnancy necessitates, with rare exception, a second hysterectomy; and in this case there will appear operative difficulties which will force us to modify our technique, but which are not grave enough to give up the operation entirely.

2. **The Action of Fats in Excess of Gastric Secretion.**—Martinet confirms the observation of others that a fat régime is beneficial in hyperchlorhydria, excess of gastric secretion, ulcer of the stomach, gastrorrhœa acida. He also speaks of the

great benefit derived from the administration of from 25 to 150 c.c. olive oil in gallstone troubles. The action of the oil is threefold, it greatly retards secretion, it is a good nutrient, and regulates the stools. The only objection to the oil is the aversion to it found in some patients. In such cases it is best to prescribe fat in the form of fresh milk or cream, fresh almonds, and bone marrow. The substitution of olive oil for butter in the preparation of food is also recommended.

4. **A Cerebral Antitoxine.**—Page remarks that the brain possesses a special antitoxine which can be isolated; its action is shown in the increase of arterial pressure, in the excessive secretion of the phosphates, and in the general strength and weight, while there will be a decrease of the conjugate sulphur ethers and of indican. The daily hypodermic injection of this antitoxine will ameliorate a number of nervous affections and cure others more radically, more surely, and in half the time than all other medication.

July 24, 1909.

1. Posttraumatic Nervous Disturbances,
By PROFESSOR BRISSAND.
2. Death from Posttraumatic Delirium Tremens Reviewed from the Legal Aspect.
By EMILE FORGUE and EMILE JEANBRAU.
3. Consolidation in the Eye from Trauma,
By PROFESSOR DE LAPERSONNE.
4. Obligatory Post Mortem Examinations after Occupation Accidents.
By MAURICE LETULLE.
5. Sensory Disturbances and Occupation Accidents,
By J. A. SICARD.
6. Examinations after Accidents in People Insured against Accidents.
By P. DESPOSES and L. DUVEY.

1. **Posttraumatic Nervous Disturbances.**—Brissand reviews the opinions expressed at the last International Congress of Medicine held at Rome in regard to occupation accidents. Special institutions should be opened in which the persons suffering from such accidents should be treated and observed, for the benefit of the patients, for the protection of the employers against malingering of such patients, and for the speedy legal settlements of damage suits.

July 28, 1909.

Systematic Hyperæsthesies and Allied Disturbances,
By FERNAND TRÉMOLIÈRES.

LA SEMAINE MEDICALE.

July 21, 1909.

Biological Classification of Neuroses and Psychoses,
By M. KLIPPEL.

July 28, 1909.

A New Sign of Aortic Insufficiency: Circulatory Hippus,
By MICHEL LANDOLFI.

A New Sign of Aortic Insufficiency: Circulatory Hippus.—Landolfi has examined twenty-four patients with grave aortic insufficiency, and found in one circulatory hippus. The patient suffered from arteriosclerosis with aortic insufficiency and hypertrophy of the left ventricle. A rapid alternate contraction and dilatation of pupil was observed. He was also able to produce this sign in three other patients after giving fifteen drops of tincture of digitalis a day for four days. He also observed the circulatory hippus in a dog with experimental aortic insufficiency after the administration of heart stimulants.

MEDIZINISCHE KLINIK.

July 25, 1909.

1. Blood Pressure and Treatment at Spas,
By H. STRAUSS.
2. The Infiltration Treatment of Sciatica, By ANTON BUM.
3. Streptococcus Experiments,
By R. ZÖPPRITZ.
4. Colloid Chemistry and Balneology,
By H. SCHADE.
5. Treatment of Ankylosis by Injections of Fibrolysin,
By KARL KNOTZ.
6. Articular Rheumatism and Rubeola,
By A. V. KIRCHBAUER.
7. Arterial Thrombosis in the Course of Croupous Pneumonia,
By K. NIELSEN.
8. Treatment of Typical Fracture of the Radius,
By PAUL GLÄSSNER.
9. Treatment of Tabes Dorsalis,
By FRITZ ROSENFELD.
10. Comments on the Preceding Article,
By G. J. MÜLLER.
11. The Coating of Pills Intended to Act on the Small Intestine with Keratin in the Light of More Modern Investigation,
By GOLODETZ.

1. **Blood Pressure and Treatment at Spas.**—Strauss maintains that an increase of blood pressure is contraindicated of treatment at a certain spa only when the mineral water in question is otherwise contraindicated in the particular case, and that in nephrogenous increase of blood pressure an advantage rather than otherwise is to be expected from a suitably chosen spa.

2. **Infiltration Treatment of Sciatica.**—Bum describes carefully the technique of injecting large quantities of physiological salt solution containing eucaïn, 1 in 1,000, into the sheath of the sciatic nerve at the foramen ischiadicum majus in idiopathic sciatica and gives the following tabulated results in 274 patients thus treated. One hundred and sixty-nine, 61.7 per cent., cured; fifty-four, 19.7 per cent., improved; thirteen, 4.7 per cent., recurred; thirty-eight, 13.9 per cent., unimproved. Of these cases forty-six were subacute; of these twenty-four, 52.2 per cent., were cured; eleven, 23.9 per cent., were improved; three, 6.5 per cent., recurred; and eight, 17.4 per cent., were unimproved. Two hundred and twenty-eight were chronic cases; of these one hundred and forty-five, 63.5 per cent., were cured; forty-three, 19 per cent., improved; ten, 4.4 per cent., recurred; and thirty, 13.1 per cent., were unimproved. If the improved and the recurrent cases are classed with the unimproved the treatment resulted in the 274 cases is 169, 61.7 per cent., successes, and 105, 38.3 per cent., failures. The number of injections was one in twenty subacute, and 101 chronic cases, two in twenty-one subacute and 114 chronic, three in five subacute and nine chronic, and four in four chronic cases. The operation of injection or infiltration, must be performed with the most rigid antiseptics, and the author seems to think that the effect is produced by the bloodless solution of perineuritic adhesions to the sheath of the sciatic nerve, which is not always complete.

3. **Streptococcus Experiments.**—Zöppritz comes to the following conclusions: 1. By the addition of stocks of streptococci vaginal secretion, milk or saliva may be changed from hæmolytic to nonhæmolytic, or the reverse. 2. No basis for the separation into different varieties can be found in the action of humoral and leucocytic bacteriocides upon the separate stocks. 3. The bacteriocide power of the vaginal secretion is caused in the first place

by the leucocytic bactericide contained in it. Commenting on this paper Much says that streptococci are of the same species, but that there are various modifications or types which produce different diseases. They arise from unknown influences, they can be transformed into each other, the virulent into the nonvirulent, that of one disease into that of another. But when a type in a diseased body has become stable it usually no longer changes itself but calls forth a disease characteristic of its type. Finally the condition of hæmolytic streptococci outside the blood and outside of the focus of inflammation tells nothing in regard to their pathogenesis.

5. Treatment of Ankylosis by Injections of Fibrolysin.—Knotz reports a number of cases of ankylosis of various joints treated with fibrolysin with varying results, some of them brilliant.

9 and 10. Treatment of Tabes Dorsalis.—Rosenfeld reports two cases of tabes in which he used the injections of thiosinamin as recommended by Müller, but without benefit. Müller's comment is that Rosenfeld's experience confirms the well known fact that no remedy is successful in all cases, and refers again to his own successful experience.

11. Coating of Pills with Keratin.—Golodetz explains the contradictory reports of writers concerning the efficiency of keratin as a coat to protect a pill from dissolution in the stomach and to allow dissolution in the intestine. He finds that such pills have been coated with five different substances which he designates as, 1, keratin A; 2, keratin B; 3, hornalbuminose; 4, caseinalbuminose; 5, keratin according to the pharmacopœia. Of these keratin B alone completely fulfills the necessary conditions, as it is insoluble in water, hydrochloric acid, and pepsin; but soluble in slightly alkaline solutions. Hence keratin B forms the coat which gives satisfaction.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 27, 1909.

1. Physiology of the Secretion of Milk, By CRAMER.
2. Arteriosclerotic Conditions of Temper, By WEBER.
3. The Influence of the Blood Serum of the Mentally Diseased upon the Cobra Poison Hæmolysis, By EISNER and KRONFELD.
4. Studies Concerning the Much-Holzmann Psychoreaction, By SCHULTZ.
5. The Cobra Venom Reaction in the Mentally Diseased, By PLAUT.
6. Treatment of Tuberculosis with a Specifically Acting Preparation of Iodine, By TURMANN.
7. Experimental Conjunctival Reaction with Deuteroluminose, By WEHRAUCH.
8. Union of Fresh Ruptures of the Perineum, By BETZ.
9. Increase of Leucopenia in a Case of Peritonitis from Perforation Occurring in the Course of an Attack of Typhoid Fever, By MEYER.
10. Lightning Stroke the Exciting Factor of a Psychosis, By BECKER.
11. Purpura Hemorrhagica Fulminans with Necrosis. Reviews, By LANOWEHR.
12. A Simple Trocar for Aspiration of Pleural Exudates, By PAYSEN.
13. Heligoland and Hay Fever, By SCHULTZ.
14. Transplantations of the Spleen (concluded), By LÜDKE.
15. The Medical Part of Leipzig, By SCHIFFE.

1. Physiology of the Secretion of Milk.—Cramer maintains that the breast gland is to a certain degree independent of the other genital organs and that its function can be excited by suction alone.

3, 4, and 5. The Cobra Venom.—Eisner and Kronfeld, Schultz, and Plaut confirm many of the observation of Much and Holzmann in regard to the prevention of hæmolysis of human blood by cobra venom by the addition of serum from persons mentally diseased, but deny that certain diseases can be distinguished in this manner.

RIFORMA MEDICA

July 19, 1909.

1. Atrophy of the Hand, of the Aran-Duchenne Type, By R. CIARI.
2. A Clinical and Statistical Study of 206 Cases of Cancer of the Breast, By LUIGI FIORI.
3. A Case of Multiple Cysticercus of the Brain, By ALBERTO ZIVERI.

1. Aran-Duchenne Atrophy.—Ciari reports a case of congenital, hereditary, nonprogressive segmentary atrophy of the hand, constituting a partial arrest of development, simulating progressive amyotrophy of the Aran-Duchenne type. The patient was a woman, aged fifty-six, whose uncle had shown the same changes in his hands. Her father showed absence of the middle finger and the ring finger of the right hand, together with rudimentary thumb and little finger, and atrophy of the thenar and hypothenar eminences. Similar deformities were shown by the patient's brothers and sisters and by all her children. On examination, the bony skeleton of the hands was found to be well developed, but the muscles were atrophied, the extremity assuming the aspect of a simian hand. There were no fibrillary contractions, and the movements of the thumb were limited. The arm and forearm were normally developed. The author speaks of two types of amyotrophy of the hand, the congenital and the hereditary, nonprogressive types. The latter was present in the cases observed, and depends upon a nondevelopment of the anterior cervical horns, while the progressive, extrauterine amyotrophy, or the true type of Aran-Duchenne, depends upon trophic changes in the same nuclei which results in the nondevelopment of the muscles, under the influence of environment.

2. Cancer of the Breast.—Fiori presents an elaborate analysis of 206 cases of cancer of the breast from the viewpoint of statistics and of operative results. In summing up the results of his studies, Fiori dwells upon the fact that during the last few years surgeons have gradually been extending the limits of operable cases, and many cases that have formerly been regarded as inoperable have come under the knife. For this reason deaths from local recurrences have gradually become less frequent since 1895. While these deaths occurred in 40.9 per cent. of cases before that year, they have now fallen to 29.5 per cent.—an incontrovertible proof of the efficiency of modern operative methods. An interesting point was the time of appearance of the recurrences. In a total of nineteen cases, twelve patients showed the appearance of recurrences within the first year after the operation, while the other seven showed these recurrences within two and a half years. Recurrences, therefore, as a rule, occur quite early after the operation, and if no recurrence has come to light within three years, it may be said that the chances are against the reappearance of the disease. In the nineteen cases observed in which

the disease was apparently cured, the length of time during which the patients were free from recurrences varied from three to thirteen years. The mortality from the operation itself in this series was nil. The author does not use the radical method of Halsted. He opposes the method, not because he is timid and fears that the procedure might be too radical, but because he holds firmly to the conviction that the removal of the cancerous breast is sufficient if the entire affected area is thoroughly removed. The author points to his operative mortality as a proof that his methods did not imperil the patient's life. In conclusion, he points out that the results of operative treatment of mammary cancer are now very satisfactory, but urges the necessity of early operation, based upon instruction of physicians and midwives in the diagnosis of incipient cases of cancer of the breast. In one case in which the cancer was inoperable, he attempted to cure the growth by removing the ovaries and uterus. The woman was forty years of age and had a very extensive epithelioma of the breast. The operation, however, did not arrest the development of the disease, and the patient died a month later.

ROUSSKY VRATCH.

July 4, 1909.

1. How Long Can the Excreta of Cholera Patients Remain Infectious? By A. G. FILOFF.
2. A New Method of Operation for Femoral Hernia, By A. A. ABRAZHANOFF.
3. Some Pathological Data from the Epidemic of Cholera in Kronstadt, in 1908, By A. D. VOLOSCHINE.
4. Twenty Cases of Subtotal Resection of the Stomach for Cancer, By S. F. DERZHINSKI.
5. The Cutaneous Reaction in Surgical Tuberculosis, By I. S. MAKOFSKI.
6. The Conjunctival Reaction of Wolf-Eisner, By V. A. BIELIOFSKI.
7. On the Fate of Salicylic Acid in the Body, By I. V. ZAVADSKI.
8. Psychoses of Pregnancy as an Indication for the Interruption thereof. A Few Words Concerning the Responsibility of the Physician (Concluded), By I. U. IAKUB.

1. **Infectiousness of Cholera Excreta.**—Filoff concludes from the study of nine cases that cholera excreta may be the source of infection for three months or more. This fact is of importance to sanitary authorities during epidemics of Asiatic cholera.

3. **Pathology of Asiatic Cholera.**—Voloschine, on the basis of his studies at Kronstadt, concludes that the different stages of cholera do not show distinct pathological lesions, which would distinguish one stage from the other. Necrosis, however, is more frequently found in the algid stage, while fatty degeneration is more common in the stage of reaction. The most marked pathological changes occurred in the pancreas. There were frequently diphtheritic areas in the intestinal mucosa. Changes in the vessels are prominent, including great and marked dilatation, more extensive in some places than in others, and capillary hemorrhages. In the cases treated by means of saline infusions into the vessels, the pathological changes were not quite so marked.

5. **Cutaneous Tuberculin Reaction.**—On the basis of his experience, Makofski concludes that a positive cutaneous tuberculin reaction is of no value

whatever in doubtful cases of surgical affections, inasmuch as it is observed in fifty per cent. of clinically healthy persons. A negative tuberculin reaction, however, may be of value in distinguishing other classes of cases from tuberculous affections. It must be borne in mind, however, that in advanced cases of tuberculosis the reaction may be absent, although there can be no doubt as to the diagnosis. The various types of reaction occurring in evident tuberculosis of the bones and joints may have some influence upon the character of the treatment to be recommended, but this matter is still unsettled.

7. **On the Rôle of Salicylic Acid in the Body.**—Zavadski, studying experimentally the fate of salicylic acid in the human organism, finds that the theory that this acid combines with glycuronic acid in the blood and tissues, is very probable. As regards the relation of the constitution of this paired compound to the action of ferments, he finds that the compound is not of the glucoside type. A more definite conclusion was not permissible from the facts noted. Zavadski found, furthermore, that the combination of salicylic acid with glycuronic differed materially from that described by Baldoni. The latter found a crystalline paired acid with a high melting point, easily soluble in ether, giving a blue color with ferric sesquichloride. Zavadski found a syrupy substance, but slightly soluble in ether, giving no color with the ferric reagent.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

September, 1909.

1. Infection of the Urine and the Urinary Tract by *Bacillus Coli* in Infancy, By JOHN LOVETT MORSE.
 2. The Diagnosis and Treatment of Bilateral Cystic Kidneys, with Special Reference to the Determination of the Renal Function, By MARTIN KROTOSZYNER.
 3. The Value of the Wassermann Reaction in Cardiac and Vascular Disease, By JOSEPH COLLINS and B. SACHS.
 4. The Various Types of Plague and their Clinical Manifestations, By KHAN BAHADUR N. H. CHOKSY.
 5. Leprosy in the Philippine Islands and its Treatment, By VICTOR G. HEISER.
 6. Luetic Bursopathy of Verneuil, By JOHN W. CHURCHMAN.
 7. Chorea a Symptom, not a Disease, By GEORGE MONTAGUE SWIFT.
 8. The Practical Value of the Association Test, By PEARCE BAILEY.
 9. The Importance of Blood Cultures in the Study of Infections of Otic Origin, By E. LIBMAN and H. L. CELLER.
 10. Tuberculin Treated Guinea Pigs in the Recognition of Tuberculosis, By GEORGE E. EBRIGHT.
2. **Bilateral Cystic Kidneys.**—Krotoszyner remarks that polycystic degeneration of the kidneys is in almost all instances a bilateral affection. In cases in which, for the time being, one kidney appears to be anatomically and functionally healthy, an involvement of this organ may be expected to develop later. Determination of the kidney function is indispensable prior to decision upon any operative procedure. Nephrectomy in cystic kidney is always contraindicated. Excruciating pain, general sepsis caused by suppurations of cysts, profuse hæmaturia, and distressing symptoms due to the presence of enormously large cysts are, under favorable conditions (good renal function), indications for operative interference. Nephrotomy with puncture of cysts, decapsulation, and nephrofixation are the

operative procedures which in selected cases may give satisfactory (temporary) results.

3. Value of the Wassermann Reaction.—Collins and Sachs observe that from a study of thirty-six cases of cardiac and vascular disease the importance of syphilis as a causative factor is established in a very large percentage of all the cases. The highest percentage was obtained in cases of aneurysm, in which a positive Wassermann reaction was obtained in all of five cases. In the cases of aortic disease ten out of thirteen cases gave a strongly positive reaction; two gave a weak positive reaction. In marked contrast to this are the cases of diffuse chronic endocarditis affecting the mitral valve, in which only one of the seven cases gave a positive reaction. The inference is justified that rheumatic and other infectious agencies are a much more potent aetiological factor in diffuse chronic endocarditis than is syphilis. Taking all these facts into consideration, there can be little doubt that when we have pronounced symptoms of aneurysm or aortic disease it is well to suspect syphilis, even though the manifestations may be latent. Citron is no doubt right in believing that syphilis is by far a commoner cause of aortic insufficiency than the history and the clinical findings would seem to suggest. Even in those cases in which articular rheumatism and other infectious agents may have played some sort of rôle, and in which metallic poison or abuse of alcohol or of nicotine are admitted, if a Wassermann reaction gives positive results, antisyphilitic treatment should be instituted, whatever else may have been discovered regarding the antecedent history of the patient. No doubt articular rheumatism and syphilis occur often enough in one and the same individual, and if the course of antisyphilitic treatment has been decided upon, we may at least ask that it be properly administered. The authors are in favor of the routine treatment by hypodermic injection of mercury. They leave the choice of a soluble or insoluble salt to the experiences or the prejudices of the individual practitioner. Their best results have been obtained by the use of deep subcutaneous injections. It may be argued that little is to be expected from antisyphilitic treatment in an advanced case of aortic insufficiency or of aneurysm. In some of their cases marked improvement in the cardiac and vascular symptoms has followed upon such treatment, but even if the vascular system should not improve upon the mercurial treatment, a positive Wassermann reaction would justify vigorous specific treatment for the purpose of preventing serious syphilitic involvement of other organs and systems of the body.

5. Leprosy in the Philippine Islands and Its Treatment.—Heiser states that the experience in the Philippines during the past three years demonstrates that segregation has decreased the incidence of leprosy by over fifty per cent. Of all the treatments tried, the x ray is the only one which produced a cure, but as yet it is suitable only for specially selected cases.

7. Chorea a Symptom—not a Disease.—Swift observes that the great mistake has been in regarding the occurrence of incoordinated muscular movements in the young as a disease, an entity. If we put the idea of a disease out of mind and look

upon the incoordinated muscular movements as a symptom, or manifestation of some underlying condition, we immediately solve what has seemed a difficult problem. As a matter of fact, in practice we so regard it, and we treat it as a symptom. The causes of incoordinated muscular movements are many, and such movements we find in the old as well as in the young. In the old we consider these movements when occurring just prior to death, in the course of an arteriosclerosis, as due to faulty nutrition and failure of action of the motor control cells. The same sort of movements appearing in the course of a severe illness, a toxæmia, or at a time of great stress, we also explain as due to faulty nutrition or lost action of the motor control cells; as due to poisoning of them, or due to their exhaustion by overaction. We do not consider the incoordinated movements as being a disease in themselves. Why, then, when such movements occur in children under certain conditions, should we regard them as due to something quite different? Especially when we know that the normal condition of childhood is constant muscular activity, and that anything that weakens the child naturally weakens the nervous control, and so may permit unrestrained muscular action. If we regard these incoordinated muscular movements as a symptom, or indication of some underlying cause, we frequently can present a satisfactory explanation of them. Such exciting cause may be anything, a condition, infection, or disease which will bring about a weakness, a disability, a malnutrition, or a degeneration of the motor control cells. Some individuals will succumb to such conditions more readily than others; some are predisposed; all cases will not be due to the same cause, nor will they pursue the same course. If we try to classify the cases in accordance with the more evident exciting causes, we put ourselves in the way of being able to treat them reasonably, and also supply as well a pathology of the condition. We also do away with the diagnosis "chorea," which is in the same class as the diagnosis "convulsions," "jaundice," "dropsy," a symptom only.

AMERICAN JOURNAL OF SURGERY.

September, 1909.

1. The Cancer Problem from a Surgical Viewpoint; with a Possible Explanation of the Remarkable Freedom of the Duodenum from Cancer Invasion.
By RICHARD WARD WESTBROOK.
2. Excision of Sternum for Sarcoma. By A. E. ISAACS.
3. Some Notes on Otic Brain Abscess.
By W. SOHIER BRYANT.
4. Some Remarks on Abscess of the Brain; Report of Two Cases, with Death from Insufficient Exploration.
By W. H. MAGIE.
5. A Brief Review of the Applications of Röntgen Rays in Diagnosis.
By E. W. CALDWELL.
6. Fibroids and Pregnancy.
By CHARLES LYERLAND BONFIELD.
7. Appendicectomy.
By JEROME M. LYNNCH.

3. Otic Abscess of the Brain.—W. Sohler Bryant remarks that the spread of infection from the ear to the brain is accomplished in four ways: (a) Through the tegmen tympani into the middle fossæ. (b) Through the internal auditory meatus and aqueducts into the posterior fossa. (c) Through the inner table covering the sigmoid groove which covers the sinus, into the posterior fossa. (d) Through the spread of the infection from one fossa

into the next. The extension is sometimes direct, and sometimes through the occurrence of phlebitis. All varieties of brain abscess are of infectious origin. They may be the result of infection of the pharynx, of the nasal fosse, and air sinuses, or, as in the great majority of cases, the result of aural infection. Treatment is operative, and is of two kinds: 1. Peripheral exploratory operations to confirm the diagnosis, and to locate the abscess. 2. Central operation for evacuation and drainage after the abscess has been located. Exploration of all the diseased area and thorough exposure of the abscess is even more necessary than in a superficial cellulitis. The object is to obtain direct drainage rather than drainage by packing and wicks. It is best to follow the path of infection in planning the location of drainage. After care must be directed to rigid asepsis to prevent reinfection or extension of infection, preservation of drainage, and slow closure of the wound. The patient must be kept quiet for a long time after complete healing is apparent, and must be under observation for a year or more for fear of recurrence. Hexamethyltetramine (an aid or substitute for surgical treatment) given in doses ranging up to 60 grains a day, by the mouth, is a help to intracranial antiseptics.

ANNALS OF SURGERY.

September, 1900.

1. An Analytical and Statistical Review of One Thousand Cases of Head Injury. By CHARLES PHELPS.
2. Skin Grafting at the Johns Hopkins Hospital, By JOHN STANGE DAVIS.
3. Cyst of the Round Ligament of the Liver, By M. S. HENDERSON.
4. Hourglass Stomach, By WILLIAM A. DOWNES.
5. Diagnosis and Treatment of Carcinoma of the Cæcum, By EUGENE A. SMITH.
6. Resection of the Colon for Cancer and Tuberculosis, By JOHN H. GIBBON.
7. Large Phagedenic Ulcer of the Abdomen, By WILLIAM HENRY LUCKETT.
8. Inguinal Hernia in the Female, By WILLIAM B. COLEY.
9. Surgical Aspects of Chronic Hypertrophic Arthritis, By GEORGE P. MULLER.

2. **Skin Grafting.**—Davis bases his report on 544 house cases in which skin grafting was performed. Of these there were 286 breast cases, 88 leg ulcer cases, 85 miscellaneous ulcer cases, 76 contraction cases, and 9 defects following excision of keloids, etc.; 383 were females and 161 males. The average age was forty-two years, the youngest being three years and the oldest seventy-nine years. He remarks that the general health of the patient must be taken into consideration when skin grafting is contemplated, and grafts to be successful must only be transplanted to healthy wounds. As a rule grafts do not take well on luetic individuals. No antiseptics must touch the flaps before or after cutting. A general anæsthetic is necessary in the majority of cases where large grafts are removed. It is best to cover the defect with a single large graft if possible, as the healing is just as satisfactory as if several small flaps were used, and the scar is much less. Silver foil immediately over the graft has proved its worth, but it is best to apply it without the paper and not to use alcohol. Temporary moist salt gauze dressings are

also very satisfactory. Grafting, even if only partially successful, in the majority of cases will shorten the time in the hospital and accelerate final healing. Partial grafting nearly always stimulates epidermal growth from the edges of the wound. Autodermic grafts take somewhat better than isodermic, but isodermic grafts are much more successful than is generally supposed. When a black superficial graft is applied to a defect on a white person the pigment disappears sooner or later, and vice versa. The majority of Thiersch grafts, especially on breast cases, that he has examined were still adherent throughout the greater part of their extent. The shrinkage in the size of a wound after grafting is in some cases quite remarkable. Contraction is prevented to a large extent by grafting, although it sometimes occurs, especially under Thiersch grafts on exposed positions, such as the palm of the hand. In such locations the whole thickness of the skin should be transplanted. Slough of the axillary flap in breast cases has little effect on the healing of the grafts, as in many of the complete takes there was slough of the flap, and in many of the partial takes there was no slough. Mild wound infection, such as pyocyanus, seem to have little effect on the ultimate healing of the graft.

8. **Inguinal Hernia in the Female.**—Coley remarks that inguinal hernia in the female constitutes a fairly large percentage of the total number of cases of hernia observed. At the Hospital for Ruptured and Crippled during the last twenty years, there have been 59,404 cases of inguinal hernia, of which 9082 were in the female. He reports a series of 353 cases, among which number there has been no death and but two relapses. Of these patients 170 were adults and 183 children, and only 2 in this entire series were direct herniæ. Comparing this with the cases of direct hernia in the male, he has operated upon 1776 cases of inguinal hernia in the male, of which 815 were adults; 961 children. He believes that inguinal hernia in the female, or at least all cases of oblique inguinal hernia in the female, are due to a persistence of the process of peritonæum known as the canal of Nuck, which corresponds almost exactly with the vaginal process of peritonæum in the male. That this process remains patent in many children long after birth, even into adult life, has been proved by a large number of investigators. That the formation of the canal of Nuck is similar to the formation of the vaginal process of peritonæum in the male, is disputed by a number of writers, some, *e. g.*, Martin and Waldeyer, holding that this canal is a normal occurrence; others, like Duplay, believe it to be anomalous. His own belief, based upon a careful study of 350 cases of inguinal hernia in the female, operated upon personally, is that the canal of Nuck is a normal development, which remains open in all cases in which a hernia subsequently develops as well as in many other cases that never have a hernia. This congenital process of peritonæum, by its failure to close, he regards as the great and all important cause of inguinal hernia in the female, as well as in the male, although in addition there are usually present various exciting causes, such as persistent crying in infancy and young children, straining at stool, heavy lifting, and coughing in adult life.

Proceedings of Societies.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Twenty-second Annual Meeting, Held in Council Bluffs, Iowa, September 6 and 10, 1906.

The President, Dr. C. B. HARDIN, of Kansas City, Mo., in the Chair.

The Diagnosis and Treatment of Gastric Ulcer, with special reference to the Lenhartz Diet.—Dr. LEROY CRUMMER, of Omaha, said the advantages of the Lenhartz treatment were that it was more comfortable for the patient, there was less loss of weight and nutrition, the period of return to normal diet was shorter, and the tendency to relapse was less. He had had the opportunity to carry out the Lenhartz treatment in eight cases of gastric ulcer, five of which were comparatively simple cases, and the treatment was successful without modifying any of the details. One patient went through the treatment with seeming complete success and left the hospital greatly improved in weight and strength, but died suddenly a month later with some acute abdominal trouble, probably perforative peritonitis. The other two cases, in addition to the clear ulcer condition, presented severe anemia and signs of pyloric obstruction. No operation was done in chronic ulcer till the patient had had the benefit of a careful trial with the Lenhartz treatment.

Dr. JOHN P. LORD said he recalled several cases of gastric ulcer in men who did well without having undergone surgical intervention. He spoke of this to emphasize the success which attended the expectant treatment of these cases. However, when an operation was indicated in gastric ulcer, it was performed.

Dr. W. B. DEFFENBAUGH said that in the medical treatment of gastric ulcer it was important to prescribe a diet which was free from irritating material. The average diet contained many things that were imperfectly masticated; they passed over the inflamed area or through the pylorus, and kept up a mechanical disturbance.

Dr. R. C. MOORE, of Omaha, said that in his experience comparatively few cases presented the classical symptoms of gastric ulcer, but when he had one of these cases, diet was the main thing to consider. He did not resort to feeding by the rectum. He kept the patient as quiet as possible, maintained the action of the different secretory organs as best he could, and placed the patient upon such diet as could be digested. Milk was the main article. When the case took on a surgical aspect, an operation was considered, and if thought necessary performed.

Dr. W. L. ROSS, of Omaha, said that gastric troubles were functional and not organic, and we should not be in too great haste to say that this or that patient had ulcer of the stomach simply because he or she complained of pain. The whole symptomatology should be gone over in order to determine whether the cause was really located in the stomach or not.

Unrecognized Gallstone Disease.—Dr. DANIEL MORTON, of St. Joseph, Mo., emphasized the necessity for early recognition of gallstone disease. Courvoisier had found seventy-two cases with gall-

stones present out of eighty-four cases of primary gallbladder cancer. The inaugural symptoms of gallstone disease might possibly be best brought to the attention of the great body of general practitioners, therefore, by stating that cases of "indigestion," "biliousness," "neuralgia of the stomach," "gastralgia," and "autointoxication" were, in the majority of instances, in reality cholecystitis, and should be recognized and treated as such. The diagnosis could usually be confirmed by a physical examination of the gallbladder and a search for the pressure pain points described. The gallbladder, as an important factor in the causation of trouble in the organs adjacent, was rapidly assuming an increasingly important rôle.

Dr. JOHN MONROE BANISTER, of Omaha, said that he would like to relate his experience in the Philippine Islands in reference to this line of work. In the United States we did not find the conditions of extreme congestion of the liver and enlargement which we did in the tropics; consequently, a diagnosis of enlarged gallbladder was easy. While in the Philippines he did a large amount of surgical work. They had a large number of cases of liver disease to treat, and in the number of cases in which they operated they never had a single case of disease of the gallbladder. Frequently they thought they had, but in these cases the livers would be so enlarged from passive or active congestion as to fill the abdominal cavity. They made it a rule in suspicious cases to perform laparotomy as a routine measure, getting the enlarged liver out of the way, exploring, and examining the gallbladder to see if there was anything the matter with it. They found the livers of these patients were very much congested and enlarged. They made it a rule to aspirate the liver, and if they could not find an abscess they would draw off a good deal of blood, but these patients invariably did well. He had seen men who had been lying in bed for two or three weeks before they came to the hospital, and yet after this operation they began to get well and made rapid recoveries.

Dr. A. I. MCKINNON, of Lincoln, Neb., said it was possible to have biliary or gallstone colic without the presence of gallstones. Gallstones were due ordinarily to infection. Cholecystitis frequently accompanied infectious diseases, and many times the trouble began in childhood, following some infectious disease. When there was an acute cholecystitis, for instance, complicated with pneumonia, there was jaundice, and, as the growth of fibrous tissue replaced the exudate, contraction took place and obstruction to the bile tracts occurred.

Dr. A. B. SOMERS, of Omaha, said that the removal of gallstones did not always relieve or cure the primary condition, which still existed, and the patient should be taught to go to a physician when he got through with the surgeon, unless the surgeon was a physician.

Dr. W. F. MILROY, of Omaha, would go one step further than the last speaker, and say that these patients should go to see a physician before they consulted a surgeon, as he was firmly convinced that most of these patients could be cured by medical treatment and required no operation whatever.

Splenectomy.—Dr. W. B. DEFFENBAUGH, of St.

Joseph. Mo., reported a case of traumatic rupture of the spleen in which he had resorted to splenectomy with a successful result.

Dr. I. U. PARSONS, of Malvern, Iowa, said that several years ago a boy, ten years of age, fell across a wash tub, striking himself in the region of the spleen. Several physicians saw the boy, but were unable to make a correct diagnosis. Two months after the injury a tumor developed in that region. The abdomen was opened, and a large cyst of the spleen was found and drained. The boy recovered.

Dr. A. C. STOKES, of Omaha, said that the spleen had a physiological function. It had to do with infections in the production of immunity, or the swallowing up of infections. This was illustrated by the fact that so many patients who had infectious diseases were affected with enlargement of the spleen. Embryologically, and from the standpoint of comparative anatomy, the spleen was more of a remnant than anything else, for in animals it was much larger in comparison than it was in man. The blood supply was about the same.

Renal Tuberculosis.—Dr. F. KREISSL, of Chicago, read a paper on this subject in which he discussed some diagnostic and therapeutic points in the management of this disease.

The President's Address.—President HARDIN offered some suggestions with reference to the future conduct and improvement of the society.

Cancer a Constitutional Disease; its Rational Treatment.—Dr. JOHN E. SUMMERS, of Omaha, delivered the address in surgery, selecting this subject. He referred to recent investigations concerning the medical and surgical treatment in cases of cancer of the genitalia, etc., and said: Technique. First, curette thoroughly and dry carefully, then pour one half ounce of acetone through a Ferguson speculum (the patient in the Trendelenburg position). Leave this in for fifteen or twenty minutes, then let the acetone run out and pack the cavity with gauze soaked in acetone. Wash the vulva and vagina; insert a tampon. In rectal cancer follow a like practice, only introduce a tampon above the growth before using acetone. Repeat the use of acetone two or three times a week in office practice. Protect the vulva with petrolatum. The oozing is checked, and the wound surface is covered with a thin, white film. The odor is remarkably reduced. The discharge is at first watery and then disappears. The wound shrinks and tends to heal. The health improves. The opsonic index is raised. Acetone bisulphite is a white powder which, dissolving in the wound, gives off pure acetone, and may be used in place of acetone; its method of application is after the same fashion.

Besides escharotics, the x ray, and radium, which, when the cancer or sarcoma can be reached, tend to destroy or inhibit its growth, there are certain drugs of great value in the internal treatment of cancer. They are mostly of the alterative type, and usually best given hypodermically. Certain preparations of arsenic, mercury, and iron are to be commended. Iodine, I have not found so useful, but it has its friends. Having noted the fact that cancer never begins primarily in bone, and that sarcoma in which the bone element predominates are least ma-

lignant, it occurred to me that if in any way I could increase or overload the blood with lime, it would be a rational therapeutic measure in the treatment of malignant disease as a postoperative measure of prophylaxis and as a remedial agent in conjunction with the hypodermic use of alteratives. So far, I have reason to believe there is value in the remedy; so much do I think so that I hope my friends will try it. I use the lactate of calcium, given, to begin with, by hypodermoclysis, thirty grains to a drachm, in a pint of warm sterile water; later I continue the drug in ten to thirty grain doses given by the stomach in hot water, t. i. d.; it may be continued indefinitely, but at the beginning is apt to cause nausea. Thirty grains of the lactate in a pint of warm water may be injected directly into a vein. In a hopeless case of cancer of the throat I found that the lactate materially lessened the pain.

The Advantage of Cholecystostomy in Draining the Deeper Biliary Tracts.—Dr. H. G. WELP-TON, of Des Moines, said that this paper had been suggested by a serious and unexpected complication that attended two cases of cholecystectomy in his practice. The cases were of the simple type without adhesions, obstruction, or destructive changes. In one of his cases a large calculus formed with the hepatic duct above an acute angulation of the common duct. The angulation was due to an adhesion to the colon. In the other an acute exacerbation of a chronic pancreatitis came on at intervals, obstructing the common duct. His cases were only partially relieved by removing the stone, by releasing the adhesions, and by drainage. Since reviewing the literature he had limited cholecystectomy to those cases where either the gallbladder or cystic duct had been contracted or obstructed, or where irreparable damage from gangrene, infection, ulceration, perforation, or malignancy had occurred. He preferred to leave the gallbladder, when possible, since excision did not remove the infection that was in the common and biliary ducts. Gallbladder drainage offered the best means of a complete cure of the infections of the deeper tracts as well as those of the liver and pancreas. It also provided for a cholecystenterostomy in case of complete obstruction, and served as a guide to the deeper structures.

Surgical Suggestions for the Treatment of Chronic Appendicitis.—Dr. A. I. MCKINNON, of Lincoln, Neb., recommended that the incision be made high enough for examination of the upper abdomen and treatment of those parts which might be found involved. This incision could be made about the same as a gallbladder incision, the lower end being even with the umbilicus or at a point where most authorized incisions began. Through such an opening the appendix could be easily pulled up, and with the aid of the proper position of the patient the whole abdomen and pelvis would be open for examination. To further facilitate this exploration, he advocated the sitting posture of the patient in this class of operation. He had used this method for several years with great success in handling the abdominal viscera.

Scientific Feeding.—Dr. MINDA A. McLINTOCK, of Atchinson, Kansas, said that he enjoyed the best health, the keenest mentality, the highest physi-

cal powers, who could select for himself those articles of diet which would most nearly supply all the constituent parts of the body in natural proportions. To do this, first, food must contain all the nutritive elements the body required. Second, only such foods must be combined at each meal as would produce chemical harmony in the stomach. Third, the food must be proportioned so that the body would not be overfed with certain elements of nutrition and underfed with others. No less important was the observance of natural laws or idiosyncrasies, connected with age, sex, temperament, and environment, together with the season of the year, occupation, exercise, etc.

The Bacteriological Diagnosis of Epidemic Cerebrospinal Meningitis.—Dr. S. R. HOPKINS, of Omaha, presented a method of establishing a bacteriological diagnosis in this affection. He said that a Gram negative diplococcus occurred most often in the interior of the leucocytes of the spinal fluid. There were some six species of Gram negative diplococci with which it was possible to confound the diplococcus of Weichselbaum, and chief among these were the diplococcus of gonorrhoea and the so called pseudomeningococcus. But, for practical purposes, the identification of the meningococcus in the spinal fluid withdrawn by lumbar puncture from a patient presenting phenomena suggesting meningitis was a procedure fraught with little difficulty, and it was the only means of affirming a positive diagnosis. In staining by the method of Gram it was well to finish the staining process by flooding the slide with a one fourth of one per cent. solution of eosin in water, thus giving to the Gram negative bacteria a red color. In order to establish a certain bacteriological diagnosis, one should in every instance resort to cultivation of the germs on artificial media.

The Objects of Mechanical and Surgical Treatment of Infantile Paralysis.—Dr. H. WINNETT ORR, of Lincoln, Neb., said that, while in some cases the prime object of treatment was the correction of gross deformity, there were many cases in which a return of function might be obtained in muscles apparently completely paralyzed. The mechanical and surgical procedures which afforded the greatest opportunity for restoring the function of these muscles were discussed in detail.

Does the Present Conservatism in Pelvic Surgery Serve the Best Interest of the Patient?—Dr. BERNARD A. McDERMOTT, of Omaha, expressed himself as being opposed to conservatism or any plastic work in certain pelvic lesions, such as a partially diseased tube or ovary. In the latter condition the resection of a cystic or partially diseased ovary, as a routine procedure, was to be mentioned only to be condemned, as the cutting and plastic work necessary to such an operation usually produced more postoperative pain, tenderness, and general symptoms than the original condition. He had seen this follow so many times that he was convinced that, if there was any real reason for saving the ovary other than the conservation of ovarian tissue, it was far better for the patient to remove the entire ovary or leave it. In uteri containing multiple fibroids, he thought it was better to do supravaginal hysterectomy than myomectomy.

Stricture of the Urethra.—Dr. A. C. STOKES, of Omaha, summarized the treatment of stricture of the urethra thus: 1. Alkalies, diluents, and rest are serviceable in most cases of stricture—sometimes indispensable if there are any serious complications. 2. All uncomplicated strictures, not highly irritable or resilient, should be treated by dilatation with soft instruments up to No. 15 French, and with conical steel sounds afterward, reintroductions being made every third or fourth day. 3. Until we are well acquainted with the temper of a given stricture every sounding should be preceded by urotropin, followed by silver nitrate. 4. Dilatation need rarely be carried beyond the calibre of the normal meatus. 5. Any stricture resisting dilatation must be cut. 6. For the pendulous urethra, internal urethrotomy; for the perineal urethra external urethrotomy or the combined operation. 7. In general, anterior stricture of the urethra is curable; deep stricture of the urethra incurable. 8. Impassable stricture without retention may usually be overcome with whalebone bougies by time, patience, and skill. If they finally proved impassable, the treatment is by external perineal urethrotomy. 9. Retention is treated by hot baths, ether, opium, and tincture of the sesquichloride of iron; failing with these, by aspiration or by external urethrotomy without a guide. 10. Traumatic stricture may be prevented by section at the time of injury. Once having shown itself, it usually requires excision for a cure. 11. Resilient and nodular strictures are best treated by excision. 12. Irritable strictures may often be cured without cutting.

The following papers were also read: Cataract, by Dr. Flavel B. Tiffany, of Kansas City, Mo.; Dementia, by Dr. Gershom H. Hill, of Des Moines, Ia.; The Neglected Anus, by Dr. D. T. Quigley, of North Platte, Neb.; Cancer of the Breast, by Dr. B. B. Davis, of Omaha; Diseases of Metabolism as a Group, by Dr. Alfred C. Croftan, of Chicago.

Officers.—The following officers were elected for the ensuing year: President, Dr. A. B. Somers, of Omaha; vice presidents, Dr. C. R. Woodson, of Saint Joseph, Mo., and Dr. Flavel B. Tiffany, of Kansas City, Mo.; secretary, Dr. Charles Wood Fassett, of Saint Joseph, Mo.; treasurer, Dr. T. B. Lacey, of Council Bluffs, Iowa. Omaha was selected as the place for holding the next semiannual meeting in March, 1910.

New Inventions.

A NEW EXAMINING RECTAL SPECULUM.*

By DWIGHT H. MURRAY, M. D.,
Syracuse, N. Y.

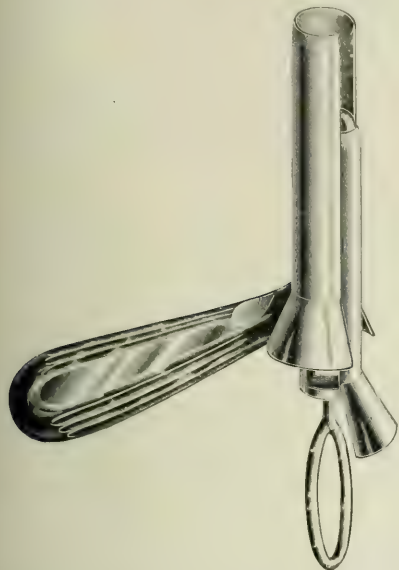
"Of the making of books there is no end" and so it seems to be with instruments.

Among the good qualities of an examining speculum there should be: 1. That it can be introduced with little discomfort to the patient. 2. That it can be withdrawn without added discomfort. 3. That it must allow a good view of the part to be

*Presented to the American Proctological Society at its meeting at the University of Chicago, 1909.

examined. 4. That it can be easily cleansed and sterilized.

I find that this speculum possesses these qualities



and take pleasure in presenting it to the society, hoping that some may find benefit in its use.

800 UNIVERSITY PLACE.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Lehrbuch der Chirurgie. Bearbeitet von Prof. KLAPP. Berlin; Prof. KÜTTNER, Breslau; Prof. LANGE, München; Prof. LANZ, Amsterdam; Prof. PAYR, Greifswald; Prof. PERTHES, Leipzig; Prof. POPPERT, Giessen; Prof. PREYSSING, Köln; Prof. DE QUERVAIN, Bern-La Chaux-de-Fonds; Prof. J. RIEDINGER, Würzburg; Prof. ROVSING, Kopenhagen; Privatdozent Dr. SAUERBRUCH, Marburg; Prof. SCHLOFFER, Innsbruck; Prof. TILMANN, Köln; Prof. WILMS, Basel; Prof. WULLSTEIN, Halle, a. S. Herausgegeben von Prof. WULLSTEIN, Halle, a. S., und Prof. WILMS, Basel. Zweiter Band. Mit 5 Tafeln und 620 zum teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1909. Pp. 460 and 611. Price, 18.50 Mk.)

The second volume closes this great variorum work. We gave a notice of the first volume in our issue of September 1, 1908, to which we refer the reader. The present volume is divided into two parts, and contains twelve chapters: The surgery of the wall of the abdomen, liver, spleen, pancreas, by P. Poppert, of Giessen; diseases of the stomach, by Schloffer, of Innsbruck; diseases of the intestine, by Lanz, of Amsterdam; diseases of the urogenital organs, by Thorkild Rovsing, of Copenhagen; surgery of the pelvis, by J. Riedinger, of Würzburg; hernias, by Wullstein, of Halle; diseases of the soft tissues of the extremities, by Rudolf Klapp,

of Berlin; deformities of the extremities, by Fritz Lange, of Munich; deformities of the extremities, and injuries to the bones and joints of the extremities, by Wilms, of Basel; diseases of the skeleton and joints, by E. Payr, of Greifswald; and amputations and exarticulations, by Ritter.

The articles seem to be well written and the editing of the book is uniformly carried out. Wullstein's chapter on hernia and Payr's on the diseases of the bones and joints appeal to us most, but it would be unjust to the other authors to call the attention to these two writers only. The illustrations are well executed, and the colors of the plates are very natural, for example in part 1 on pages 128, 129, and 362; in part 2, the plates between pages 78 and 79 and the illustration on pages 106, 349, etc. The typography is, as we said in our former review, excellent. The index is rather condensed.

Lehrbuch der Ohrenheilkunde für Aerzte und Studierende. Von Dr. PAUL OSTMANN, a. o. Professor der Medizin, Direktor der Universitäts-Poliklinik für Ohren-, Nasen- und Halskrankheiten zu Marburg a. Lahn. Mit 100 Abbildungen, 43 Kurven und 51 Hörreliefs. Leipzig: F. C. W. Vogel, 1909. Pp. viii-533. (Price, 18 Mk.)

Ostmann's work is a monumental one, dealing not only with general diagnosis, symptomatology, and therapeutics, and with the entire range of diseases of the ear, but with the local disturbances in systemic disease, the psychic manifestations and reflexes of aural origin, the injuries, intoxications, and occupational affections of the organ of hearing as well. There are special chapters on deafmutism and its therapeutic and pedagogic management, on drug diseases, and on the forensic examination of ear patients. The operative procedures are considered in a separate division, of three chapters, which is complete and advanced. This arrangement is also followed in dealing with general treatment, which includes the local manipulations. It is a most instructive and valuable work.

Die Krankheiten des Mundes. Von weil. J. VON MIKULICZ-RADEZKY und W. KÜMMEL. Zweite Auflage. Neu Bearbeitet von W. KÜMMEL, Direktor der Universitätsklinik für Ohren-, Nasen-, und Kehlkopfkrankheiten in Heidelberg. Mit Beiträgen von Prof. A. CZERNY, Direktor der Universitätskinderklinik, und Professor J. SCHAEFFER in Breslau. Mit 77 zum Teil farbigen Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. vii-295. (Price, 9 Mk.)

In his preface to the first edition of this work the recently deceased surgeon of Breslau noted that the field of oral disease was a sort of No Man's Land, of interest to the general practitioner, the dentist, the laryngologist, the paediatrist, the surgeon, and the dermatologist. The subject has been divided into diseases without special localization and those affecting the tongue, the alveolar processes, the mucosa of the lips and cheeks, the salivary glands, the floor of the buccal cavity, and so on. In the introduction the anatomy and symptomatology of the mouth and its relation to systemic infection are considered at length.

Die Stauungshyperämie nach Bier in der Ohrenheilkunde. Von Professor Dr. ESCHWEILER in Bonn. Mit 2 Curven. Leipzig: F. C. W. Vogel, 1909. Pp. 71. (Price, 2 Mk.)

Eschweiler explains the principles underlying Bier's treatment with congestive hyperæmia and reports the results of his own application of this meth-

od to various inflammatory diseases of the ear. He considers the procedure a most valuable one in all forms of suppurative otitis, and believes that the conclusions from actual practice would be still more convincing and striking if it had been possible to apply it consistently in all the cases where he considered it indicated. In America Bier's treatment does not seem to have met with general acceptance by surgeons, and in otology, particularly, the dangers inherent in this form of treatment, as well as the incidental objections to delay, have combined to bring it into disfavor after a short and perhaps too hasty trial.

The Operations of Aural Surgery. Together with Those for the Relief of the Intracranial Complications of Suppurative Otitis Media. By C. ERNEST WEST, F. R. C. S., Aural Surgeon to St. Bartholomew's Hospital, and SYDNEY R. SCOTT, M. S., F. R. C. S., Assistant Aural Surgeon to St. Bartholomew's Hospital, etc. With Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xii-201.

This concise manual deals, as indicated by the title, with operative measures alone. It is well and profusely illustrated and describes in each instance not only the steps of the surgical procedure, but also the preparation of the patient and of the field, the arrangement of instruments, the postoperative treatment and dressings, and the choice and arrangement of the instruments. The graphic representations deal perhaps too exclusively with the last mentioned, and more cuts representing the actual stages of the various operations would have increased the value of the work, which even in its present state, must be of assistance as a guide particularly for the members of the house staff and for operating room nurses.

Applied Physiology. A Handbook for Students of Medicine. By ROBERT HUTCHINSON, M. D., F. R. C. P., Physician to the London Hospital, etc. New York: Longmans, Green, & Co.; London: Edward Arnold, 1908. Pp. 298.

In the preface Dr. Hutchinson indicates that he hopes that the collection of data presented will have the same relation to the student studying practice that the various applied anatomies have to the student studying surgery. There is no reason why the field suggested should not be well filled by the work under consideration. So far as we know, this is the only book of the kind on the market.

Lezioni sperimentali sulla fisiopatologia del cuore di mammifero isolato dall'organismo. Parte 3 a. Azione sul cuore di alcune tossine e antitossine batteriche. Per il Dott. GUIDO FERRARINI, aiuto e libero docente. (Comunicazione al XXI Congresso della Società italiana di chirurgia—Roma, 27-29 ottobre 1908). Siena: S. Bernardino, 1908. Pp. 56.

Ferrarini found that when hearts of rabbits were isolated, and very dilute solutions (4:1,000 to 1:10,000) of various toxic substances were allowed to pass through them, a noteworthy toxic effect was produced. Among the toxins thus investigated were tuberculin, diphtheria, tetanus, glanders, dysenteric, and typhoid toxins, also filtrate of cultures of *Bacillus pyocyaneus*, of *Staphylococcus pyogenes aureus*, and of *Streptococcus pyogenes*. The greatest intensity was noted in the action of the diphtheria toxins, the last degree in the action of typhoid toxine. The toxic action of these poisons was

manifested chiefly in a diminution of the volume as well as the frequency of the pulsations, and finally led to cardiac paralysis, if the solution was not too dilute. Lavage of the isolated heart after injections of these toxins under favorable conditions restored vitality to the heart and counteracted the action of the toxins. Under certain conditions it was also possible to counteract the poisonous effects of the toxins by means of specific sera, and this method might be used as an indicator for the potency of certain antitoxic sera, so far as the value of these sera in counteracting cardiac depression is concerned.

Medical and Minor Surgical Diseases of Women. By SAMUEL LILE, M. D., Late Surgeon in Chief to Lynchburg City Hospital, etc. Illustrated. Baltimore: Southern Medical Publishing Company, 1909. Pp. 314.

The author has compiled a very useful book. Under minor operations he understands such operations as the general practitioner may be called upon to perform. Only a small number of us will ever become specialists, the majority being so situated that it does not matter how competent and skilful they may be, for they do not have the material nor will they have the proper place to perform major operations. But every practitioner should be able to diagnosticate cases properly and advise his patients accordingly. And in this respect Dr. Lile's book is a good *vade mecum*.

Anleitung zur Präparation und zum Studium der Anatomie des Gehirns. Von Dr. med. EMIL VILLIGER, Privatdozent für Neurologie und Neuropathologie an der Universität Basel. Leipzig: Wilhelm Engelmann, 1909. Pp. 23. (Price, Mk. 1.)

The author has succeeded in placing in the hands of the student a very good guide for dissections of the brain. As he has been a practical anatomist and is at present lecturer on neurology and neuropathology, he is in a position to judge about what is necessary for the medical student to know of the construction of the brain.

MEDICOLITERARY NOTES.

Otologists will certainly be amused if not instructed by *The Bixby Deafness*, a story of malingering, by Emilia Elliott, in the *September Century*. Most of them will sympathize, we fancy, with Dr. Allan Bixby in lending professional countenance to the fraud. Police surgeons will like the account of the police of London, by William McAdoo, and read also with pain, and perhaps astonishment, what General Theodore A. Bingham has to say of the New York police in politics. The *Century's* frontispiece are a real delight to readers who do not have many opportunities to enjoy the sight of original paintings, and may well be a source of surprise to those who possess the privilege, so faithfully do they reproduce the effect of oils.

Readers of the *Thirteen at Table* stories will note that we were duly misled—as was probably designed—in attributing the first, *With the Coin of Her Life*, to Dr. Mitchell; it was written by Owen Wister.

Many years ago Oliver Wendell Holmes wrote a letter in answer to a young man who had asked his advice in regard to studying medicine. After ex-

plaining the necessity for a sound constitution, an unselfish nature, patience, and an easy and accommodating temper, the doctor poet wound up with the following little dig at medical writers: "Medicine is very exacting. I don't believe much in literary doctors. I would not have one that was in the habit of scribbling verse or stories, or anything of the kind. Yours very truly."

Damian and Cosmas, two martyr saints who have almost the unique honor of being mentioned by name in the canon of the Roman Catholic mass, were physicians. After their conversion to Christianity they refused to accept fees for medical advice and came to be known as *Anargyri*—the Coinless. The epithet has justifiably stuck to members of the *doctum corpus* ever since.

Sir John Hill, a writer on natural history of about the time of Samuel Johnson, dabbled in both medicine and the drama. Amateurs in either of these arts have never received much encouragement from the regulars, and Garrick took the following shot at Sir John:—

Thou essence of dock and valerian sage,

At once the disgrace and the pest of the age,

The worst that we wish for thee for all thy sad crimes

Is to take thine own physic and read thine own rhymes.

Samuel Johnson himself, however, although not a student of physic, made an extraordinary forecast of our present theories in a letter to Mrs. Thrale, under date of November 12, 1781. Of some friend of the latter, suffering from dysentery, he wrote: "If Mr. B—— will drink a great deal of water, the acrimony that corrodes his bowels will be diluted, if the cause be only acrimony; but I suspect dysenteries to be produced by animalculæ which I know not how to kill."

The first part of a story by Rudyard Kipling, *The House Surgeon*, appears in the September *Harpers*; no house surgeon is visible yet, or invisible either, for it is a ghost story. Mr. Kipling pays our esteemed colleague, Sir Arthur, a literary compliment—professional courtesy, as it were—by referring not only to Sherlock Holmes, but also to Doctor Watson. There is a sort of humor in the writing quite absent, so far as we recollect, from the early mystery tales. Kipling's tragedy and comedy used to appear in layers, quite distinct like Shakespeare's.

Howard Pyle illustrates beautifully in color a tale by Josephine Daskam Bacon, and B. J. O. Nordfeldt has some attractive etchings of Barga. The editor snores musically in his Easy Chair, and in his Study gives the usual hopeless advice about reading proper for the young.

In the present turmoil over the discovery of the North Pole, no one seems to have recalled the story that Captain Hatteras, an Englishman, first visited that point in the early '70's. The adventures of the captain are recorded by Jules Verne. Altamont, an American, was second to stand on the pole, and Dr. Clawbonny, of the party, deposited the record of the discovery in a neighboring cairn. Dr. Clawbonny remarked on the absence of life, even plant life, at the pole, and recorded the pathetic circumstance of Hatteras's loss of reason, which prevented his lecturing and banqueting on his return to civiliza-

tion. The first land touched on the return of the discoverers was Zealand, which belongs to Denmark.

We pick up the *Red Book* for September and wonder where this young Western magazine finds all its good stories. It seems incredible that they are the unaided product of the authors of little known names attached to them; possibly they represent also the experienced work of a skilled editor. However that may be, it is interesting to compare this publication with one like *All the Year Round*, which in the '60's was edited by Dickens. Apart from the editor's own stories, the reading was of the dreariest possible description, not nearly so good as that on modern advertising pages. Long winded tales, intended to be tragic, but tiresome only, descriptions of persons and places devoid of imagination, and ill drawn pictures may account in part for the excessive drinking of those days.

George Fordyce, an eighteenth century writer on physiology and medicine and lecturer on chemistry, was no diet faddist. Daily, at four o'clock precisely, he used to seat himself at a table specially prepared for him in Dolly's chophouse, London. The simple and unpretentious furniture of the table consisted of a silver tankard of strong ale, a bottle of port wine, and a pint of brandy. Dr. George would begin dinner with a broiled fowl or a few whittings and then take half the brandy. A prime steak, weighing a pound and a half, formed the *pièce de résistance* and was followed by the remainder of the brandy and the ale. The port wine was finally sipped without indecent haste and the doctor was ready to proceed to meet his pupils in chemistry. George was gathered to his fathers at the early age of sixty-two years, and it is an interesting subject of speculation what could have caused the untimely demise of a gentleman of such regular habits.

Some interesting superstitions of the South are touched upon. Children are taught to chew and dip snuff as a prophylactic against disease. An axe is placed under an invalid's bed to cut off pain; sudden stoppage of pain being dangerous, it is best to use a dull axe that will cut slowly. In cases of tuberculous disease of the lungs, a basin of water is placed under the bed to stop the night sweats. Tufts of hair on top of the head are tied with string to prevent the palate from falling down the throat. Wearing a blue string around the neck inhibits the swallowing of certain diseases. Dr. Stiles believes it best, however, first to restore the health of these people and to begin their education only when they are stronger.

NEW PUBLICATIONS.

Bookerhoff, Walter R., and Moore, W. L.—Studies upon Leprosy. IV. Upon the Utility of the Examination of the Nose and the Nasal Secretions for the Detection of Incipient Cases of Leprosy. Investigations made in accordance with the Act of Congress approved March 3, 1905, by the Public Health and Marine Hospital Service of the United States. Washington, D. C.: Government Printing Office, 1905. Pp. 20.

Osler, William.—The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. Seventh Edition, Thoroughly Revised. New

York and London: D. Appleton & Co., 1900. Pp. xvii-1143.

Coblentz, Virgil.—A Manual of Volumetric Analysis. Treating on the Subjects of Indicators, Test Papers, Alkalimetry, Including Assay of Drugs by Titration, Acidimetry, Analysis by Oxidation and Reduction, Iodometry, Determinations by Precipitation, and by Color Comparison. Second Edition, Revised, Completely Reconstructed and Enlarged by Anton Vorisek. With Thirty-seven Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. viii-234. (Price, \$1.75.)

Schall, Hermann, and Heister, August.—Nahrungsmittel-tabelle zur Aufstellung und Berechnung von Diätverordnungen. Für Krankenhaus und Praxis. Würzburg: A. Stuber, 1909. Pp. 42.

Fürbringer, M.—Gegenbaur, Lehrbuch der Anatomie des Menschen. Achte umgearbeitete und vermehrte Auflage. Erster Band. Mit 276 zum Teil farbigen Textfiguren. Leipzig: Wilhelm Engelmann, 1909. Pp. xxi-867.

Warbasse, James Peter.—Medical Sociology. A Series of Observations Touching upon the Sociology of Health and the Relations of Medicine to Society. New York and London: D. Appleton & Co., 1909. Pp. xvii-355.

Ostwald, William.—The Fundamental Principles of Chemistry. An Introduction to all Textbooks of Chemistry. New York: Longmans, Green, & Co., 1909. Pp. xii-349.

Edwards, Arthur R.—A Treatise on the Principles and Practice of Medicine. Second and Thoroughly Revised Edition. Illustrated with One Hundred Engravings. New York and Philadelphia: Lea & Febiger, 1909. Pp. iv-1,257.

Webster, Ralph W.—Diagnostic Methods. Chemical, Bacteriological, and Microscopical. A Textbook for Students and Practitioners. With Thirty-seven Colored Plates and 164 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xxvii-641. (Price, \$6.)

Wharton, Henry R.—Minor and Operative Surgery, Including Bandaging. Seventh Edition, Enlarged and Thoroughly Revised, with 555 Illustrations. Philadelphia and New York: Lea & Febiger, 1909. Pp. 683.

Brückerhoff, Walter R., and Moore, W. L.—Studies upon Leprosy. IV. Upon the Utility of the Examination of the Nose and the Nasal Secretions for the Detection of Incipient Cases of Leprosy. Investigations made in Accordance with the Act of Congress approved March 3, 1905. Washington: Government Printing Office, 1909. Pp. 29.

Stiles, C. Wardell.—Hookworm Disease in its Relation to the Negro. Washington: Government Printing Office, 1909. Pp. 10.

Miscellany.

American Association of Clinical Research.—The association has sent out a letter, in which the chairman says:

A meeting of physicians and surgeons interested in scientific clinical research is called for Wednesday, October 27, 1909, at John Ware Hall, Boston Medical Library, No. 8 Fenway, Boston, Massachusetts. The meeting will come to order at 10 a. m., and carry its sessions through Wednesday, and, if necessary, through Thursday and Friday.

The object of the meeting is: First, to establish an American Association of Clinical Research; secondly, to establish clinical research on an incontrovertible scientific basis in hospitals; and thirdly, to institute an American Journal of Clinical Research, in which the work of members of the American association and of others doing clinical research work in a scientific manner shall be published.

You and your friends are herewith cordially invited to participate in this meeting and in the proposed movement of scientific clinical research. This invitation is extended to all physicians and surgeons whose interest goes beyond the immediate case work of ordinary clinical societies; and it is hoped that the invitation will be accepted by all medical practitioners irrespective of their present medical affiliations, who can appreciate the necessity for establishing on

an incontrovertible scientific basis the certainties and limitations of the present practice of medicine and surgery before attempting to add to the already large and cumbersome field of medicine.

The American Association of Clinical Research is not intended to disturb the present medical affiliations of its members nor to interfere in the very least with the duties they owe and the privileges they enjoy by virtue of their affiliation with any existing national medical body. It is to take cognizance of the fact that the clinic requires cold facts and conclusive methods, and upon these fundamental requirements, the structure and the work of the American Association of Clinical Research are to be built.

The crux of the matter appears to be that experimental laboratory proof is not sufficient clinical proof. In order to advance in an irresistible line, clinical research must be based on a conclusive form or method of clinical proof. In experimental proof, we dislocate a part from a whole and attempt to prove the whole from the part, as though a dislocated part could always prove the whole. Or, we attempt to prove facts in one species by facts in another species, as though the two species were identical. For instance, the experiments made on animals to elucidate certain elements of fever bring out a fact of almost insurmountable difference between man and the lower animals, the fact that man has associated with the nakedness of his body a highly perfected power for regulating his temperature, a highly developed vasomotor system and a vast array of sweat glands, a characteristic complex of things which apparently no other species of animal life presents. Experiments made on animals to prove febrile or other clinical phenomena in man, may be suggestive, but for obvious reasons cannot be conclusive. To prove observations in man, the observations must be made on man and not on animals. But observations on man even are not necessarily conclusive. Individual observations on man cannot be conclusive, because the same experience cannot be repeated, and when we prove by numbers, we compare similar but not identical experiences. Analogy is not conclusive proof. Identity alone is conclusive proof; but since, in medicine, identical experiences cannot be repeated, we must provide simultaneous identical experiences in order to have proof by identity. Clinical proof is conclusively established when all observations and experiments are made conjointly by at least two competent men, preferably of opposite ideas, at the same time. Conjoined critical observation and experiment, at the bedside and in the laboratory, as may be required, furnish simultaneous identical experiences, the proof proceeding on the principle that a whole can be proved only by the whole and not by dislocated parts.

Your communication, indicating your interest and your expectation of being present at the meeting in Boston on October 27, next, is eagerly awaited, and on receipt of the expression of your interest, further developments will be communicated to you personally in due time.

Please address your communications at the earliest possible date directly to James Krauss, M. D., 419 Boylston Street, Boston, Mass.

Yours fraternally.

(Signed) JAMES KRAUSS, M. D.,

Chairman, Committee, American Association of Clinical Research, 419 Boylston Street, Boston, August 18, 1909.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending September 17, 1909.

Places.	Number.	Date.	Cases.	Deaths.
Indiana—Fort Wayne.	Avg.	24 Sept.	1	0
Kentucky—Lexington.	Avg.	2-21	1	0
Minnesota—Duluth.	Avg.	20-27	1	1
Ohio—Dayton.	Avg.	28 Sept.	4	2
Oregon—eight counties.	June	1-30	27	1

Places.	Date.	Cases.	Deaths.
<i>Smallpox—Foreign.</i>			
Arabia—Aden.....	Aug. 2-9.....	1	1
Brazil—Bahia.....	July 16-Aug. 6.....	15	6
Brazil—Rio de Janeiro.....	July 11-24.....	7	1
Brazil—Rio de Janeiro.....	July 31-Aug. 8.....	8	1
Chile—Valparaiso.....	Aug. 7-14.....	Present	
Egypt—Cairo.....	July 15-22.....	3	
France—Paris.....	Aug. 3-9.....	1	
Germany—Königsberg District.....	Aug. 7-14.....	3	
India—Bombay.....	July 20-27.....	5	
India—Bombay.....	Aug. 3-10.....	4	
India—Madras.....	July 17-23.....	1	
India—Madras.....	July 31-Aug. 6.....	1	
India—Rangoon.....	July 24-31.....	1	
Italy—General.....	Aug. 8-19.....	26	
Italy—Naples.....	Aug. 15-22.....	5	
Mexico—Guadalajara.....	Aug. 12-19.....	5	
Mexico—Mexico.....	July 10-17.....	8	
Persia—Meshed-Ber.....	June 1-30.....	Epidemic	
Persia—Khorassan.....	June 1-30.....	Epidemic	
Persia—Kurdistan.....	June 1-30.....	Epidemic	
Portugal—Lisbon.....	Aug. 7-14.....	7	
Russia—Moscow.....	July 24-Aug. 7.....	32	18
Russia—Moscow.....	July 24-31.....	5	
Russia—Riga.....	Aug. 14-21.....	1	
Russia—St. Petersburg.....	July 24-31.....	6	
Spain—Barcelona.....	Aug. 14-21.....	6	
Spain—Valencia.....	Aug. 14-21.....	12	
Turkey—Smyrna.....	July 1-Aug. 6.....	30	

<i>Yellow Fever—Foreign.</i>			
Barbados—St. Joseph parish.....	Aug. 9-14.....	1	1
Brazil—Bahia.....	July 23-Aug. 6.....	3	2
Brazil—Manaus.....	July 23-Aug. 7.....	1	2
Brazil—Paraná.....	July 31-Aug. 7.....	2	2
Venezuela—Guayaquil.....	Aug. 23-Aug. 14.....	8	
Mexico—Merida.....	July 21-28.....	4	2

<i>Cholera Insular.</i>			
Philippine Islands—Provinces.....	July 18-24.....	205	147

<i>Cholera—Foreign.</i>			
China—Amoy.....	July 24-31.....	23	
India—Bombay.....	July 20-27.....	23	
India—Bombay.....	Aug. 3-10.....	30	
India—Calcutta.....	July 24-31.....	28	
India—Rangoon.....	July 24-31.....	5	
India—China—Saigon.....	July 17-24.....	3	3
Japan—Kobe.....	Sept. 13.....	Present	

Netherlands—Breda.....	In vicinity, July 31.....	1	Present
Netherlands—Dordrecht.....	Aug. 31.....	Present	
Netherlands—Gorinchem.....	Aug. 31.....	Present	
Netherlands—Rotterdam.....	Aug. 20-28.....	21	8
Netherlands—Utrecht.....	Aug. 31.....	Present	
Sumatra—Djambi.....	July 18-24.....	Present	

<i>Plague—Foreign.</i>			
Chile—Iniqué.....	Aug. 10.....	6	In lazarettos

China—Amoy.....	July 24-31.....	52	
Ecuador—Guayaquil.....	July 24-Aug. 11.....	9	
Formosa.....	July 17-24.....	3	
India—General.....	July 24-31.....	926	709
India—Bombay.....	July 20-27.....	15	
India—Bombay.....	Aug. 3-10.....	27	
India—Calcutta.....	July 24-31.....	37	
India—China—Saigon.....	July 17-31.....	37	
Peru—General.....	Aug. 14-21.....	19	9

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 15, 1909:

BANKS, CHARLES E., Surgeon. Granted three days' leave of absence from September 14, 1909.

CARTER, H. R., Surgeon. Bureau order of July 20, 1909, revoked. Directed to proceed to Louisville, Ky., and assume command of the service.

CREEL, R. H., Passed Assistant Surgeon. Upon arrival of Surgeon H. R. Carter, relieved from duty at Louisville, Ky., and directed to proceed to Philadelphia, Pa., and assume temporary charge.

ELFERS, J. C., Acting Assistant Surgeon. Granted twenty days' leave of absence from September 11, 1909.

FRICKS, L. D., Passed Assistant Surgeon. Granted three months' leave of absence from September 24, 1909.

GLENNAN, A. H., Assistant Surgeon General. Detailed to represent the service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5 to 8, 1909.

HAMILTON, H. J., Acting Assistant Surgeon. Granted three days' leave of absence from September 14, 1909.

HOUGH, J. S., Acting Assistant Surgeon. Order granting leave of absence from April 1, 1909, amended to read three months and twenty-five days from April 1, 1909.

KERR, J. W., Assistant Surgeon General. Directed to proceed to Chicago, Ill., and Springfield, Ill., upon special temporary duty.

LUMSDEN, L. L., Passed Assistant Surgeon. Detailed to represent the service at the annual meeting of the Medical Society of the State of Virginia, to be held in Roanoke, Va., October 5 to 8, 1909.

MCINTOSH, W. P., Surgeon. Leave of absence granted August 11, 1909, for twenty-one days from September 1, 1909, amended to read ten days from September 1, 1909, and eleven days from September 27, 1909.

NUTE, A. J., Acting Assistant Surgeon. Granted twenty-five days' leave of absence from September 10, 1909.

RIDLON, JOSEPH R., Assistant Surgeon. Granted six days' leave of absence from September 11, 1909.

ROBERTSON, H. McG., Passed Assistant Surgeon. Granted two months' leave of absence from October 1, 1909.

SLOUGH, C., Pharmacist. Granted twenty-three days' leave of absence from September 18, 1909.

SOUTHARD, F. A., Pharmacist. Granted six days' leave of absence from September 13, 1909, under paragraph 210, Service Regulations.

STEVENSON, J. W., Acting Assistant Surgeon. Leave of absence for thirty days from August 29, 1909, without pay, revoked.

SWEET, E. A., Passed Assistant Surgeon. Granted twenty-one days' leave of absence from September 9, 1909.

TAPPAN, J. W., Acting Assistant Surgeon. Leave of absence for thirty days from August 2, 1909, amended to read twenty-six days from August 2, 1909.

TARBELL, B. C., Acting Assistant Surgeon. Leave of absence granted July 9, 1909, amended to read thirty days from August 1, 1909, with pay, and thirteen days from September 1, 1909, without pay.

VILLOLO, P., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from September 20, 1909.

WERTENBAKER, C. P., Surgeon. Detailed to represent the service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5 to 8, 1909.

YOUNG, G. B., Surgeon. Detailed to represent the service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5 to 8, 1909.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital office, Seattle, Washington, September 10, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon H. S. McGee, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 18, 1909:

BOWMAN, M. D., First Lieutenant, Medical Reserve Corps. Will report to the commanding officer, Fort Riley, Cal., for temporary duty during the absence of Lieutenant Freeman.

BOSLEY, J. R., Captain, Medical Corps. Will proceed to San Francisco, Cal., in time to take the transport sailing for the Philippine Islands about November 5, 1909.

BRECHEMIN, LOUIS, JR., Captain, Medical Corps. Granted leave of absence for four months, upon arrival in the United States.

COOK, G. W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for ten days.

CROSBY, W. D., Lieutenant Colonel, Medical Corps. Relieved from duty as a member of an examining board meeting at the Army Medical Museum Building, Washington, D. C.

DUNCAN, L. C., Captain, Medical Corps. Granted leave of absence for one month.

FREEMAN, C. E., Captain, Medical Corps. Ordered to accompany troops from San Francisco, Cal., to Fort Niagara, N. Y.

FREEMAN, C. E., First Lieutenant, Medical Corps. Will accompany troops en route from the transport *Thomas* to Fort Porter, N. Y., and return to his proper station; granted leave of absence for twenty days.

FREEMAN, PAUL, Captain, Medical Corps. Granted leave of absence for four months.

- GEDDINGS, E. F., Major, Medical Corps. Granted leave of absence for four months, about October 1, 1909.
- JENKINS, F. E., First Lieutenant, Medical Reserve Corps. Granted leave of absence for three months, with permission to go beyond the sea.
- JONES, E. C., First Lieutenant, Medical Reserve Corps. Granted leave of absence for ten days.
- LAGARDE, L. A., Lieutenant Colonel, Medical Corps. Detailed as member of examining board at the Army Medical Museum Building, Washington, D. C. vice W. D. Crosby, Lieutenant Colonel, Medical Corps, relieved.
- MARTIN, M. F., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Mansfield, R. I. and ordered to proceed to his home and report to the Adjutant General of the Army for further orders.
- MORSE, A. W., Major, Medical Corps. Now on leave of absence, ordered to accompany Twenty-ninth Infantry from San Francisco, Cal., to Fort Jay, N. Y.; upon completion of this duty to resume leave status.
- PURVANCE, W. E., Major, Medical Corps. Will proceed to San Francisco, Cal. in time to take the transport sailing for the Philippine Islands about November 5, 1909.
- RAYMOND, H. I., Lieutenant Colonel, Medical Corps. Granted leave of absence for one month, about September 10, 1909.
- SHILLOCK, PAUL, Major, Medical Corps. Having been found physically incapacitated for active duty, is relieved from duty at Fort Sheridan, Ill., and will proceed to his home to await retirement.
- SLATER, E. F., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Adams, R. I., and ordered to Fort Mansfield, R. I., for duty.
- STUCKEY, H. W., First Lieutenant, Medical Reserve Corps. Ordered to Fort Hamilton, N. Y., for duty; granted leave of absence for two months.
- STOGES, FRANK, First Lieutenant, Medical Reserve Corps. Ordered to Fort Hamilton, N. Y., for duty.
- TARBY, A. E., Major, Medical Corps. Will accompany insane patients from San Francisco, Cal., to Washington, D. C., and report to the Adjutant General for orders to return.
- WALL, F. M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Oglethorpe, Ga., and ordered to Fort Michie, N. Y., for duty.
- WARING, J. B. H., First Lieutenant, Medical Corps. Will proceed to San Francisco, Cal. in time to take transport sailing for the Philippine Islands about November 5, 1909.
- WARING, J. B. H., First Lieutenant, Medical Corps. Will accompany troops en route from transport *Thomas*, to Fort Porter, N. Y., and return to his proper station; upon completion of this duty granted leave of absence for ten days.

The following named officers of the Medical Corps were ordered to report on October 11, 1909, to Lieutenant Colonel H. P. Birmingham, president of examining board, Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for promotion: Majors C. B. Ewing, W. P. Kendall, W. B. Banister, A. E. Bradley, Charles Willcox, E. B. Frick, F. R. Keefer, and T. U. Ray.

The following named first lieutenants of the Medical Reserve Corps are ordered to report to Colonel Valery Hayward, president of Army Medical School, on October 11, 1909, for a course of instruction at that school: E. R. Gentry, G. M. Edwards, R. C. Heffebower, E. M. Welles, Jr., W. H. Thearle, L. B. McVee, H. C. Michie, Jr., C. E. Holmberg, A. F. Schlanser, H. Beuynolds, W. B. Carr, J. T. Aydelotte, W. H. Allen, Royal Reynolds, F. D. Kreamer, M. D. Weed, T. F. Darby, T. I. Ferenbaugh, W. P. Lamb, A. O. Davis, S. P. Klotz, W. E. Cooper, W. C. Davis, R. G. DeVoe, T. C. O'Connell, W. J. Smith, J. L. Hollister, S. R. Bower, A. T. Cooner, H. P. Shugerman, C. W. Haverkamp, Floyd Kramer, F. R. Hill, Joseph Casper.

Navv Intelligence:

The following named officers of the Medical Corps were ordered to report to the Medical Board at the United States Naval Hospital, Annapolis, Md., on October 11, 1909, for examination to determine their fitness for promotion: Majors C. B. Ewing, W. P. Kendall, W. B. Banister, A. E. Bradley, Charles Willcox, E. B. Frick, F. R. Keefer, and T. U. Ray.

- PAYNE, J. H., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Hartford, Conn., and ordered to the Naval Hospital, Navy Yard, New York, N. Y.
- ROBBINS, I. W., Acting Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., September 25th, and ordered to instructions at the Naval Medical School, Washington, D. C.
- ROSE, M. E., Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the *Celtic*.
- STUART, M. A., Assistant Surgeon. Detached from duty with the Marine Detachment, Camp Elliott, Canal Zone, Panama, and ordered to duty at Ancon, Canal Zone.
- THOMPSON, F. W., Acting Assistant Surgeon. Detached from the *Celtic* and ordered to instruction at the Naval Medical School, Washington, D. C.
- ZIEGLER, J. G., Assistant Surgeon. Detached from duty at the Naval Hospital, Navy Yard, Pensacola, Fla., and ordered to duty with the Marine detachment, Camp Elliott, Canal Zone, Panama.

Births, Marriages, and Deaths.

Born.

- CARPENTER.—In Annapolis, Maryland, on Saturday, September 11th, to Surgeon Dudley Newcomb Carpenter, United States Navy, and Mrs. Carpenter, a daughter.
- LOVELL.—In Lynn, Massachusetts, on Monday, September 6th, to Dr. and Mrs. Lovell, a girl.

Married.

- BUCHEN—HUEY.—In Philadelphia, on Saturday, September 18th, Dr. Fritz E. Buchen, of Helena, Montana, and Miss Katharine Huey.
- O'FARRELL—BULL.—In New York, on Wednesday, September 15th, Dr. Joseph I. O'Farrell, of Buenos Ayres, and Miss Emma Louise Bull.
- PATTON—EMERSICK.—In Philadelphia, on Wednesday, September 15th, Dr. Gideon Harmer Patton and Miss Martha Emersick.
- SANDS—NASH.—In Bath, Ontario, Canada, on Wednesday, September 15th, Dr. Charles Turner Sands, of Silver City, New Mexico, and Miss Victoria P. Nash.
- WATTS—PALMER.—In Colorado Springs, Colorado, on Tuesday, September 14th, Dr. Henry C. Watts and Miss Marjorie Palmer.

Died.

- BARNES.—In Baltimore, Maryland, on Saturday, September 11th, Dr. William M. Barnes, aged eighty-five years.
- BARSTOW.—In Boston, on Tuesday, September 7th, Dr. Henry Taylor Barstow, aged fifty years.
- BUCHANAN.—In Pittsburgh, on Wednesday, September 15th, Dr. James G. Buchanan, aged eighty-four years.
- CALDWELL.—In Johnstown, Pennsylvania, on Monday, September 13th, Dr. William Caldwell, aged eighty-one years.
- COFFIN.—In El Paso, Texas, on Thursday, September 16th, Dr. John W. Coffin, aged forty-three years.
- EASTMAN.—In Topeka, Kansas, on Saturday, September 11, Dr. B. D. Eastman, aged seventy-three years.
- GREMPLE.—In Baltimore, on Saturday, September 11th, Dr. Karl Grempler, aged seventy-five years.
- GUY.—In Chenango Forks, New York, on Wednesday, September 8th, Dr. James D. Guy, aged sixty-eight years.
- KURTZ.—In Chicago, on Monday, September 6th, Dr. Karl Ernest Kurtz, aged sixty-two years.
- NEWKIRK.—In Elm City, Michigan, on Thursday, September 16th, Dr. C. T. Newkirk, aged sixty-eight years.
- PERRY.—In Brooklyn, on Thursday, September 16th, Dr. Clarence Stephen Perry, aged forty-three years.
- SMITH.—In Hanover, New Hampshire, on Friday, September 17th, Dr. William Thayer Smith, aged seventy years.
- SNYDER.—In Lake Odessa, Michigan, on Sunday, September 5th, Dr. Charles N. Snyder, aged fifty-eight years.
- SOUTHWICK.—In Rome, New York, on Saturday, September 11th, Dr. Augustus Benjamin Southwick, aged sixty-nine years.

STRYKER.—In New York, on Sunday, September 12th, Dr. Marv Stryker.

SUMNER.—In Brooklyn, on Friday, September 17th, Dr. Truman S. Sumner, aged sixty-two years.

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WHOLE No. 1600.

Original Communications.

THE PERSISTENCE OF THE GONOCOCCUS IN THE PROSTATE.*

By G. A. DeSANTOS SAXE, M. D.,
New York.

Instructor in Genitourinary Surgery, New York Postgraduate Medical School and Hospital; Assistant Genitourinary Surgeon, Bellevue Hospital, Out Patient Department, etc.

The persistence of gonococcus infection is a subject which touches some of the most important problems with which we have to deal in our daily practice. While much study has been devoted to this theme, there are even now, thirty years after Neisser's discovery of the gonococcus, many phases of the subject that are still imperfectly developed.

The general proposition that the prostate is frequently the seat of a persistent gonococcus infection will doubtless be agreed to by all urologists. When we come to inquire, however, how frequently is the prostate thus invaded; how often and how long does the invasion persist; how is its persistence diagnosed, and to what extent and by what means is it curable, we at once meet with a variety of views.

It is with the purpose of placing before you the results of a careful study of 180 cases of gonorrhoea with reference to the presence and persistence of gonococcus infection in the prostate, that I present this paper for your consideration. The material was taken from my private practice, and includes twelve cases referred to me by other physicians.¹ I found it impossible to watch hospital or dispensary patients closely enough to draw conclusions.

I. METHOD OF EXAMINATION.

(a). *Obtaining the Prostatic Secretion.* The patient was asked to report with a full bladder, and the Kollmann "five glass test" was applied. Special attention was paid to the third glass (shreds, etc., from the posterior urethra) and to the fifth glass (plugs from the prostate, squeezed out at the last stage of urination). The genitals were thoroughly scrubbed with green soap and water. The anterior and the posterior urethra as well as the bladder

were then thoroughly and repeatedly washed with sterile water, about 100 c.c. of the last wash water being left in the bladder. The prostate was massaged, care being taken to press on the perineum with the knuckles, and any secretion appearing at the meatus was caught on a slide. Usually there was enough secretion obtained thus for microscopic examination. If nothing flowed from the meatus, the patient was asked to walk around the room once or twice. The urethra was at no time "milked," as this might bring down some hidden germs from its glands.

There is no doubt that the secretion sometimes flows back into the bladder during the massage, or that it may be scanty and remain in the posterior urethra. In such cases no fluid comes from the meatus, and there is nothing to do but to allow the patient to void the rest of his wash water, which had been left in the bladder to provide for this contingency. The sediment in the wash water may then be centrifuged and examined. I realize that there are loopholes for errors in this technique,—principally because it is practically impossible to wash out the urethra so thoroughly that it will be entirely free from germs.

For the practical purpose of an examination intended solely as a clinical index to diagnosis, prognosis, and treatment, the method outlined, in my humble opinion, is entirely sufficient. Admittedly, it will not stand the scrutiny of exact bacteriology, yet it was justified because I sought only working data, not absolute bacteriological perfection.

When cultures are made, on the other hand, the technique of pure bacteriology must be used. There is then no excuse for clinical makeshifts. For this reason in all cases in which I made cultures, I followed scrupulously the technique of Young, Geraghty, and Stevens (1),—the most perfect hitherto described, though still imperfect as their own results show:—After thoroughly washing the anterior urethra as above described, a sterile urethroscope was introduced, its tube was thoroughly flushed with sterile water, and the prostate massaged. A sterile platinum loop was used for obtaining the prostatic fluid at the bottom of the tube, and for inoculating the culture media.

(b). *"Provocation" or Bacteriotaxis.* The use of irritant solutions as a "provocative measure" to bring out latent gonococci is an old and tried method. Neisser (2) in 1883 recommended irrigation of the urethra with a 1 in 20,000 mercuric chloride solution to act as an irritant that might bring out hidden gonococci, along with a reactive discharge.

*Read at the annual meeting of the American Urological Association at Atlantic City, June 7, 1909.

¹In addition to this clinical material, I have records of examinations of prostatic secretion in 140 cases in which specimens were submitted to me by other physicians. As I have no clinical data on these cases, I did not include them in this present study. I take opportunity to acknowledge my indebtedness to Dr. A. L. Wolbarst, of this city, who sent me the largest number of these slides in the course of a year, and who will present a paper dealing with his own cases at this meeting.

Janet (3) in 1892 advised the use of a one per cent solution of silver nitrate for the same purpose, while Hogge (4) went so far as to declare that other diplococci were killed with either of these solutions, and that the "provocative test" was a sure way of determining whether gonococci were hidden anywhere along the canal. Finger (5) speaks of "provocation" with from one half to one per cent. solution of silver nitrate applied with an Ultzmann syringe, and emphasizes the need of repeatedly using this test, and also of examining the prostatic secretion after its use.

The "provocative" method has remained in use in spite of numerous criticisms as to its trustworthiness. Orłowski (6), in speaking of Alexander's (7) modification of this method (the use of hydrogen peroxide instead of silver nitrate) in particular, and of the irritative reaction in general says that "provocation does not provoke"; that it is harmful, produces postgonorrheal catarrh, and is untrustworthy. There is some justice in his criticism, and the use of "provocative injections" as a routine measure must be frowned upon. When properly used, with due care, they are of considerable service, and have never done any harm in my hands. The reagent used was a one per cent. solution of silver nitrate, of which fifteen drops were injected into the posterior urethra with the aid of an Ultzmann syringe. If a morning drop showed the next day, it was examined. In any case the prostate was massaged within twenty-four or thirty-six hours after the injection and the secretion examined.

The value of the method is especially evident in cases of prostatitis of long standing in which, if any gonococci exist, they fail persistently to appear in the massaged secretion. I shall speak a little further on of my results with this method.

Technique of Staining.—The smears were spread as thinly as possible, sometimes adding a little water before the bacteria had time to dry. The dry smears were fixed with alcohol and ether (equal parts poured on the slide and allowed to evaporate for fifteen to thirty minutes) and stained with aqueous eosin and methylene blue, as described in my previous paper, dealing with vesicular material in massage urine (9).

In preference to this method, I have used during the past year, a double stain consisting of eosin and of methylene blue in absolute methyl alcohol. The principle of this method is that of the well known Romanowsky-Nocht (11 and 12) stain, with the difference that the stain is mixed freshly when needed. The method is identical with that used by Tiedemann (14) for blood, recently recommended by Cook (15), and is similar to the blood staining method used by Harlow (16), Peebles (17), and Hayhurst (18).

No previous fixation is required. The *thinly spread* smear is dried, and equal parts of the following solutions are mixed in a test tube, which must be *chemically clean*, i. e., free from traces of acids, alkalis, or organic matter. The slightest contamination causes a precipitate and destroys the stain:

1. Eosin solution. Eosin Y. 1 gram. Distilled water. 100 cc.
2. Methylene blue solution. Methylene blue. 1 gram. Distilled water. 100 cc.
3. Fixative solution. 95 per cent. alcohol. 100 cc.
4. Counterstain solution. Methylene blue. 1 gram. Distilled water. 100 cc.

A few drops of the mixed solutions are poured upon the smear and allowed to remain for one minute. Then about four times the volume of distilled water is added, and the slide is allowed to remain thus covered for five minutes. The smear is then drained, washed in distilled water, dried, and examined.

This method of staining is very simple. The full account of the technique of staining, and the results of the examination, will be given in a future paper.

The result is a brilliant contrast stain, showing blue nuclear material and bacteria against a pink background of matrix and cell bodies. The eosinophilic cells show distinctly. The gonococci are stained deep bluish black. The morphology of both cells and bacteria shows very sharply, and the degenerated epithelia and broken down pus cells met with in chronic prostatitis can be readily recognized.

Gram's Stain.—While the stain described is excellent for the morphological study of prostatic secretion, Gram's stain is indispensable for the differentiation of gonococci. *Gram's stain is worthless unless properly applied*, and unfortunately its proper technique is not taught in any of the textbooks which I consulted. For this reason I may be permitted to call attention to some points of importance in the use of Gram's stain.

From personal experience, I have come to reject practically all modifications of the original Gram's method as untrustworthy. I would especially warn against the use of acetone alcohol (Nicolle's method) for decolorizing, as this reagent may also decolorize Gram positive cocci. The best decolorizing agent is absolute alcohol (20, 21, 22), because it has an unvarying strength (if properly kept, with anhydrous copper sulphate in the bottle, to absorb water). The directions usually given: "Decolorize until no more violet color comes off" are wrong. The absolute alcohol should be used only for thirty seconds. If used longer, it begins to decolorize the Gram positives.

Furthermore, one must remember to avoid *understaining* with aniline (or carbol) gentian violet, and to avoid *overstaining* with the contrast color. The contrast stain best suited for routine work is dilute Bismarck brown. Fuchsin is confusing if there has been any overstaining with it, as the very deep red cocci cannot be readily distinguished from the purple germs.

The most satisfactory results are obtained as follows: (thin smears are a *sine qua non*): 1. Stain with strong carbol gentian violet for one and a half minutes. 2. Drain, and at once apply Gram's iodine solution; drain, and reapply the same repeatedly for a minute and a half. 3. Drain, and decolorize for thirty seconds in absolute alcohol. 4. Counterstain with dilute Bismarck brown. 5. Wash in water. Dry, mount.

(c) **Cultures.**—The criticism will be made that the appearance of a typical Gram negative diplococcus does not necessarily mean that we are dealing with the gonococcus of Neisser (23). That a cultural proof is desirable I readily admit; that it is necessary ordinarily for clinical purposes, I doubt strongly. The fact that Finger, Stein-schneider, and Galewski (26) found a Gram negative diplococcus which was not a gonococcus only in 4.6 per cent.—4.8 per cent. of a large series of cases, shows that in 93.2 per cent. of cases we are right in saying that we deal with the gonococcus, after the examination of a Gram stained smear. In women the pseudogonococcus has been found more frequently, but in men a Gram negative diplococcus of typical appearance must be considered guilty of being a gonococcus until proved innocent, with the chances of about 95 out of 100 that the prisoner is guilty.

Cultures were taken in thirty-eight out of the total number of my series of cases. Of these nine gave positive, the rest negative, results. Of the positive cases, six were between eighteen and twenty-four months' duration, the rest were of more than two years' duration.

It is very easy, strenuously to insist on cultures, but it is very difficult, even for the most experienced bacteriologists, to cultivate the gonococcus in a case of chronic prostatitis. This difficulty increases when the material used contains comparatively few of the germs (as is the case in all chronic types of gonorrheal infection), and when the germ is in the state known as "degeneration form."

Cultures, moreover, sometimes give negative results when the gonococcus is found morphologically. The idea that there was something specific in the "culture test," i. e., that if one made a culture or a special medium good for gonococci and if a growth occurred on this medium that looked like the gonococcus, one had a true blue Neisserian coccus, and that if nothing grew, no gonococci were present,—this idea, I say, has been exploded long since. Cultures of gonococci are not only *unreliable* but also *unreliable* for the purpose of isolating and identifying the germ. When negative they mean absolutely nothing, as the gonococcus is so capricious that it often will not grow even upon media specially suited to its growth. (Wertheim, 27, Schramm, 28.)

On the other hand, even when apparently positive, cultures must be very carefully studied and the results checked by a competent bacteriologist. We need only cite the fact that staphylococci when grown upon media specially suitable for gonococci have a tendency to assume the diplococcus type and to look like coffee beans (Paltrock, 22). Van Calcar and Gotte (29) found recently that they could cultivate staphylococci in a form resembling gonococci, and that after a few generations they no longer grew upon ordinary media, but only upon blood agar or ascitic agar, like gonococci. By inoculating cultures of these atypical staphylococci into dogs, these authors produced a urethritis with a purulent discharge containing intracellular diplococci looking exactly like gonococci.

Ascitic agar (plate method, with three streaks) has given me the best results. There are cases, undoubtedly, in which cultures show the presence of gonococci, when smears fail to do so, but to make up for these cases, there are some in which the culture fails and the smear is successful when the examinations are numerous enough. With the most careful technique, and with the most expert advice at my command, this has been my experience.

II. FREQUENCY OF PROSTATITIS AS A COMPLICATION OF GONORRHOEA.

While H. von Zeissl (30), as early as 1879, declared that "no gonorrhoea could exist for any length of time without involving the prostate," the tendency of most writers in the eighties was to consider gonorrhoeal prostatitis as one of the rarer complications of urethritis. Within the past fifteen years, the frequency of prostatic involvement has come to be regarded as very great, and some authors go so far as to say that "prostatic infection is practically synonymous with chronic gonorrhoea."

The table herewith presented (Table I) shows at a glance the marked variations in the estimates of different authorities as to the frequency of gonorrhoeal infection of the prostate.

TABLE I.
Frequency of Gonorrhoeal Prostatitis.

Year.	Author.	Frequency among gonorrhoea.
1893	Guyon (31)	Rare.
1890	Pfärringer (32)	Rare.
1891	Ballou (33)	3 per cent.
1894	Petersen (34)	10 per cent. to 20 per cent.
1895	Colombini (35)	35 per cent. in acute; 28 per cent. in subacute; 4 per cent. in chronic.
1890	Goldberg (36)	31 per cent. to 51 per cent.
1891	Wossidlo (37)	ditto.
1906	Bierhoff (38)	49.5 per cent. (100 per cent. in posterior urethritis).
1904	Notthaft (39)	58 per cent.
1903	Bonn (40)	68 per cent.
1885	Montagnon (41)	70 per cent.
1906	Eraud (42)	70 per cent.
1896	Pezzoli (43)	80 per cent.
1903	Waelisch (44)	81 per cent. (83 per cent. in posterior urethritis).
1903	Casper (45)	85 per cent.
1879	Von Zeissl (46)	
1884	Neumann (47)	
1880	Posner (48)	
1893	Bransford Lewis (49)	
1899	Rosenbaum (50)	
1900	Chittenden (51)	
1900	Volkmann (52)	Very frequent.
1900	Porosz (53)	
1905	Finger (54)	
1906	Frank (55)	
1900	Van Eppelen (56)	
1906	Young (57)	

This apparent conflict of opinions, upon analysis, may be accounted for by several factors:

1. Most of the authors quoted who found prostatitis rare depended entirely upon palpation for their diagnosis.

2. Some of them found low percentages because they erroneously regarded prostaticorrhea as an essential symptom of prostatitis.

3. The most important factor in the variability of the figures is the duration of the gonorrhoeal infec-

tion; for, as will be shown later, prostatitis is most frequent in the very chronic cases.

4. Authors do not always state how many cases of posterior urethritis there were among their cases.

In my own material, which comprised 180 cases of chronic gonorrhoea carefully watched in private patients, I found 108 cases of prostatitis, i. e., sixty per cent. The chief criterion for diagnosis was the examination of prostatic secretion, but thorough palpation was never neglected. No case was diagnosed as prostatitis in which there were not at least a fair number of pus cells in the prostatic juice, or else sufficiently marked palpatory signs. My figures, therefore, agree approximately with those of Notthaft (39) and are somewhat higher than those of Bierhoff (38), Goldberg (36), and Wossidlo (37).

The frequency of prostatitis in my series varied with the chronicity of the infection, as the following table shows:

TABLE II.

Duration since last infection.	Gonorrhoea: Cases.	Prostatitis: Cases.	Per cent.
4 to 12 months	11	0	0
13 to 24 months	54	11	20
25 to 36 months	27	18	67
3 years and over	9	22	77
Total	101	51	50

It will be seen, therefore, that the percentage of prostatic infections increases with the chronicity of the case. The high percentage found in cases of over two year's duration (seventy-seven per cent.) was perhaps partly due, however, to the special attention and care bestowed upon these cases in examining the prostatic secretion many times, although this percentage is but slightly higher than that found by other authors, e. g., Notthaft (39), who found prostatitis in seventy-two per cent. of his advanced cases of gonorrhoea.

III. RELATION OF PROSTATITIS TO POSTERIOR URETHRITIS.

It may seem plausible to assume that in every case of prostatitis there must also be a posterior urethritis. This, however, does not seem to be necessarily the case. Notthaft (39) found the prostatic urethra free from lesions in 52 per cent. of his cases of gonorrhoeal prostatitis (the five glass test being used). In my own series, the five glass test showed a clear posterior urethra in only 15 per cent. of cases, while in the remaining 85 per cent. there was posterior urethritis.

While posterior urethritis, therefore, is probably found with prostatitis in the great majority of cases, the two conditions do not necessarily occur together. It must be noted, however, that some authors (Finger (5), Frank (55), Bierhoff (38), and Waelisch (44)) found prostatitis in practically every case of posterior urethritis, so that if the cases of posterior urethritis, as such, be picked out, we are almost certain to find prostatitis, while the converse need not necessarily be true.

There is some authority, perhaps, for the supposition that a primary infection of the prostate may take place, the gonococci passing directly into the prostatic ducts during coitus (Neisser (25), Putzler (58), Pezzoli (43), and others). Still other authorities suggest the possible skipping of the pos-

terior urethra (Goldberg (36), Notthaft (39), etc.) by the infection, which jumps from the anterior urethra directly into the prostate. While there may be some facts in support of this theory, it seems to be somewhat less plausible than the simple explanation which satisfies the conditions met with; namely, that the posterior urethritis has healed, while the prostatitis persists in those cases in which the latter alone is found.

IV. OCCURRENCE OF THE GONOCOCCUS IN THE PROSTATIC SECRETION.

The great differences in the findings of various authors in their cases of gonorrhoeal prostatitis appear in the following table:

TABLE III.
Cases of gonorrhoeal prostatitis.

A.	Cases of gonorrhoeal prostatitis.	Gonococci found in.	Per cent.
Frank (34)	274	179	85.5
Bierhoff (38)	141	127	84
Notthaft (39)	120	47	39.2
Le Bar (37)	38	4	10.5
Bonn (40)	50	3	6
Himricher (91)	35	0	0
Young (11)	17	0	0
Cohn (61)	15	0	0

Upon analysis, I found that these differences in the results obtained by such trustworthy authors were due principally to the various proportions of early and very chronic cases included in each series. Thus, in Frank's series, there were ninety-six cases (out of 210) in which the duration since the onset of gonorrhoea was less than eight days. Bierhoff in his excellent paper does not state the number of cases in his series which had lasted less than six months since the infection, but as his cases range up to thirty years' duration, his series must have included all stages. Notthaft's series included only cases of over six months' duration, and shows a materially smaller percentage with gonococci. The other authors mentioned reported chiefly cases of the more chronic type.

In my series of 108 cases, all of which were considered only after at least six months had elapsed since the last infection, there were gonococci in thirty-one cases, i. e., in 28.7, a percentage lower than that of Notthaft (39 per cent.).

That the frequency with which gonococci are encountered in the prostatic secretion diminishes markedly with the chronicity of the infection (taking always the last attack of gonorrhoea as the supposed starting point) is shown strikingly in my series of cases:

TABLE IV.
Cases of gonorrhoeal prostatitis.

I.	Duration since last infection.	Cases.	Gonococci found in.	Per cent.
I	Less than 8 days	18	18	100
II	8 to 14 days	18	18	100
III	15 to 30 days	18	18	100
IV	31 to 60 days	18	18	100
V	Over 60 days	18	18	100

The two cases in which gonococci were found in the last two groups were in patients in whom repeated examinations were made before the positive result was obtained. Most of the authors dealing with this question failed to state the number of examinations made. The gonococcus, however, is rarely found at the first examination of prostatic

secretion in any case, especially in a case of over six months' duration. In my series of 108 cases, there were a total of 514 examinations made, i. e., an average of about five per case. Gonococci, or even pus cells, were often missing till the fourth or fifth examination. With the chronicity of the infection there is an increasing difficulty in finding the gonococcus, and in some cases as many as twelve or even eighteen examinations were made before a positive result was obtained.

V. VALUE OF BACTERIOTAXIS BY MEANS OF PROVOCATIVE INJECTIONS.

Provocative injections (see above) were given in my cases only after at least three negative examinations. In all, eighteen cases received provocative injections, and of these only six showed the presence of gonococci after the injections. In four of these cases, the gonococci disappeared within a week and reappeared upon the second provocative injection, while in the remaining two cases gonococci could not be brought out by a second provocative injection given about two weeks after the first.

Of the eighteen cases in which provocative injections were used, four were examined between three and eighteen years after the last gonorrhoeal infection, six between two and three years, four between eighteen and twenty-four months, and four between twelve and eighteen months after infection. Provocative injections were not given in any case of less than a year's duration.

While these injections did not seem in any case to produce any harmful effects, due caution was used in applying them. The cases selected for this purpose were always those in which there was some particular reason for making sure that no gonococci were present, for instance, impending marriage, etc.

As will be seen from the figures given, these injections did not always produce the desired effect so far as the bringing out of the gonococci was concerned, but even in the limited number of cases in which they assisted in the examination, they were of considerable value. In no case were gonococci found after the injections were discontinued, when the massaged secretion after injection had given a negative result. This, however, does not prove that the injections are by any means infallible, as the number of cases in which these reactive tests were used was intentionally small.

VI. PERSISTENCE OF THE GONOCOCCUS IN THE PROSTATE.

Here again, the statements of those who have studied this question during the past ten or fifteen years vary markedly. Some of the earlier authors, particularly Finger (5), Neisser (25), Putzler (58), emphasize the length of time during which the gonococcus may be found persistently in the prostate. On the other hand, the tendency of the later writers is to regard the presence of the gonococcus as rare after one or two years. Cohn (61), Wossidlo (37), Goldberg (38), and Notthaft (39) may be mentioned among this latter group. Goldberg regards the gonococcus as very rare after the first year. Notthaft found it rarely after two years and never after three years. A number of cases, however, have been reported in which the gonococ-

cus has been found five years or longer after the last gonorrhoea. In my series, there were two cases that came under this heading.

In one of these cases the gonococcus was found fourteen years after infection, in other five years after infection. In both instances, provocative injections of silver nitrate (15 drops of a one per cent. solution) were required to bring out the germs. In the first of these cases, the patient was a sexual neurasthenic with "gonorrhoeophobia," who had practiced *coitus condomatus* ever since the apparent cure of his infection fourteen years previously, so presumably there had been no symptomless reinfection of the prostate. In spite of repeated efforts, cultures were unsuccessful, but morphologically the germ was typical and it was decolorized with Gram's stain.

The second patient was a man about town who had been frequently exposed to reinfection but who had never had a discharge since his first and only attack, five years previously. This case is not so valuable as evidence of the persistence of gonococcus, because the possibility of a symptomless reinfection cannot be excluded. In this case cultures were made on ascitic agar, proving the diplococcus to be positively the gonococcus.

VII. MIXED INFECTION IN GONORRHOEAL PROSTATITIS.

A great deal of work has been done during the past decade with a view of determining the identity of the germs other than the gonococcus, which are concerned in the infection of the prostate. It would lead me too far to review the extensive literature of the subject. In spite of the amount of work which has been done, there does not seem to be very much definite knowledge available as to the pathogenic rôle of the numerous bacterial species found in the causation of prostatitis. We are concerned here with mixed infection solely as pertaining to prostatitis of gonorrhoeal origin. In my work, no attempt has been made to cultivate and isolate the various germs found in the prostatic secretion, but a careful search was made in all the smears for any bacteria that might be present in each case. From a study of my cases of prostatitis of gonorrhoeal origin, I have been impressed with the great frequency of mixed infection, particularly in cases in which the gonococcus could not be found.

The relation between mixed infection and the chronicity of the gonorrhoeal infection, or with the lapse of time since the last infection, is shown in the following table:

TABLE V.

Mixed Infection in Prostatitis of Gonorrhoeal Origin.

	Duration since last infection.	Number of cases examined.	Gonococci alone.	Gonococci and other germs.	Other germs alone.	Germs absent.	Total mixed infections.	Per cent.
I.	6 to 12 months....	39	5	13	10	6	32	82
II.	12 to 18 months....	31	5	9	18	4	36	87
III.	18 to 24 months....	18	0	9	16	3	38	100
IV.	2 to 3 years....	7	0	2	5	0	10	100
V.	3 to 18 years....	13	0	2	7	4	13	61.5
	Totals.....	108	10	26	66	17	109	85

It will be seen that gonococci were present *alone* only in the earlier types of cases up to one year. Mixed infection (86 per cent. of cases) is a promi-

nent factor from the first, and is present in a large percentage of cases in all stages of chronicity. How much of this mixed infection is secondary to instrumentation, I am unable to say, but I found, like Nothhaft (39), Goldberg (36), and others that the gonococcus seems to disappear after a few years and is replaced by a number of other germs. In the very chronic cases, it is very much more common, therefore, to find these associated germs than to find the gonococcus.

The subjoined table shows the individual types of germs found in my cases, and the frequency with which each morphological type occurred. No attempt was made at accurate bacteriological definition.

TABLE VI.

Types of Bacteria Found in 108 Cases of Gonorrhoeal Prostatitis.

A. Gonococci—31 cases.	
I.	Gonococci alone, 5 cases.
	Gonococci plus other germs, 26 cases.
B. Other Germs—92 cases.	
II.	Staphylococci.....67 cases, 71 per cent.
	Often in very small groups.
	Rarely abundant.
	Sometimes as isolated cocci.
III.	Bacilli.....25 cases, 28 per cent.
	Various types and sizes, often short, with rounded ends (colon bacillus?); Gram negative. Sometimes thinner, longer bacilli in large numbers, resembling pseudotubercular bacillus.
IV.	Gram positive diplococci.....9 cases, 10 per cent.
	Rarely of same size as gonococci.
	Never intracellular.
V.	Streptococci.....7 cases, 7.6 per cent.
	Rarely numerous, in short chains of fairly large cocci.
	Sometimes in longer chains, smaller cocci.
VI.	Other, unclassified germs.....6 cases, 6.5 per cent.
	C. No germs found. 11 cases (12 per cent.).

The total number of findings of mixed infection was 118, among ninety-two cases, i. e., there were twenty-six cases with more than one germ present. The staphylococcus in some form was by far the most frequent germ, an interesting fact, particularly because it is apt to be mistaken for the gonococcus when it assumes the diplococcus (coffee bean) type already mentioned in speaking of cultures.

VIII. RELATION OF CLINICAL DATA AND MICROSCOPICAL APPEARANCES.

The absolute need of microscopical examination of the prostatic secretion in the diagnosis of gonorrhoeal prostatitis was strikingly shown in my series of cases. While there were microscopical findings justifying the diagnosis of prostatitis in 108 cases (germs and pus, ninety-seven cases; pus alone, eleven cases), there were thirty-eight cases (about thirty-five per cent.) in which palpation showed absolutely no changes in the prostate. Furthermore, subjective symptoms, including neurasthenia, various pains, frequent desire to urinate, etc., were present in seventy-nine and absent in twenty-nine cases (twenty-seven per cent.). The urine was perfectly clear in thirteen cases (twelve per cent.) in which the prostate was found the seat of inflammation, and in five of these there were gonococci and other germs found. The occurrence of prostatitis with perfectly clear urine is by no means a new fact. It is, therefore, impossible to exclude prostatitis by clinical examination alone.

IX. TREATMENT.

Although I do not here intend to go into details of treatment, the following summary may not be amiss. Massage of the prostate is by far the most useful measure in chronic cases. The use of heat in the rectum is of value and may be applied with the aid of a double current rectal tube, carrying a stream of

hot saline solution. Prolonged irrigation of the prostatic urethra by means of weak silver nitrate solution (1 in 16,000 to 1 in 5,000, applied with the prostatic douche tube may alternate with the massage, and are especially useful in combating the subjective symptoms (pain, urinary disturbances, sexual neurasthenia, etc.). After each massage an irrigation with weak silver nitrate solution in the cases with gonococci, or with some other solution, e. g., mercuric oxycyanide, in cases with mixed infection is to be given as a routine measure. Suppositories have never given me any appreciable results in chronic prostatitis, and probably do not reach the prostate at all. The treatment should not be interrupted suddenly, but should be gradually discontinued. General tonics, an ample diet, and general hygienic measures should not be neglected.

X. CURABILITY OF GONORRHOEAL PROSTATITIS.

Upon this point there are just as many varying opinions as upon some of the points previously discussed. We find, for example, that some authors assert to have cured all their cases of gonorrhoeal or postgonorrhoeal prostatitis, while others pessimistically declare this condition to be practically incurable (Neisser, 25, Goldberg, 36).

The question is, what constitutes a cure? Some say, "when no more gonococci can be found in the prostate"; others declare that so long as any pus cells are present in the secretion, there is no real cure. The former have larger percentages of cures, the latter very small percentages. To remove every pus cell from the prostate secretion, it will be admitted, may take months and years of persistent treatment. To my mind, this would be carrying things to extremes, and I personally am satisfied when all germs have vanished, when the number of pus cells has been reduced to a very small one, when the patient has no symptoms, and when his urine is clear. Repeated and careful examinations by a competent man are needed to exclude gonococci, and provocative injections may be used as a last resort. If all these points are satisfactorily settled, there is no use of keeping up treatment, even if the patient has occasional pus cells in the prostatic secretion. Judged by this standard, cases of gonorrhoeal prostatitis are curable in the very great majority of instances in a reasonable time.

XI. CONSENT TO MARRIAGE.

From the data presented, it appears clearly that the gonococcus can persist for a long time in the prostate, although it is exceptional to find it lurking that stronghold longer than two years after infection. We should be as cautious as ever in giving our consent to a man's marriage whenever a history of gonorrhoea is given. Even when the physician has done the best he could to exclude the presence of gonococci, postmarital infection with its tragic consequences at times occurs. Repeated examinations, accurate technique, patience, and perseverance should be our watchwords in passing upon a man's fitness to marry, and we should only give our consent when, in conscience, we can say that the chances of a persistent gonococcus infection in the prostate,—for that is usually the final refuge of the gonorrhoeal germ,—are nil so far as human skill and human mind can tell.

SUMMARY AND CONCLUSIONS.

1. Thorough irrigation of the urethra before massaging the prostate is essential in order to exclude contamination of the prostatic secretion by pus and bacteria from the urethra.

2. Injections of fifteen drops of a one per cent. solution of silver nitrate into the urethra twenty-four to forty-eight hours before prostatic massage sometimes reveal gonococci, when other means have failed.

3. A double stain of eosin and methylene blue in pure methyl alcohol, after the manner of the well known blood stains, is excellent in the morphological study of prostatic smears. Gram's stain is essential, but is misleading, unless properly applied.

4. Cultures, while desirable, are often unsuccessful, owing to the capricious character of the gonococcus. Negative cultures are not conclusive.

5. Of 150 cases of chronic gonorrhoeal infection, from six months to eighteen years' duration, sixty per cent. showed prostatitis. The older the infection, the more frequent was the prostatitis.

6. Of the 108 cases of prostatitis studied, thirty-one, or 28.7 per cent., showed gonococci in the prostatic secretion. The older the infection the less probable was the finding of gonococci in the prostate. After three years, gonococci were found rarely, even after most persistent efforts. Many and thorough examinations are needed before we can be at all certain that the gonococcus is absent from the prostate.

7. Mixed infection occurred in eighty-six per cent. of the cases studied. The gonococcus alone occurred in only five cases of 108, and all five were cases of less than one year's duration. The older the case the more prevalent was the mixed infection. Staphylococci occurred in seventy-four per cent., bacilli in twenty-eight per cent., Gram positive diplococci in ten per cent., and streptococci in 7.6 per cent. of cases with mixed infection.

9. The absolute need of microscopical examinations of prostatic secretion was shown by the fact that palpatory signs were absent in thirty-eight cases (thirty-five per cent.), while thirteen cases (twelve per cent.) showed absolutely clear urine, although the smears showed prostatic infection.

10. Gonorrhoeal prostatitis is curable by proper treatment in the great majority of cases.

11. Consent to marriage should not be given until all methods of examination have been exhausted, and until the possibility of a postmarital infection is practically excluded, in the present state of our knowledge.

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TREATMENT OF LOCOMOTOR ATAXIA BY A MODIFICATION OF THE REEDUCATIONAL EXERCISES.

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The pessimistic spirit shown by physicians in general in regard to any chronic affection where the pathological process of the disease is beyond repair is never productive of progress, but is often the cause of neglecting a more careful consideration of the means by which some method of treatment may be developed in order to eliminate a very distressing symptom. The cure, or even the alleviation of a distressing symptom is, in itself, an achievement, and as one step gained leads to the building up of another, so in apparently irremediable chronic affections any progress whatsoever should act as a stimulus toward further research. The scepticism which is so deeply rooted in the professional mind, although justifiable to a certain degree, should not take so strong a hold upon it as to discourage a trial of treatment which cannot be attended by harm if executed properly, but which is very often productive of such good results that they are little short of phenomenal.

When Dr. Heinrich S. Frenkel, of Heiden, Switzerland, came to this country in November, 1906, it was the writer's inestimable privilege to assist him in his treatment of the cases of locomotor ataxia in the Montefiore Home and Hospital. Since then the method and the results obtained have been of such interest, that I consider it of value to state some of the benefits derived.

In the first place when a patient suffering from tabes knows that he is under a special form of treatment, he at once becomes hopeful of improvement, and this acts psychically in buoying him up. This act of suggestion is said by some writers to be the nucleus of the treatment, and as tabetics are very prone to suggestive influences, ascribe the improvement to this cause; on the contrary I do not believe that suggestion plays the most important rôle, for if such were the case the benefits derived would at most be temporary, whereas the patients who were cured of their ataxia by the reeducational treatment never had a return of the incoordination that is so common in cases which have been treated by suggestion alone.

In the second place, a return to proper coordination with ability to stand and walk properly, removes the chief cause of being bedridden with the accompanying bedsores and hypostatic pneumonia, thereby prolonging life indefinitely. The writer has repeatedly taken patients that were firmly rooted, so to speak, to their wheel chairs and in some cases bedridden, has placed them in such a position that they were able to stand and walk properly without support of any kind, not even using a cane except over rough and slippery places.

In March, 1908, before the Medical Association of the Greater City of New York, the author demonstrated the results of treatment in two female tabetics, one being a former wheel chair habituée, and the other a case of marked ambulatory ataxia.¹ In

¹Proceedings of the Medical Association of the Greater City of New York, 1908, pp. 109 and 112.

both instances the patients walked so well, even with closed eyes, that the members of the association doubted the presence of tabes, until this was satisfactorily demonstrated subsequently.

The exercises recommended by Dr. Frenkel consist of an intricately and ingeniously developed system of coordinate movements, not gymnastic in character, but tending to reestablish the proper execution of the various movements which make up our daily life. By so doing one must make use of what is left of the muscular and articular sensibility. It is a well known fact that not only the tactile, but even more the articular sensibility is impaired in tabes, but we must bear in mind that the muscular sense which is best preserved, can be so improved by constant practice of coordinate exercises that it will compensate for the loss of articular sense. The muscles of a tabetic are never degenerated, nor are they actually weakened, except from disuse in the advanced cases. This may seem a broad statement, but as Dr. Frenkel and I have examined the muscles of a number of bedridden tabetics for the electrical reactions, in no case did we find a reaction of degeneration.

The most important objection against the practice of this treatment is the fact that it necessitates the use of various paraphernalia, strips of linoleum painted with lines and markings in different colors, footprints, and elevated platforms with steps, etc., etc., so that the treatment could only be carried out properly in an institution built for that purpose, and which institution must have men qualified to instruct patients in the various movements. The expense of such a course of treatment is often beyond the means of the majority of sufferers, and even the number of physicians capable of giving these instructions must perforce be limited. Being somewhat handicapped in the treatment of these cases by the want of these and numerous other apparatus, the writer was forced to try the experiment of treating these patients without the use of these complicated devices. This experiment has turned out so successful in private, as well as hospital practice, that I have determined to publish this paper in order to put this method of treatment, simplified materially, into the hands of the general practitioner, and in this manner benefiting the multitude of patients affected by this dreadful malady.

TREATMENT.

In demonstrating the exercises it must be noted that no one set of movements can be adapted to every case, as the degree and position of the ataxia vary markedly in each instance, for example: A patient who has very marked incoordination in the trunk muscles would not be benefited, and on the contrary harm might result, by a set of movements directed to the cure of ataxia of the lower extremities.

Before beginning treatment of a given patient he should first be fed up on a nourishing diet, and advised to live hygienically. He must abstain absolutely from tobacco in all its forms, and he must avoid alcohol.

Let us, for example, take a patient suffering from ataxia of the most advanced type, in order to give the movements of the various parts of the body, so that we can adapt a set of exercises to cure the ataxia of any given part. The patient is bedridden,

unable to stand or walk, and unable to feed himself on account of ataxia of the upper extremities. Here we commence with the simplest coordinate movements which are systematically tabulated below.

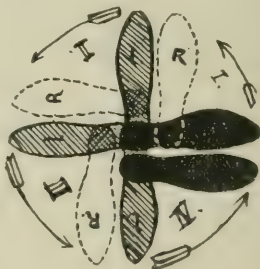
The patient lies flat on his back in bed with legs outstretched looking at his feet and watching his own movements. The pulse should then be taken as a guide to the physician so as to see the effects on the patient of a given exercise. If there should be a rise in the pulse beat of twenty to thirty beats above the natural for that particular patient, the exercise should at once be stopped for that séance, and absolute rest ordered. This applies to the entire list of exercises. It will be observed that while at first the very simplest exercise makes the pulse beat rise from twenty to thirty beats, later on the most strenuous movements will make only a slight impression on the pulse rate.

This naturally means that in the beginning of a course of treatment, the early progress is slow, and as the patient accommodates himself to the exercises he improves much more rapidly. Patients should be commanded to execute each and every movement very slowly and at once upon command.

EXERCISES.

Lower extremities. Dorsal position.

1. Flex right foot. Extension. 2. Flex left foot. Extension. 3. Flex both feet together. Extension.
4. Inward rotation of right foot. Original position.
5. Outward rotation of right foot. Original position.
6. Exercises 4 and 5, both feet simultaneously.
7. Rotary rotation of right foot. Then left. 8.



After flexing right foot, flex leg and thigh, drawing foot up on the bed to the level of the opposite knee. 9. Extend right leg and thigh until it is outstretched, then extend right foot. 10. Exercises 8 and 9 for left side. 11. Exercises 8 and 9 for both sides together. 12. Same as number 8, then rotate right thigh outward to about 30°. 13. Resume position of number 8, and then position 9. 14. Exercises 12 and 13 for left leg. 15. Exercises 12 and 13 for both sides together. 16. Flex right foot, then flex knee and thigh until the right heel lies opposite left knee. Place right heel on left patella; vice versa to original position. Same for opposite side. 17. Flex right foot, raise it from bed, placing heel directly upon the opposite knee, then replace to original position. 18. Same as number 17, but placing heel on middle of opposite tibia. Replace to original position. 19. Same as number 17, placing heel

on opposite ankle. Original position. 20. Same as number 17, placing heel on top of opposite foot. Original position. 21. Same as number 17, placing heel in turn on the knee, middle of tibia, ankle, and top of foot. Vice versa. 22. Exercises 17 to 21 inclusive, with left knee flexed slightly. 23. Exercises 17 to 22 inclusive, for left side. 24. Flexing right foot, abduct the entire lower limb to about 30° . 25. Adduct right lower limb to median line and extend foot. 26. Exercises 24 and 25 for left side. Both together. 27. Flexing right foot, flex thigh about 30° , raising the limb from the bed with the leg in full extension. Replace to original position. 28. Exercise 27 for left side. Both sides together. 29. Exercises 1 to 28 inclusive, with eyes raised, and finally with closed eyes.

Exercises in sitting position.

The patient should be lightly clothed, keeping hands on hips during the movements. 1. Rising from a chair. A. Sit near edge of chair. B. Draw feet inward, bend trunk forward. C. Push trunk forward, rising slightly from chair. D. Extend trunk and legs slowly. E. Extend trunk and legs fully.

At first the patient must be helped to rise as described by the aid of two attendants.

2. To sit on a chair. A. Flex knees slightly, keeping the trunk erect during the entire movement. B. Flex knees more and more until the chair is touched.

Exercises in upright position.

1. After rising from a chair the patient should learn to remain standing fully two minutes with heels together and toes turned outward. This alone may take several weeks, and is very important. In this as in other standing exercises, the patient must have one attendant on each side ready to prevent him from falling. Each attendant must have one foot behind the forward leg of the chair in order to prevent the chair from slipping backwards if the patient should suddenly sit down. 2. Standing with arms raised forward, outward, and upward. Two minutes in each position. 3. Standing, raising eyes from feet gradually until patient looks at ceiling. 4. Same as number 3, with arms raised forward, outward and upward. 5. With feet spread apart and toes turned out, put the entire body weight on the right side, then raise left foot slightly, replace to original position, and equalize body weight. 6. Same as number 5, but raise foot several inches from the floor, flexing thigh and knee. Replace to original position. 7. Same for opposite side. 8. With body weight on the right side raise the left foot, flexing knee and thigh, and place the foot several inches forward. Equalize body weight. 9. With body weight equalized, and left foot forward, transfer body weight to the left side and raise the right foot, placing it beside the left.

This is the first step. In making a step it is essential to transfer the body weight to the opposite side of the body to the foot making the step. So that when making several steps the patient should at first have a swinging motion of the body from one side to the other. In health this transference of body weight is automatic and of very slight degree,

but in tabes the deficiency of coordinate motion of the trunk and limbs must be over corrected.

10. Steps of various sizes are now undertaken, beginning with *approximately* 12 inch steps and in successive treatments decreasing to six inch, then increasing to 18 and 24 inch steps. At first the steps must progress forward in the following way: Left forward, right to left; right forward, left to right, etc. After this each foot should make progress forward as in ordinary walking. 11. When a certain proficiency is reached the patient is directed to walk with his eyes looking first a yard away from his feet, and then gradually further and further away until he learns to walk while looking at the ceiling. The walking distance should be only a few feet at first and slowly increased according to the ability of the patient. 12. Walking as above, beginning with 6 inch steps approximately and increasing to 12, 18, and 24 inch steps with feet close together. 13. If any hypotonia of the knee joints is present walking as above with knees slightly flexed making 6 and 12 inch steps is good treatment. This tends to strengthen the ligaments and muscles about the knee joint, but as it is very tiring should be carefully practiced. 14. Turning can best be illustrated diagrammatically; it must be remembered, however, that in stepping sideways while turning the body weight must be placed on the opposite side to the foot making the turn. 15. Walking sideways. Right to left and left to right. A. 12 inch steps. B. 18 inch steps. C. 6 inch steps. D. 24 inch steps. E. Different size steps from 6 to 24 inches. 16. Walking backwards. A. 6 inch steps. B. 3 inch steps. C. 3 inch steps. Progressing backwards. D. 6 inch steps. Progressing backwards. E. 12 inch steps. 17. Walking, placing one foot directly before the other. 18. Walking, carrying different weighted objects in each hand. 19. Trunk exercises. Bending slightly forward, backward, sideways and from side to side. 20. Exercises 1 to 19 inclusive should now be practiced with closed eyes.

When we consider the very delicate coordination necessary to the carrying out of the smallest act by means of the upper extremities, we can better realize the significance of their more delicate training.

Upper extremities.

1. Put before the patient a triangular block of wood about 20 inches long with the apex chiselled concave. With a blunt pencil let the patient draw a straight line in the concavity toward himself, then from himself. The pencil should be grasped between the thumb and fingers of the entire hand. At first the pencil will slip out of the concavity, then as the practice goes on a fairly straight line will be drawn. 2. Given a board 12 x 15 inches with numerous numbered impressions chiselled out, place it horizontally on the table. The patient is directed to put his index finger into a numbered impression, and then into other numbered impressions. This can be practised with both fingers simultaneously. A similar board may be placed in a semivertical position supported on a frame, and the same motions as above mentioned practiced. 3. Chips. Various colored chips are placed on a table, and patient or-

dered to build them up into single stacks of red, white, and blue. Then into stacks of red and white, then into one single stack, using three chips of different colors at a time. 4. Drawing. A. Straight lines. B. Triangles. C. Squares. D. Circles of different sizes. E. Parallel lines. F. Parallel circles. 5. Writing.

Treatment of eye muscles.

1. Rotation to right, then to median line. 2. Rotation to left, then to median line. 3. From extreme right rotation to extreme left. 4. Upward rotation, then to level. 5. Downward rotation, then to level. 6. From extreme downward rotation to extreme upward rotation. Then to level.

TREATMENT OF PARESIS OF BLADDER.

We sometimes succeed in correcting the urinal habits of a tabetic by instructing him to evacuate that organ, or at least to attempt it at certain definitely specified hours.

Now that I have outlined the treatment, a few words are necessary relative to the understanding of the length of time the treatment of each séance should take, of the frequency and of the indications for stopping treatment during a séance. On these points depend to a great extent the success which meets your instruction. As already mentioned before undertaking to teach a course of exercises to a patient, the pulse beats must be observed several times during rest and during work. This is the best guide to the patient's condition. It is a well known fact that the feeling of fatigue in patients suffering from locomotor ataxia is often impaired, so that the pupil himself cannot judge when he is tired.

As a rule the tabetic pulse rate is usually from 10 to 20 beats above the normal. Let us for instance take a patient with the pulse rate of 90 per minute; if after one minute's exercise this should rise to 120, as is often the case, stop the exercise and give five minutes rest. Then the pulse usually returns to the normal. Continue in this way until we see that the pulse beat rises too quickly, and does not return to the normal within five minutes.

One séance daily is usually sufficient, but in advanced cases two sittings are far better. In mild cases, i. e. ambulant type, three times weekly is all that is required.

INDICATIONS FOR STOPPING TREATMENT DURING A SÉANCE.

1. Rapid pulse, over 120, and which remains over 100 after five minutes. 2. Rapid respiration. 3. Profuse perspiration. 4. Sudden weakness. 5. Lancing pains. 6. If patient should by accident stumble. After each séance patient should be forced to rest for fully one half hour.

COMPLICATED CASES.

Hypotonia. Where the ligaments of the joints are hypotonic, i. e., when they are overstretched permitting abnormal mobility, orthopaedic apparatus directed to prevent abnormal mobility should be used, but they must have two essential features, viz., they must be as light in weight as possible, and they must not interfere with the normal movements of the part affected.

Drop feet. Where there is an apparent palsy of

the leg muscles in cases that have been forced to lie in bed for a number of years, a previous course of electrical treatment, both faradic and galvanic, with the very mildest manipulation and massage of the feet should be undertaken.

PROGNOSIS.

If the physician and the patient are painstaking, paying attention to the minutest details of the treatment as I have described it, the results derived will be a matter of great satisfaction. The ataxia will in most of the cases be cured permanently, and in a minority the alleviation of this symptom will be very marked. The length of time necessary for a course of treatment varies in each individual case, but as a general statement it may be said that it takes from two to nine months to effect a cure from the mildest to the most severe type of ataxia. Of course there are cases that it would be wise to leave alone. I refer here to those patients that are in the beginning of their disease, where the ataxia has not reached its acme. These cases naturally do not improve because the ataxia is in a rapidly progressive stage. Another set of cases where treatment is contraindicated are those that have a combination of tabes and paresis. In cases of combined sclerosis where the posterior and lateral columns are affected no good results have been obtained.

In conclusion I wish to express my thanks to my teacher Dr. Heinrich S. Frenkel, to whom I owe the knowledge of the treatment. I also wish to express my appreciation to Dr. Siegfried Wachsmann, medical director of the Montefiore Home and Hospital, for the many kindnesses he has extended to me during the treatment of these cases at that institution.

If I have, in the foregoing article, stimulated an interest for the benefit of that miserable sufferer the tabetic, my object will have been accomplished.

502 WEST ONE HUNDRED AND THIRTY-FIFTH STREET.

THE DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS.*

By W. J. PULLEY, M. D.,
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Just what is meant by incipient pulmonary tuberculosis, as far as possible, must be known, before the diagnosis of it can be discussed. The classification of pulmonary tuberculosis adopted by the National Association for Study and Prevention of Tuberculosis defines incipient tuberculosis as follows: "Slight initial lesion in the form of infiltration, limited to the apex of one or both lungs, or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent." This definition serves all practical purposes, but to my mind does not go far enough. I go further and include those cases where there is no discernable

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lesion, but where the history, subjective symptoms, and general aspect of the patient point, I might say conclusively to tuberculosis. Thus it can readily be seen that to make a diagnosis of incipient pulmonary tuberculosis under certain conditions might be a very easy thing to do, while under other conditions it might be a very difficult thing to do. Take the definition in its broader sense, where there is slight infiltration at one or both apices, slight elevation of temperature, acceleration of pulse, and tubercle bacilli in the sputum, and we find it comparatively easy to make a diagnosis. But take it in its stricter sense, where there are no discernible physical signs, but where there is a symptom complex, and we find it often very hard to make a diagnosis. This latter condition is the one which will be more particularly discussed here.

Great care should be taken in making a correct and definite diagnosis in just such cases, for it is well known that the great majority of these patients can be cured if proper treatment is begun at this stage of the disease, and that many of these cases are incorrectly diagnosed as mild typhoid, typhomalaria, neurasthenia, gastric fever, etc. I should likewise advise against waiting for tubercle bacilli to appear in the sputum before making a positive diagnosis, for it must be remembered that they are not in evidence until ulceration has freed them into the bronchial tubes, the case then is approaching the moderately advanced stage, and cure that much harder to effect. It must be remembered also that adventitious signs and changes in the respiratory murmur are usually absent until moderate infiltration and bronchial irritation have occurred. And likewise it must be remembered, that the lymph nodes and deep structures of the lungs are the most common sites for the tubercle bacilli to lodge and grow, and that this growth is often a very gradual process, which being resisted by the natural protective forces of the body, there results a symptom complex, which directs our attention not always to the lungs but oftener to the digestive tract, the nervous system, or the blood, etc. In many of these cases it is very difficult to make a diagnosis, but it can be made if the history, general make up, surroundings of the patient, and other methods of investigation are gone into thoroughly and in detail. It should be emphasized here, that in so far as any good can come to the patient individually, nothing can supplant a thorough personal study of the patient and his complaint by the physician himself, for in this way only can the links of clinical evidence be welded into a complete diagnostic chain. Laboratory examinations are not to be depended upon entirely in making a diagnosis. History taking, pulse rate, etc., are not to be left to a nurse or trained assistant entirely, because so many small but useful points in the temperament of the patient and his correctness of comprehending and answering questions will be lost sight of if this is done.

HISTORY.

The immediate family history if positive is a great help in making a diagnosis, but if negative is of no importance. The remote family history usually means nothing, as little consideration should be given to the fact that a distant relative whom the patient had never come in contact with had tuber-

culosis. On the other hand, the fact that such a relative had lived with or had come in frequent contact with the patient, should be considered a source of possible infection. The occupation, habits, and hygienic surroundings of the patient, are of far greater importance to be considered, as representing conditions which inhibit and depress his natural forces of resistance. Many occupations are predisposing factors in putting the patient into a favorable condition for the invasion and especially the growth of the tubercle bacilli. Sedentary occupations, such as those of bookkeepers, tailors, shoemakers, etc., which constantly impede chest movements, are potent aids to the growth of tubercle bacilli. Occupations in dusty, dry places, even if the dust contains no tubercle bacilli, depress the patient's powers of resistance, because the dust mechanically clogs and irritates the mucous membrane of the upper air tract, eliminating its natural protective powers. Consideration must be taken of the patient's social habits, as to excesses of any kind, as in venery, in drinking, in physical exercise, etc. Overwork, worry, too frequent parturition, irregularity of eating and sleeping, all tend to depress the natural forces of resistance of the patient. The patient's home life as to sleeping and living quarters must be studied. Patients may work under perfect sanitary conditions, and at home live and sleep in imperfectly ventilated rooms, breathing over and over again air which at best contains partially oxygen devitalized for want of sunlight and circulating breezes—and in this manner have their natural forces of resistance lowered. It is not necessary to have this particular air contaminated with tubercle bacilli, since it is not very difficult for one to come in contact with them, under the ordinary conditions of every day life. In a great number of cases it is impossible to obtain a history of the specific source of tuberculous infection. It has been my purpose in fact, in speaking of the history in detail, to emphasize the importance of ascertaining the conditions in the lives of the patients, which depress their vital functions, rather than wasting time in looking for specific sources of infection. The ubiquity of the tubercle bacilli is well known to every medical man.

SYMPTOMS.

Incipient pulmonary tuberculosis may be a disease of symptoms only. These symptoms may be either local or general, occurring separately or together in a patient.

Local Symptoms. Local symptoms such as cough, expectoration, hæmoptysis, pain in the chest, and dyspnoea direct our attention immediately to the lungs. These symptoms may all be present in the same patient, or they may occur singly or in different combinations. Tuberculosis should be suspected in any patient who complains of a persistent or frequently recurring cough, no matter at what time of the year it occurs or how slight it is. It must be borne in mind, however, that other conditions than tuberculosis produce coughs. Irritants of any kind in contact with the mucous membrane of the respiratory tract, impacted cerumen, Eustachian tube inflammations, varicose veins at base of the tongue, enlarged tonsils, etc., may produce a persistent cough. Likewise certain forms of stomach trouble, and dis-

eases such as asthma, nephritis, and cardiac diseases will under certain conditions produce a persistent cough. To my mind it is a great injustice to the patient to diagnose any or all of these local symptoms as due to tuberculosis, before considering them thoroughly enough to reasonably exclude other diseases. It is well known that there are cases in which a doubt must exist on account of the lack of definiteness in our methods of investigation. I elect to consider such cases tuberculous, because a cure being the thing striven for, the treatment for tuberculosis will cure most of these doubtful cases. I believe that in order to come to a correct diagnosis in these doubtful cases, the examiner must get as close to the patient in his reasoning as possible in order to observe every detail correctly. The examiner must go into the history in detail himself, weigh every symptom carefully, not only the local symptoms referable to the lungs, but also the general symptoms referable to the other systems of the body. The observer must gain the patient's confidence, he must relieve his fears and nervous tension, in other words he must thoroughly know the patient. In some instances the patient must be seen several times before a positive diagnosis can be made.

General Symptoms. Incipient pulmonary tuberculosis, as has been said, may be a disease of general symptoms only, often of a complex nature, even before any local symptoms or physical signs appear. This can be readily understood if the gradual growth of tuberculous infections of the lymph nodes and deep structures of the lungs is borne in mind. Under such conditions the slow poisoning of the system, due to the absorption of toxins and other products, manifests itself in a rise of temperature and chilliness, a feeling of languor, loss of appetite and flesh, digestive disturbances, increasing pallor, and nervousness. Such symptoms in a patient must be considered due to tuberculosis where other diseases as typhoid and paratyphoid fever, malaria, local suppurations, gastric fever, etc., can be reasonably eliminated.

PHYSICAL SIGNS.

Incipient pulmonary tuberculosis may be a disease of physical signs only. It is not an uncommon occurrence to find more or less positive physical signs at the apex of a patient's lung who complains of no subjective symptoms, not even a cough. Such a patient usually has a cough, but it is so slight that it is unnoticed, and it is very difficult to get the patient to admit it. I feel that it should be emphasized here that a patient of this kind is a grave menace to the health of others, for being unmindful of his real condition, the proper care is not taken to prevent drop infection.

Auscultation. The physical signs which are gotten in incipient pulmonary tuberculosis are in the majority of cases few, and in many cases none at all. Before referring to those which do occur, I wish to speak of the absolute necessity, after taking the history, of baring the patient's chest to the skin and then auscultating, first with the ear directly to the chest wall and then with the stethoscope, and only the ordinary quiet respirations, permitting the patient to take no full or deep inspiration during the time. Then explain what is meant by a full, deep

inspiration, and try to demonstrate to the patient how it is done, in order that he will not through ignorance disturb the normal respiratory rhythm. The examiner is often balked here by the patient assuming an unnatural pose as to his chest, and breathing with a nervous, jerky respiration, stopping before the end of a full inspiration and holding himself so long in this position as to upset the normal respiratory rhythm. It is advisable after listening to the ordinary quiet respirations, to listen to full deep inspirations, especially to those following a cough. The cough simply deepens the inspiration in a patient who cannot do it voluntarily on account of nervousness or ignorance. Always begin at the apex going down along the anterior and posterior borders of the lung, because these are most usually the places first involved, called by some the danger zones. If adventitious signs are heard with quiet respirations, I believe as others do, that the case is approaching the moderately advanced stage and not strictly incipient. I would also caution against making any other physical examination of the chest which involved a full, deep inspiration before auscultating. The routine of some examiners is first to inspect the chest as to its capacity to expand, then measure for circumference and diameters, then percuss, and lastly auscultate. My plan is to reverse this procedure, because often a full inspiration will clear up temporarily adventitious signs which might for the time being escape attention. The auscultatory signs of incipient pulmonary tuberculosis if present at all, are usually localized at the apex or the anterior or posterior border of the lung. There are usually no appreciable changes in the respiratory murmur in very early tuberculous processes of the lung. When infiltration becomes apparent changes in the respiratory murmur indicative of lung condensation are gotten. An interrupted or jerky breathing, formerly spoken of as pathognomonic of lung tuberculosis, usually means nothing more than nervousness or digestive disturbances, in the early stage of this disease. The râles most commonly heard here are crepitant, sibilant, and subcrepitant, named here in the order of their priority of occurrence. None of these may be heard except during a very deep inspiration or an inspiration after coughing. Allowing the patient to rest in the recumbent position for awhile, will often bring them out more plainly. Potassium iodide in five grain doses for a day before the examination has been given, for the purpose of bringing out these râles more clearly. Its use has never been an aid to me.

By means of percussion, mensuration, palpation, and inspection, evidence is obtained in making a diagnosis, but this evidence must be corroborated by auscultation to be conclusive.

Percussion: A slight loss of resonance over either apex is of course suspicious. A difference of three to five centimetres in the extent of resonance—when the right and left sides are compared along the superior border of the trapezius muscle—I would consider suspicious. The resonance here is one to two centimetres greater on the left side than on the right normally. There are no other signs on percussion of practical importance in very early pulmonary tuberculosis.

Mensuration: By this the relative size of the right and left sides of the chest can be gotten, and the extent to which the chest can expand. It gives us the circumference of the chest at forced expiration and at forced inspiration, the difference between these two measurements being the entire expansive movement of the chest. A difference of less than five centimetres between these measurements I would consider suspicious, especially in the male because it is due in the majority of cases, to either a tuberculous process or a weakness of muscular power, especially of the inspiratory muscles, which in itself calls for suspicion, since it denotes that the patient is unable to breathe and ventilate the lungs properly. The length, breadth, and thickness of the chest can likewise be ascertained by mensuration. The lateral diameter of a normally shaped chest usually measures six to eight centimetres more than the dorsoventral. It can be seen then that suspicion should be had of a chest in which the lateral and dorsoventral diameters are as near the same measurement as three to five centimetres, or the lateral increased over the dorsoventral as much as nine to twelve centimetres. The former is a round, long chest, and the latter is a flat chest, neither of which are normal. The first denotes a chest of arrested development and the other a chest irregularly developed. While it is generally admitted that not even a normally shaped chest is immune to tuberculous infection, it is likewise admitted that such a chest is far more resistant than either a round or a flat chest.

Palpation: Palpation is rarely of any assistance in making a diagnosis of early tuberculosis of the lungs. The pulse is studied principally by palpation, however, but it presents nothing *per se*, which is pathognomonic of incipient tuberculosis. In the large majority of cases the pulse is accelerated from ten to forty beats per minute at some time during the day even after the patient has rested physically for some time. The pulse is usually soft and perfectly rhythmical but may be weak and easily accelerated. In that type of early tuberculosis, in which there is a neurotic element, the pulse becomes very rapid upon the slightest exertion and the hands of the patient are cold and clammy.

Inspection: By inspection there is little positive information to be gotten which will assist in making a definite diagnosis of early pulmonary tuberculosis. Clubbed nails; fine, brittle hair; tænia versicolor; etc., are evidence of poor nutrition and nothing else. I wish to advise here the necessity of inspecting as a routine practice the condition of the upper air tract, including in this examination the tongue, teeth, tonsils, and pharynx. By observing the mucous membrane of the nose, nasopharynx, and larynx pretty clear evidence can be gotten as to whether these are normal functionally or not. One of the principal functions of these mucous membranes is protective to the lower respiratory tract. A thinned, dry, nasal mucous membrane affords just as little protection to the deeper respiratory organs as a thickened mucous membrane which does not allow the air to pass in freely. Of 333 patients with pulmonary tuberculosis observed by me, complicated by tuberculous laryngitis, only sixty-eight had normal nasal chambers, 180 of these patients suffered

from some form of nasal obstruction, and eighty-five had atrophic rhinitis.

Temperature: A diagnosis cannot be complete unless the condition of the patient's temperature is known during certain parts of the twenty-four hours. In many cases the temperature must be taken for several days before a conclusion can be arrived at. In the majority of cases the temperature is elevated one half to one degree during some part of the day, usually in the afternoon. Physical exercise will usually cause the temperature to rise. There may be days at the time during which this rise of temperature does not occur especially if the patient has been resting physically. Such cases often lead the less careful observer into making a false diagnosis of malaria. In looking over the histories of my tuberculous patients, I find a large percentage giving histories of having had malaria at some previous time. This so called malaria was probably due to an old tuberculous process becoming active for the time being, producing fever and malaise. By no means, however, in every case is the temperature elevated, but on the other hand it may be subnormal. This subnormal temperature usually occurs in patients who are decidedly nervous and who have a fast, small, and irritable pulse and cold and clammy hands and feet.

ADDITIONAL METHODS OF INVESTIGATION.

Having examined the patient from every clinical viewpoint a diagnosis can be correctly made in a large majority of all cases. Having done this it is not really necessary to go into further investigations. This statement is not meant to convey the idea that work in the laboratory is not very often of great value in helping to make a correct diagnosis in the obscure cases, but I do mean to convey the idea that laboratory work, in the majority of instances, bears a secondary importance to a close and detailed study of the patient clinically. In other words if any one part of the examination is to be depended upon for a useful diagnosis, let it be the thorough clinical examination of the patient. The ideal condition of affairs would be a more perfect coordination between the clinician and the laboratory worker than now exists. By all means examine the sputum if there is any. In children this is impracticable, and even in adults who have pulmonary tuberculosis a large percentage may have sputum free from demonstrable tubercle bacilli. A positive finding is of course conclusive, while a negative finding only means further examinations. By no means depend upon or wait for a positive finding of tubercle bacilli in the sputum before making a diagnosis and beginning treatment. Examinations of the urine for tubercle bacilli has proved of little diagnostic aid, but Rosenberg especially seems to have done some very careful work in examining the faeces, and tells us that tubercle bacilli can be found in the faeces in 19.6 per cent. of all tuberculous persons who give no positive signs of tuberculosis. The bacilli do not necessarily come from the sputum swallowed or from intestinal ulcers, but may come from tuberculous lymph nodes, bones, or serous membranes, being thrown off by an intact intestinal mucous membrane. Many sensitive persons rather than spit will swallow their sputum, sending the bacilli directly

into the intestines. It is advisable to make a careful examination of the feces in all obscure cases. There is nothing of a positive nature to aid us in studying the formed elements of the blood or of the blood as a whole. Up to the present time a study of Wright's theory of opsonins has proved of little practical aid in a diagnostic way, principally because it takes an expert with marked technical skill, to come to a correct conclusion as to the findings.

Cytodiagnosis is said to be of some aid diagnostically, that is if an effusion contains lymphocytes almost entirely, tubercle bacilli is the cause of it. Inoscopy as suggested by Jousset is also of doubtful value. The injection of tuberculous fluid into guinea pigs may prove the presence of tubercle bacilli when the microscope has failed to find them. Agglutination is not of practical use in the diagnosis of obscure lesions because of the fact, that in some instances serum taken from a person known to be healthy, will cause tubercle bacilli to agglutinate.

X Ray. The x ray by means of the radiograph serves to give confirmatory evidence in making a diagnosis. The shadows shown in the Röntgenograms aid in locating exactly a lesion, indefinite on account of doubtful physical signs. An unilateral malposition of the diaphragm can likewise be seen in these x ray pictures. The very faint shadows often shown in the x ray negatives, and described as small tuberculous foci, may be only atelectatic spots or lymphatics and lymph nodes filled with dust particles. The fluoroscope is of but little practical diagnostic value.

TUBERCULIN.

I have purposely placed the diagnostic use of tuberculin last, because I feel that it should be the last thing used in our efforts to make a diagnosis. In the first place its use often misleads us in obscure cases to the detriment of the patient. A small, inactive tuberculous process in a person suffering from some other active disease, will sensitize this person to such an extent, that tuberculin will produce a reaction. The reaction misleads the observer into considering the existing symptoms due to the inactive tuberculous process, while in reality they are due to some other active disease. As an example, a patient came under my observation for diagnosis, suffering from a cough, marked hoarseness, and loss of flesh. The lungs were negative upon examination, but I found the right vocal cord paralyzed, which, from the history, I thought might be due to an old pleuritic adhesion or pressure by an enlarged tuberculous lymph node on the recurrent laryngeal nerve. There was a marked reaction to the ophthalmotuberculin test. The patient did not improve under tonic and hygienic treatment, but gradually grew worse and finally a severe nocturnal headache developed. She was put upon antisyphilitic treatment and began to improve immediately. In the next place it is admitted that tuberculin has, when used in the eye, been known to produce permanent injuries. The reactions gotten by the Moro and the von Pirquet methods, are often as low as twenty-five per cent. in doubtful cases. The subcutaneous injection of tuberculin gives a larger percentage of reactions in these doubtful cases, but here we have the disadvantage of injecting a poison into the blood the patient. This method cannot be

used in febrile cases. I believe our present limited knowledge of the action of tuberculin makes its diagnostic use comparatively rarely indicated.

CONCLUSIONS.

The points which I have tried especially to emphasize in this paper are: That one should study the depressing and inhibiting conditions in a patient's life, rather than spend too much time in looking for specific sources of infection in making a diagnosis.

That nothing can take the place of a close, personal study of the patient.

That there should be a more perfect coordination between the work of the clinician and the laboratory worker.

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A FEW POINTS ON THE EARLY DIAGNOSIS OF TUBERCULOSIS.

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We in the west are seldom called upon to make an early diagnosis of tuberculosis. The cases that reach us are, for the most part, in the far advanced stages of the disease and offer no difficulties in the way of confirming the reports of our brothers in the east. An incipient case is with us a *rara avis*, and great is the rejoicing in the health resorts of this section of the country when such a bit of good fortune comes our way. Could we but have even a small percentage of such cases, the good results obtained here in the treatment of tuberculosis would far exceed the fondest hopes of all those interested in the so called curability or improbability of this disease. On the other hand, when an early diagnosis is made, the patient is kept at home with great promises of what the so called home treatment can do, until the disease has made such inroads that a cure is all but impossible. In fact, the curability of tuberculosis has been so extensively exploited by the more optimistic members of the profession that to-day the average layman thinks the disease as easily cured as mumps or measles.

Cures, as a rule, are made in the early stages. When that stage is passed, the chances grow less and less as the pathological condition increases. It necessarily follows then that to get the best results an early diagnosis is a necessity.

The literature on this particular phase of the question is filled with excellent articles, full of pregnant suggestions, and for the most part covering every essential feature. In presenting this paper, it is my object to give what I consider the essential factors in making an early diagnosis, and which, if followed by the general practitioner, to whom most patients come in the early stages, will enable him to detect a tuberculous lesion, if such exists.

The criticism to be made on the majority of papers on early diagnosis is one of too much science. The busy doctor has neither time nor inclination to pore over page after page telling what to expect and what not to expect from the various methods of diagnosis. To be sure, they all have their place and can be utilized by many men who live where they

can avail themselves of laboratory methods and the means at their disposal in large cities. On the other hand, there are thousands of physicians living in small country towns who must of necessity depend upon their own ability when patients present themselves for examination and advice.

It is for these men that I shall endeavor to chronicle in a brief way the factors I consider essential in an early diagnosis of tuberculosis. We must of necessity presuppose at least a working knowledge of physical diagnosis. It is a deplorable fact, but one none the less true, that not a small percentage of men in the practice of medicine would, figuratively speaking, fail to recognize a pair of lungs on sight. These men are hopeless, and from a humanitarian standpoint should be barred from the profession.

For sake of convenience, I shall group the various factors concerned under three heads: 1, Case history; 2, physical signs; and 3, tuberculin. These headings I shall discuss separately.

I. CASE HISTORY.

Under case history, find out age, sex, nationality, occupation, and marital conditions. All these play a part in one's opinion of the patient, since it is obvious that they all bear more or less directly upon the disease. Insist that all answers are to the point. In taking the family history, do not stop with the immediate family. Find out whether uncles, aunts, grandparents, or great grandparents, or any one in any way connected with the patient ever had tuberculosis, or a disease that would lead you to suspect such a condition. In this connection, a history of a fall with permanent injury, together with a gradual decline until death, may be all your questions will elicit, but that part alone should put the examiner on guard. Then, the fact that a mother may have died some time after childbirth, having never been well since the baby came, leads one to suspect tuberculosis. A characteristic family disease, such as heart disease, Bright's disease, or insanity may play an important part, for how many cases can you remember in your own practice that were secondary to tuberculosis. These points I merely throw out as suggestions to show the vast possibilities in a thorough case history.

Next take up the patient's previous condition from the earliest period he can remember down to the time of his supposed infection. Has he always been considered well and strong from childhood? Is there a history of scrofula or one of bone or joint disease? Any enlarged glands? In this connection, let me suggest that you palpate the regions for such enlargements. Do not take the patient's word for their existence or nonexistence. Is there a venereal history, or that of a dissipated life? Has the patient ever been associated with a consumptive in his work, or otherwise, and, if so, for how long and in what way? Why did the patient see fit to consult a doctor? Was it for loss of appetite, a general run down feeling, fever, cough, stomach trouble, loss of weight, night sweats, hæmorrhage, pain in the chest, or what not? Any one of these symptoms, although they may perhaps appear trivial, may be an early sign of tuberculosis.

Let us consider them separately and more in detail.

Loss of appetite. This is very characteristic of

an early consumptive. Owing to the absorption of toxins throughout the entire system, there is caused a general feeling of malaise, which invariably takes away the desire for food. As a matter of fact, food is repulsive to the average patient with beginning tuberculosis.

Fever. Do not be content with the temperature taken when the patient presents himself for examination at your office. Nine times out of ten you will find the temperature normal or subnormal. Have the temperature recorded on rising in the morning and then every two hours throughout the day for a period of a week. In that way you will catch any afternoon rise, and have the curve for your consideration and guidance. How often we find a far advanced consumptive declare he never had fever, and then upon careful watching find it reaches a maximum of 100° F. or over every day.

Cough and expectoration. Do not be in a hurry to attribute a cough to everything except tuberculosis. Always suspect phthisis until you have proved it otherwise. There may be little or no expectoration—only a dry hacking cough that may have extended over a period of years; but, as a rule, if allowed to go untreated, softening will occur, followed by a profuse expectoration when the disease has made such inroads that it can be detected at a glance without the aid of the finer methods of diagnosis. You may be told by the patient that some doctor called it a stomach cough. That is a polite way of saying "I do not know," or else shows that the man has not the courage of his convictions and is fearful of telling his patient the truth. Truth and truth alone should be the motto of every clean minded physician. It is his duty to tell a consumptive the truth regardless of its effect. There are scores of others crying for protection against the great white plague, and this protection is lacking and the disease spreads broadcast by the doctor who fails to enlighten any tuberculous invalid concerning his condition. On the other hand, I find patients who are told the truth and given the proper advice do far better and make greater strides toward recovery than the poor misguided souls who are told they have a stomach cough or a slight touch of malaria.

Stomach trouble.—In the early stages, more or less trouble occurs with the digestive apparatus. Owing to the toxins absorbed into a system not yet accustomed to the poisons, the normal digestive reactions are upset with a resulting indigestion and loss of appetite.

Loss of weight. Here we have a very characteristic symptom and one that should arouse suspicion at once. Given a patient with the symptoms already enumerated and showing a progressive loss of weight, we are almost sure to find a tuberculous lesion. The loss may be slight at first, but even a week's observation will show a down hill tendency. I have seen patients show a daily loss, the weights being recorded every morning.

Night sweats. These are common with a large percentage of consumptives. And do not think that the disease must be of long standing to produce excessive sweating at night. I have seen an incipient case in which the patient found it necessary to change night clothes two or three times during the

sleeping hours because of excessive perspiration. This same case never exceeded 99.8° F. as an average daily maximum temperature.

Hæmorrhages. Hæmorrhages are not uncommon in the very beginning. The bleeding comes as a rule from the great amount of congestion incident to the inflammatory changes taking place in the infected area. It is usually slight, seldom exceeding an ounce, and may even show itself only in blood tinged sputum. The same rule holds here as in the case of a cough. Do not be too prone to attribute the oozing to the stomach, throat, gums, nose and what not, but suspect tuberculosis from the moment you learn such hæmorrhages to have occurred. Less mistakes will be made and more people given the benefit of an early diagnosis and, therefore, a far better chance for cure. To me the patient who is fortunate enough to bleed; and bleeding, is wise enough to consult a good physician, is a person to be congratulated, since his chances for recovery are a hundred to one better than those of the misguided wretch who "just feels run down" and permits his disease to reach that stage where the average layman can diagnosticate consumption by merely glancing at the unfortunate victim.

Pain in the chest. This symptom is usually due to a myositis or pleurodynia, but is secondary, as a rule, to a tuberculous process beneath. Just what relation it bears to the pulmonary condition, I believe, is not known. Some assert it is due directly to the infection in the lung, while others believe it to be a result of toxæmia. I am inclined to think the latter supposition the correct one. However, laying aside the cause, it is sometimes the first intimation the patient may have of an underlying pathological condition.

Having considered the previous history, let us now look to the present condition of the patient. In this connection, I inquire as to the bowels, examining, too, the mucous membranes, appearance of the tongue, mouth, pharynx, larynx, tonsils, and glands. Get also the present weight, height, temperature, pulse, and respiration. Some of these have perhaps been obtained earlier in the examination, but it is well to get them at this time, in order that the history may be recorded systematically. These symptoms need little comment, unless perhaps a few words relative to the pulse might prove of value. I know a physician who diagnosticated his disease merely from an increased pulse with no other symptom for guidance. Usually this increase is an early symptom, the rate running from 90 to 120 a minute, and often being noted before the characteristic afternoon rise of temperature.

Along this line, I usually examine the blood with reference to the hæmoglobin and take a record of the blood pressure. In many cases, one notes an anæmia, which, in the light of other symptoms, might suggest the nature of the trouble. As to blood pressure, I feel the value from a diagnostic point amounts to little. However, as I showed in the *Archives of Internal Medicine*, August, 1908, it is of value from a prognostic point of view, and for that reason I always record the finding in my routine work. Here, too, may properly come the examination of sputum and urine. The sputum examina-

tion is, of course, done by most men, but that it is carelessly done, I am quite convinced, and further, that too much dependence is put upon the result I know. So many physicians seem to think because a given specimen of sputum is negative that tuberculosis cannot or does not exist. He is a poor diagnostician, indeed, who waits until tubercle bacilli can be demonstrated in the sputum before making a diagnosis of tuberculosis. I never think I have done my duty until I have made at least twenty consecutive examinations, and then only when I have satisfied myself by other tests that the disease does not exist. I remember one case in which I examined the sputum on twenty consecutive days each month for a period of three months, being rewarded at the end of the sixtieth examination by finding the bacilli; the patient was one of the so called closed or nonulcerative types in the beginning, but gradually grew worse until ulceration occurred, bacilli appeared, and finally death ensued. Again, I have seen cases with every sign and symptom except bacilli in the sputum go to the grave, and in the post mortem room show lesions typical of tuberculosis from apex to base. Just why we were unable to demonstrate bacilli I cannot say, unless, perhaps, they occurred in a degenerate form, which I believe some men assert and have produced a stain to demonstrate such forms. These cases unfortunately occurred before this theory was advanced, so we can only guess at the condition. I am inclined to think, however, that some such explanation as the foregoing would be applicable.

Another reason I believe for failure is faulty staining. Nearly every practitioner uses Gabbott's methylene blue as a counterstain, which is supposed to contain the decolorizer in the stain. This method will prove fairly satisfactory when the bacilli occur in such large numbers that, figuratively speaking, they could be seen with the naked eye. However, when only a few exist in a given sample, the method is faulty in the extreme. For my decolorizer, I use a solution of

Hydrochloric acid,	5 parts;
Alcohol, .....	.70 parts;
Water, distilled, .....	.25 parts.

After staining in carbol fuchsin for two or three minutes, during which time I boil the stain, I wash in water and then transfer the cover slip to the decolorizer, leaving it long enough to render the smear a light pink. This I wash, blot, and counterstain with Loeffler's methylene blue. This method is advocated in the later textbooks, and I find it very trustworthy for all practical purposes.

In the urine examination, the only thing of importance is the presence of albumin or casts. In a tabulation of 100 cases, I found that thirty-seven patients showed signs of kidney irritation. With a percentage as high as that, the routine examination of the urine would perhaps throw some light on a suspected case.

II. PHYSICAL SIGNS

It is at this point that the knowledge of physical diagnosis enters, and the lack of such knowledge places a man in an embarrassing position. However, with the other findings at least partially positive, we should not be long in doubt regarding a

diagnosis. The tuberculin test, if carefully given, and which I shall consider toward the end of the paper, will help throw light on difficult cases.

To begin with, the patient should be placed in a good light and a careful examination of the chest made by means of inspection, palpation, percussion, and auscultation.

Under the first two heads, we should note the type of chest, unnatural enlargements, depressions above and below the clavicle, unilateral restrictions, enlarged glands, and the vocal fremitus.

Type of chest. Two forms are of interest; viz., the flat and the pterygoid or alar chest. In the former, the anterior posterior diameter is lessened, the costal cartilages being straight, and the chest, if the condition is well marked, sunken in on both sides. The pterygoid type is characterized by a distinct stoop of the shoulders, prominent scapulae, wide intercostal spaces and a long narrow thorax.

Personally, I feel after careful observation that any particular type of chest is rare in tuberculosis. I merely mention these, for, as a rule, when such a chest is found, it is usually indicative of tuberculous trouble. However, all forms and conditions of chests exist in tuberculous subjects.

Unilateral enlargements.—These are of interest only in the fact that they point to pleurisy with effusion, and this condition in a large percentage of cases is a tuberculous infection.

Depression.—Depressions above and below the clavicle are seen in nearly all cases afflicted with the disease. The depth of the depression depends to some extent upon the degree of pulmonary involvement and the emaciation.

Unilateral restrictions are indicative of a pleurisy with adhesions or a chronic phthisis.

Measurement of the chest before inspiration and then after, giving one the number of inches expansion will aid in determining the respiratory movement of the thorax. In a normal man, the expansion should be at least two inches, and two and a half inches in women. Anything under these figures should be looked upon with suspicion.

The increase or decrease in vocal fremitus, demonstrated by placing the hand on the chest wall and asking the patient to count aloud is indicative of the same conditions as that found under the paragraph on vocal resonance, which will be considered under the head of auscultation.

Percussion. Percussion is of aid in determining the boundaries of the thoracic organs and as an aid in diagnosing the presence of air, fluid, and cavity formation. Unless an ear is well trained the finer points of diagnosis advocated by chest specialists will be of little use to the general worker.

To determine whether or not a lung is adherent, outline the borders at apex and base anteriorly and posteriorly after expiration and then again in full inspiration. If adherent the border line will remain unchanged, while on the other hand the area of resonance will be increased.

In pulmonary emphysema, the percussion note is usually excessively resonant, almost tympanitic, while in case of fluid the note is dull, and can be differentiated from the ordinary dullness of consolidation by a change in the character of the note on a change in position of the patient.

Cavity formation gives us the so called crack pot

resonance. This sound is tympanitic and, as we all know, is supposed to resemble the sound produced by striking a cracked metallic vessel. To eliminate the sound, the percussion stroke should be sharp and strong, allowing the plexor finger to rest upon the pleximeter finger. Then, too, the mouth of the patient should be open and the percussion made during expiration. However, do not be too positive of cavity formation. The diagnosis of cavities are made more often in telling about them than in actual practice, and many men are too prone to diagnose a cavity, and then in a subsequent examination in a month's time find that the large hole has all filled in and disappeared. But cavities have no place in the early diagnosis of tuberculosis. They are a result of the so called bronchitis, throat trouble, and stomach cough, and reflect upon the early examinations of careless physicians, or upon the foolhardiness or ignorance of the unfortunate possessor.

To enumerate the various findings in auscultation would bewilder even a pulmonary specialist, for the current literature abounds in new signs and new methods, as many and varied as are the workers along this line. The points to be gained are a determination of the character of the breathing, vocal resonance, and the presence or absence of abnormal sounds such as râles, etc.

Calling all normal breathing vesicular for the sake of brevity, I divide abnormal breath sounds into bronchovesicular, bronchial, and amphoric breathing. As illustrations of these, the bronchovesicular is best heard over the lower part of the manubrium, bronchial over the trachea, and amphoric breathing may be simulated by blowing over the mouth of an empty bottle. Cavernal breathing is only a deeper form of bronchial and may be termed a low pitched bronchial type.

In very incipient cases, the normal vesicular breathing is only slightly impaired and is distinguished by a slightly sharpened inspiration and a prolonged expiration.

Bronchovesicular breathing denotes a slight consolidation or a dense infiltration, while bronchial breathing is indicative of dense consolidation, and may even denote a superficial cavity. Cavernal breathing is indicative of cavity formation, but, as in percussion, one must not be too easily led to a diagnosis of this condition.

The qualities of vocal resonance are judged by the spoken and whispered voice. The objection to the spoken voice is that owing to its harshness the nice distinctions are harder for the general man to master. However, after the physician has acquainted himself by repeated examinations of the normal chest, with the normal vocal resonance, then in a given pathological condition he must only distinguish between an increase and a decrease in such resonance.

A decreased resonance is found in pleural effusions, emphysema and in old thickened pleura, while an increase is indicative of infiltration or consolidation, the variation of increase varying according to the degree of such infiltration or consolidation. Whispered pectoriloquy is another sign of cavity formation, and when the condition exists the whispered words are heard clearly in the ear. This sign, together with cavernal breathing and cracked pot

resonance warrants a diagnosis of cavity. However, I still maintain that the question mark plays an important rôle.

The question of râles alone might well fill a text-book. Every writer describes a new form and adds thereto a name, until we are hopelessly lost in bubbling waters of pulmonary moisture. However, for all practical purposes, there are râles or there are none. They are dry or moist, loud or soft, and when they exist they denote a pathological condition, and if in the apex or upper part around the angle of the scapulæ are as a rule indicative of tuberculosis. For the general practitioner, it is needless to know the many definite varieties or what specific meaning they may have. What they must know is whether or not râles exist, and then interpret them according to other symptoms elicited by a thorough examination. Râles alone are a very common early symptom and should be looked upon with suspicion. So many men are too prone to call the case one of bronchitis and tell the patient to go on his way rejoicing, when out of justice to both patient and physician, the individual should be advised to begin at once the hardest and most tiresome of all tasks allotted to mankind—that of getting cured of tuberculosis.

III. TUBERCULIN.

Since 1907, much has been written concerning the value of the different tuberculin tests as diagnostic agents. This much any fair minded man must admit—that tuberculin from a diagnostic standpoint is most valuable.

Perhaps because I have always used the old method, I find it the most satisfactory. I give hypodermically as an initial dose 0.01 mg. of Deny's filtrate. If no reaction occurs, I increase the dose to 0.1 mg. on the fifth day, then to 1.0 mg. and then to 5 mg., allowing the same interval of time to elapse between doses. If the reaction occurs after any one of these doses, the next increase dose is not necessary. A reaction is denoted by a rise of at least 1 degree temperature, increased cough and expectoration, headache, pain in the back and joints together with a general feeling of malaise. These symptoms begin, as a rule, during the first twenty-four hours, and seldom last over forty-eight or seventy-two hours. I have found this a very satisfactory method and one in which I have seen no ill effects.

The ocular test I mention only to condemn when used by the average man. The only person I believe justified in using this test is an oculist, and then the selection of cases should be done with great care. Personally, I have never used the method, but I have seen some serious results in patients coming to me on whom the test had been used.

The cutaneous test is becoming widely used. The procedure is as follows: After thoroughly cleansing the skin, say of the forearm, two drops of Koch's old tuberculin, undiluted, are placed at separate points on the surface. Through these drops the skin is scarified, and at the end of twenty-four hours if the reaction is positive a papule occurs at the point of scarification.

Some workers prefer a tuberculin ointment which is rubbed into the skin of the abdomen. A positive reaction is indicated by an eruption of papules at

the point of application. This method, while perhaps not always as successful, is the least dangerous and can be easily applied by anyone. However, I feel that when a person is at all familiar with the use of tuberculin, the hypodermic method will be productive of satisfactory results.

In concluding this paper, I may emphasize the fact that it is in no way intended to be a complete digest of the many points in early diagnosis; nor is it intended for any but the man in general work, but for him I trust that the signs and symptoms here outlined may be of some value in aiding him to detect at the earliest possible moment evidences of pulmonary tuberculosis.

POSTOPERATIVE SUPPRESSION OF URINE.

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The purpose of my paper is to bring before the surgical profession the fact that we are to-day, the same as twenty years ago, hopelessly in the dark as to the ætiology and pathology of postoperative suppression of urine. Therefore our treatment must be far from scientific as it is wholly empirical. We are to blame, not the pathologist, for if we had not been standing still which means to retrograde in this day and generation, more patients suffering with this condition and ending fatally would have been sent to autopsy where a careful study of diseased tissues would at least have thrown some light on this all important subject. Only by combining the powers of the clinician and the laboratory man and the pathologist can we ever hope to see the beginning of a successful ending. That the one man's idea of the past cannot do it all, is plainly shown by the divisions already made in the art of medicine and surgery to-day.

ÆTIOLOGY.

The cause of postoperative suppression of urine is as yet unknown, though many theories exist in the minds of the profession at the present time. The gross lesions that present themselves are easily detected, but alas, 'tis the hidden bomb that explodes when we least expect it. We stand by the bedside of our patient and see the light slowly fade away after, perhaps, a most skillful operation has been performed, and yet we seem wholly unable to defend our patients against this sudden attack. Why? Because we have been content to say these long years, postoperative suppression of urine is the cause of death. Quoting from Dr. Harlow Brooks, of New York, "a paralysis of the renal activity due to overstimulation of the sympathetic, which probably takes place in some cases of shock, is a factor well worth considering." Again a view brought forth, worthy of consideration, by Dr. G. W. Crile, of Cleveland, Ohio, is, "lowered blood pressure reduces the output of the kidney." According to Dr. Bloodgood, of Johns Hopkins: "Where no kidney lesion is demonstrable postoperative suppression of urine seems to be due to a reflex act." Dr. G. B. Johnson, of Richmond, Virginia, refers to chloro-

form as its causing factor, accompanied by acute fatty degeneration of the kidney. Now, whether we are to lay this condition at the door of the anæsthetic, whether it is ether or chloroform, properly or improperly given, is another question that can only be proved by experimental work along this line on healthy animals. This I strongly advocate. Dr. W. J. Mayo, of Rochester, Minn., considers post-operative suppression of urine, due to a toxic state of the blood. This might well be a causing factor. I believe a reflex inhibition directly or indirectly, plays prominently in this field. What causes this reflex I have not as yet found out. Dr. Albert J. Ochsner, of Chicago, has given up the use of calomel and salts before his operations. Since using oleum ricini before his operations thereby causing less depletion his cases of suppression have markedly decreased; another point to be borne in mind.

As you can see we are still wavering as to its ætiology; and at the present rate of progress, we will be some time regaining our equilibrium.

PATHOLOGY.

In the modern textbooks on general or special pathology you will find but little on this subject, and this of doubtful character. If we still neglect this subject in the future as we have in the past, "the gruesome store house of facts, pathology," will still have a vacant space amongst its arches, which the pathological mind should long ago have filled in. The pathologist of to-day as in the past has not had the opportunity to investigate enough of this material to produce facts; therefore without facts we have no pathology, and without pathology, we have nothing upon which the scientific mind can progress.

TREATMENT.

Prophylactic: There is none, for how can we prevent something we know nothing of.

Therapeutic: Until the ætiological and pathological findings present in this all important condition have been thoroughly worked out and satisfactorily demonstrated we can never hope for a sound basis upon which to apply our therapeutic ideas. However, in the meantime we should strive to obtain its causation by systematic work along all lines that might lead us to the goal of success. To obliterate this condition from the field of modern surgery would, indeed, be a monument to our profession. Hot packs, hot air baths, saline infusions and irrigation, intravenous injection of salt solution, cupping and flushing the bowels, together with counterirrigations, have all been tried, proving successful in the hands of some surgeons and to no avail in the hands of others. It is hard to say what drug has not been used in this condition and yet we have nothing that is absolutely trustworthy. I could enumerate many other methods to combat this condition but restrict myself to the one that seems most trustworthy and scientific yet by no means infallible. The treatment I refer to is the one used by Dr. Stewar McGuire, of Richmond, Va., which is as follows: "Sparteine sulphate given hyperdermically in doses of one to two grains every four to six hours." He has had no ill effects in the patients he has used this drug upon, but has had most gratifying results where other methods have

failed. Dr. Solis Cohen speaks of the bad results obtained by the use of this drug because too small doses have been given. My attention was called to this drug while I had a case of this kind at the Ogleshorpe Sanatorium. After a suppression of thirty-six hours and after numerous remedies had been tried I resorted to this mode of treatment at the suggestion of Mr. Daniels with a most gratifying result. I believe that sparteine sulphate is the empirical treatment of to-day, though we should use any method that will help the kidney to do its work.

SUMMARY.

- 1, We should realize how little we know, of this condition, ætiologically and pathologically.
- 2, More is to be learned of this condition, in the deadhouse and experimental laboratories, than on the operating table.
- 3, More systematic work should be done in gaining autopsies, of all cases succumbing to this condition.
- 4, Thorough investigations should be carried out along various lines, leading up to its ætiology, pathology, and treatment, in the large experimental laboratories of this country.
- 5, Our present knowledge does not permit us to treat this condition on a scientific basis.

111 LIBERTY STREET, WEST.

PATHOGENESIS OF ROUND ULCER OF THE STOMACH.*

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Out of the contributions that have been made in the past few years on this subject I have found three to be most interesting.

The first to be mentioned, an article by Botton, of London, shows by work of the author on guinea pigs and rabbits and also in the use of the mucous membrane obtained from the human stomach during laparotomy that certain endogenic and exogenic poisons, which select the gastric mucous membrane for their special region of attack, are contributory to the formation of the typical round ulcer of the stomach.

In the second one, the author, Turck, of Chicago, has shown to his own satisfaction that typical round ulcer of the stomach and duodenum can be produced in dogs by feeding the colon bacillus (*Bacillus coli communis*) for a variable length of time.

In the third, Bassler, of New York, shows, by his examination of the stomach washings of a large number of hospital patients with stomach troubles, the part played by gastric exfoliation (by whatever prime cause) in the production of gastric ulcer.

Before the more exact work during the last two or three decades on bacteria, bacterial poisons, and cellular poisons, there were very many varied and indefinite causes cited by pathologists as ætiological of round ulcer of the stomach. The earliest men who speculated on this subject, each reverted to the

*Read at the ninth semiannual meeting of the Thirteenth District Medical Society of Indiana, May 20, 1909.

old query: "Why does not the normal healthy stomach digest itself?" Stahl gave all the credit, why this most imminent and startling danger does not occur, to the protection offered by the "sensitive soul."

Hunter's "living principle" displaced the more metaphysic explanation offered by Stahl, and the best we have been able to say up to the present is that the mucous membrane of the stomach retains its integrity, in spite of the digestive juices, due to the "vital resisting power of the tissues." The work of one of my authors, Botton, is along the line of explaining this quandary on an exact and scientific basis, for he has by the injection of a gastrotoxin, extracted from the cells comprising the gastric mucous membrane of one animal, into the circulation of another animal produced an immunity in the second animal to this gastrotoxin. As a result of this immunity produced, in the second animal, it enjoys a protection against round ulcer of the stomach not shared by a third animal of different species in whom typical round ulcer may be produced by injection of a serum procured from the immunized animal. Before the report of Botton's work one other investigator, Weinland, had described an antipepsin ferment which was supposed to reside in and to form a part of the gland cells thus intimately protecting the same from autodigestion. Further investigation along the line carried out by Botton will give us logical and scientific grounds for replacing the vague explanations of investigators of the prescientific period in medical research, with the statement that the stomach does not digest itself because of a specific integral immunity possessed by the normal healthy mucous membrane of the stomach against the force or forces at work to cause ulcer.

Round ulcer of the stomach has been an interesting subject on account of the relative obscurity of its pathogenesis, on account of the opportunity for speculation it has afforded and on account of the invitation for research it has given men who like to have a theory proved in no uncertain way and who are desirous of knowing the truth. Besides this, the following characteristics are peculiar to the typical gastric or duodenal ulcer and contribute to its interest:

- 1, It is round or oval in outline. Rokitsansky described this feature lucidly in these terms: "It looks as if it were stamped out with a die; the round sharp outline of the lesion is usually considered characteristic for gastric ulcer and hence the common name 'round ulcer of the stomach'";
- 2, there is very little inflammatory reaction around it—no swelling and little redness;
- 3, it is usually found singly;
- 4, it occurs in only that portion of the alimentary tract exposed to the action of the gastric juice;
- 5, in most cases the ulcer is located in a relatively circumscribed area of the stomach—posterior surface, lesser curvature, and the pylorus and the duodenum; the large area of the stomach known as the fundus, the anterior surface, the greater curvature, and the cardia are *in toto* affected in only one fifth of the cases (Riegel);
- 6, a characteristic tendency toward chronicity and recurrence.

The great variety, advanced by various authors,

of causes of gastric ulcer may be reduced to the following: 1. Mechanical and physical injury. 2. Chemical injury. 3. Blood dyscrasias. 4. Disturbances of local circulation. Virchow's idea of embolism and thrombi in wall of stomach. 5. Injuries to nerves and nerve centres. 6. Local infection.

The names of some of the most noted internists and research men are attached to one or the other of these six theoretical causes for ulcer. The large array of investigators itself shows the elusiveness of the real cause underlying this condition.

Returning to the separate work of Botton, Turck, and Bassler. The success of other men with specific cytolytic sera prompted Botton to his attempt to discover a gastrotoxic serum. He prepared his serum by injecting the gastric cells of one animal into another animal, the blood serum of the injected animal becoming poisonous for the kind of gastric cells injected. To test out the possible modifications which selections of different species of animals might have on determining the specific gastrotoxins and to bring his findings close to those actually observed in man, he prepared three sera: 1, By the injection of gastric cells of the guinea pig into the rabbit; 2, by injection of gastric cells of a rabbit into a second rabbit; and, 3, by the injection of human gastric cells into a rabbit or domestic fowl. The human gastric cells were obtained from operative cases at the hospital, the mucous membrane being scraped off and injected forthwith into the peritoneal cavity of a rabbit or fowl. In other cases, the rabbit or guinea pig, whose gastric cells were to be injected, was starved for twenty-four hours to insure stomach being empty. The animal was then killed, the thoracic viscera removed, and cannula inserted into the thoracic aorta through which a stream of sterilized salt solution was run till the abdominal organs were washed quite free of blood. The stomach then was excised, opened, and thoroughly washed. The mucous membrane was scraped off on a sterilized plate, ground into an emulsion with salt solution, and injected into the peritoneal cavity of a rabbit. A fresh filtered extract of mucous membrane might have been used, according to the author, but it would take longer to prepare and would not possess any advantage over the injection of the cells themselves. In from seven to ten days the injection was repeated, and when four or five had been given the blood serum of the injected rabbit was found to be highly toxic. The blood was obtained by opening a vessel of the ear, and in this way from 30 to 40 c.c. were obtained each week. The animals were alternately bled and injected for about two months or more in some cases, after which time, toxicity of the serum decreased. The blood was whipped and centrifugated, and the serum thus obtained was always used fresh on the day obtained. Botton immunized more than one hundred and fifty rabbits in this way during the course of his work.

The results obtained by injecting rabbit with guinea pig stomach cells were as follows: No lesion was found in the stomach of the rabbit which had formed the gastrotoxin, and further, no lesion resulted on injection of the serum from the first rabbit into the second rabbit. But when the serum from

the immunized rabbit was injected into the peritoneal cavity of a guinea pig, within one half hour of such injection, symptoms of intoxication in the guinea pig were well marked and death occurred within twenty-four hours. Doses of from 1 to 5 c.c. were more or less uncertain in action. Ten c.c. was fatal within twenty-four hours for a 200 to 300 gramme guinea pig. Post mortem lesions in the guinea pig were limited to the stomach and always occurred within twenty-four hours after injection. If the animal survived the dose given, and if the dose had been sufficient, lesions were found in its stomach the next day, and no further lesions of symptoms occurred after that time. The intestines were found to be extremely congested. The lesions or patches of necrosis in the mucous membrane of the stomach were stained black by the altered blood pigment. They were usually multiple or very often nearly the whole mucous membrane was affected, although frequently there were only from two to three patches or even but one. The patches varied in size from a pin head to a large area occupying a third or more of the mucous membrane of the stomach. The patches were sharply marked off from the rest of the mucous membrane which appeared to be normal, and they were most commonly situated near or on one of the curvatures of the stomach. After from twenty-four to forty-eight hours the black tissue completely disappeared leaving perfectly clean and sharply punched out ulcers. Microscopical examination showed the floor of the ulcer to be the muscularis of the stomach wall—the muscular and peritoneal coats being unaffected. To observe the healing more carefully, Botton injected the serum directly into the stomach wall of one series of animals, and he noted that complete healing took place in from fourteen to twenty-eight days. Botton concludes from his experiments that autodigestion does not take place, but that the exogenous specific poison caused the necrosis of the round areas in the stomach mucosa. He further draws the inference that similarly an endogenous specific poison might be formed in an animal and that it would, according to its specific nature, attack the mucosa of the stomach—causing round ulcer.

Before Turck began experimenting on dogs by feeding them bouillon cultures of the colon bacillus to produce gastric ulcer, he had experimented extensively in attempts to produce gastric ulcer by: 1, Mechanical and chemical irritation; 2, the injection of toxins; 3, production of metabolic disturbances; and 4, inducing local infection.

In the first, he failed, even in feeding mustard oil to a dog for fourteen months. Injection of diphtheritic toxine into stomach wall and into mesenteric vessels and the intravenous and subcutaneous injection of stomach contents from ulcer patients to animals produced negative results. The intravenous injection of extracts and emulsions of gastric mucous membrane did produce a necrosis of mucous membrane near pylorus but not a typical ulcer. He confined animals in close quarters for a long period of time. Ninety-six guinea pigs and thirty-six rabbits were used. All the rabbits died, while six guinea pigs survived nine months' confinement. Two genuine peptic ulcers were found out of the six

surviving guinea pigs. Attempts to produce ulcer by local infection also failed.

Then Turck conceived of modifying his malhygienic tests by introducing cultures of *Bacillus coli communis* into the circulation and into the stomach. The toxine of the colon bacillus is intracellular and this suggested to him to use dead as well as living cultures.

Intravenous inoculation of dogs and rabbits for from one month to six months failed. However, artificial ulcers made by removing portions of the mucous membrane did not heal in four cases out of twenty.

Genuine induced round ulcers were produced in every experiment in which cultures of the colon bacillus were fed to dogs. Bouillon cultures of this organism were fed daily in increasing amounts from 50 c.c. to 2,000 c.c. for from two to four months in connection with ordinary meat diet, and in one case with meat extractives. Observations of blood changes made during these experiments demonstrated that the dogs' serum agglutinated the colon bacillus in high dilution; that the coagulating time of the blood was slower; that hæmolysis was present; that the bacteria were at no time found in the blood; that few, if any, symptoms of systemic disturbances appeared. In one case where death resulted from hæmorrhage from a pyloric ulcer, symptoms of internal hæmorrhage developed a few days before death.

Post mortem examination of this large series of dogs which were fed bouillon cultures revealed ulcers either in the stomach or duodenum, the number varying from a few in the duodenum to numerous typical round ulcers in the stomach.

Histological examinations were made in the various stages of the development of the ulcers and of the livers and kidneys. The chief points observed in such examination are as follows: 1, Catarrhal condition of the gastric mucosa. 2, Local necrosis of the cells. 3, Break down of the glandular structures. 4, Disappearance of the chief cells. 5, Marked hyperplasia of the parietal cells, which were large and prominent. 6, Vacuolization of the parietal and chief cells. 7, Complete degeneration of the cells. 8, No inflammatory reaction such as small round cell infiltration either surrounding or at the site of ulcer.

Turck, therefore, concludes that there is in the disease of gastric ulcer a dual condition: 1, There is produced some toxic status, which overcomes the natural resistance, resulting in cytotoxicity; and 2, some chemical substances are formed in the alimentary tract, which, when absorbed, neutralize the protective bodies in the blood and tissues—resulting in autotoxicity.

The most common factors or concomitants in the acute gastric ulcer, clinically, are a high acidity of the gastric juice and a low status of nutrition to the stomach walls. There are, however, a certain percentage of cases of ulcer which show a low acidity or even an anacidity.

Bassler made repeated examinations of the wash waters taken mornings from fasting human stomachs in patients who after an Ewald test meal showed total hydrochloric acid of over 100 and com-

pared these findings with those in thirteen other cases whose hydrochloric acid was normal or 60 or below. The stomachs with excess of hydrochloric acid showed by microscopical examination a greater degree of cellular exfoliation and a smaller amount of mucus than the other cases. Eighty-one specimens were examined, twenty-nine of which were from seven cases of hyperchlorhydria and eleven were from cases of gastritis acidia, which showed an exfoliation but not to the extent of the cases with excess of hydrochloric acid.

Columnar cells from the stomach were found in every case of hyperchlorhydria—sometimes in considerable numbers, attached side by side and at others in groups of two or more and often single. In five cases he found groups of cuboidal or irregularly rounded cells attached together, from gastric tubules. In one specimen, showing free hydrochloric acid, 56, combined 80, and total acidity 151, he saw plainly a single sided section through the infundibulum of a tubule, showing on one end columnar cells, in the middle, shorter and wider cells, and at the other end cells from the interior of the gland. Lining epithelium and glandular elements were not shed from the normal stomachs.

In stomachs secreting mucus in increased quantities, glandular cells with an occasional columnar and goblet cell were found incorporated in the mucus. Bassler agrees with Adolph Schmidt that in inflamed conditions of the stomach, the epithelium of the surface is preserved better in way of exfoliation than the gland cells.

If you will bear with me, I will give Bassler's *modus operandi* in his examinations. He used a saline solution in washing out the stomachs in place of plain water to prevent any hydrolytic action of water on the cellular elements and changing of their shape by swelling. His formula was as follows:

Sodium chloride,	gr. xxi;
Sodium sulphate,	} ãã gr. j;
Sodium carbonate,	
Sodium phosphate,	
Potassium chloride,	gr. i ¼;
Distilled water,	ad. ʒviij.

M.

The patient was made to run up and down stairs several times and the fluid was further agitated in the stomach just before removal by a series of deep, quick pressure movements over the stomach. Five minutes after drinking the fluid it was siphoned out with a long stomach tube, the patient being encouraged not to strain. The washings were left standing in a cylindrical test glass for from two to eight hours, 10 c.c. quantities were then removed from the middle and bottom zones. These quantities were centrifugated for two or more minutes and the sediment examined microscopically in the fresh state, unstained. All floating and top mucus was removed. If the recovered washing contained any incorporated mucus, the specimen was rendered alkaline to litmus by addition of normal lye solution; shaken vigorously in heavy glass bottles containing washed hind plot and examined as above.

Under the low power of the microscope, squamous cells were found in preponderance. These are found in practically all examinations of stomach contents and their presence does not mean anything since they may come from any of the structures

from the lips to the cardia. In contrast there stood out the *columnar* and *cuboidal* cells from the stomach. Another source of contamination is the possibility of finding cells of the ciliated columnar type which may have come to the stomach by swallowing from pharynx, posterior nares, and respiratory tract. Under the high power these cells can be distinguished by observing the cilia or a zone between the cell protoplasm proper and the free edge. The respiratory columnar cells further are more pyramidal in shape, even pointed, at one end and are generally found incorporated in mucus. They are rarely found and occur singly when they are seen.

Unless the cuboidal cells are in groups, there may be difficulty in determining whether they are really gastric, half digested squamous cells or other innocent elements such as freed mucous cells, leucocytes, etc. A common picture from cases of high acidity is the great number of free nuclei seen. These are from cells, probably mucous, the protoplasm of which had been digested down to the more resisting nuclear membrane. In chronic gastritis when much mucus is present, the mucous corpuscles share in preponderance the squamous cells with an occasional cuboidal or goblet cell, but rarely with a gastric columnar cell in addition.

As a result of his experiments, Bassler concludes that: 1, Mucus is secreted as a protection to the glandular elements in the wall of the stomach; 2, in cases of marked hyperchlorhydria, there is a minimum secretion of mucus or none at all, leaving the glandular elements unprotected against the large amount of free, and possibly the combined, hydrochloric acid; 3, ulcer shows its beginnings by desquamation and exfoliation of individual cuboidal and columnar cells and groups of cells.

Kaufman, of New York, substantiates the findings of Bassler, and emphasizes the part played by amyorrhoea or lack of mucus in the causation of gastric ulcer.

Until further scientific evidence is produced, it appears logical to draw pretty definite conclusions from the foregoing delineation.

In the causation of the typical round ulcer of the stomach, there are: 1, Neutralization of the natural protective bodies current in the blood stream and tissues. 2, The elaboration of either an endogenous or exogenous cytolytic poison which is specifically toxic for gastric mucous membrane. And, 3, as a result of these factors, a necrosis and desquamation of actual glandular tissue of the stomach takes place which is accompanied by a lack of gastric mucus and a large increase in the hydrochloric acid.

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OPERATION FOR BRAIN TUMOR, WITH THE OCCURRENCE OF HITHERTO UNRECOGNIZED CIRCULATORY PHENOMENA.

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This case is reported because of some features of special interest in its history as well as on account of a hitherto unrecognized vasomotor state observed during the operation and some suggestions as to surgical treatment which the case affords.

CASE.—G. S., age fifty-seven at the time of the operation for brain tumor, first consulted one of us on April 15, 1900. He then stated that his health had mostly been good, that he had never had venereal disease, that he had been married twenty-five years, and that his wife and five children were in good health, though he had lost one daughter from tuberculosis.

Three years prior to this time he had had a Jacksonian attack affecting the right leg. He had a second attack a week later, and a third still a week later which culminated in general convulsions with loss of consciousness in which he bit his tongue. Then he began having general convulsions which would begin as a Jacksonian attack in the right leg. Sometimes in the beginning of these attacks he would have severe pain in the right leg and body; so severe that he would cry out.

Nine months prior to this visit these general convulsions ceased to appear, but he continued to have Jacksonian attacks, sometimes very frequently. He spoke of a boring pain in the head, felt for the first time, he thought, just before the first Jacksonian attack, and usually felt before the attacks which had occurred since. Occasionally he would have pain at other times, rarely, all day long. This pain he located just over or behind the leg centre. Since the convulsions ceased this pain came on less frequently and was less severe. He occasionally had slight vertiginous attacks. There had been no vomiting.

Some months before this visit he noticed that the right leg dragged in walking, but this had improved. He had observed for the same length of time that his writing was not as good as usual; that it was also more difficult for him to write, and he thought his mind less alert.

At the time of the first examination, April 15, 1900, there was no pain or tenderness on percussing the skull, and the neurological examination was negative, excepting that the border of the left optic disk appeared to be slightly hazy. It will thus appear that there had been a manifestation and again a retrocession of symptoms.

The patient lived in a neighboring city and came under observation perhaps one half dozen times in the next nine months. During that time he had one severe convulsion, beginning as a Jacksonian attack, and some eight Jacksonian attacks. He had suffered very little with headache and at the end of this period seemed to be quite well.

He came again nearly eight years later, on September 28, 1908. He stated that he had had no general convulsions since, but that he had had Jacksonian attacks in the right leg, possibly once a month, after some of which his leg would be weak for an hour thereafter. For a year he had observed some weakness of the right arm and leg which had gradually increased, but throughout this period he had done his full quota of work, he was a salesman, going about from one business house to another.

There was no tenderness of the skull, no complaint of headache, and when asked about the old pain in the head he said, "it don't amount to anything."

The gait had something of the hemiplegic type, and there was a slight weakness of the muscles of the right leg. Strength of grasp, as indicated by the dynamometer was 52 right, 70 left. Otherwise the muscles of the right arm seemed to be strong. There was some impairment of the sense of touch and of pain, as well as of the spacing and muscular sense in the right foot. In the hand the sense of touch and pain, and stereognosis were normal; spacing sense and localization were impaired, and muscular sense was lost. The plantar reflex was minimal, but of flexor type. The tendon reflexes, pupils, vision, and hearing were normal. The face was normal as to sensation and motion.

We examined the patient again on April 9, 1909. He had had a fall in the early part of February, fell down a stairway, he said, and was picked up for dead. He knew nothing of the fall excepting what he was told. Probably it was caused by a "fit." His hemiplegia was much worse thereafter.

The examination on this date revealed the following: In the right leg the sense of pain was fair; sense of touch in the foot, especially the sole, much impaired and localization was bad. Muscular sense was impaired. Astereognosis. Paresis of all the muscles of the leg. Plantar reflex nil, or quick extension of the big toe. Very little, if any, change in the tendon reflexes of the affected side.

Right arm, dynamometer indicates 52 right, 70 left. Other muscles of the right arm also paretic. Pain sense fair, sense of touch impaired, and impaired spacing sense, sense of localization, and muscular sense. A stereognosis. Sensation and motion of face normal, vision and hearing normal. Double optic neuritis.

No examination of the head was made at the time of his visit in September, 1908. The examination on April 9, 1909, showed quite a prominence of the skull over the larger part of the left parietal lobe. As this irregularity of the skull was not found at the examination nine years before it suggested a tumor of the bone.

While he was in the office he had a Jacksonian attack. For a while his right foot felt as though "asleep," then for a minute or two or longer there was to be seen a slow flexion and extension of the foot, and also, for a part of that time, movements of pronation in the lower leg. Immediately thereafter his gait was decidedly worse than before, and it was perhaps one half hour before his former strength returned.

Operation was performed on May 5th. Craniotomy was done in the left parietal region, beginning over the upper third of the precentral convolution and working backward until a circular opening about two inches in diameter was obtained. The bone at the site of the before mentioned prominence in the parietal region was increased in thickness, but diminished in density, evidently due to a rarefying osteitis, the result of pressure by the tumor.

There was no pulsation when the bone was removed, and a tumor evidently springing from the dura mater was found. During the progress of the operation and especially while manipulating the tumor and the brain, in order to make out the border of the tumor, there was a good deal of shock. The anesthetist who was feeling the right radial pulse noted that the pulsation on that side could not be felt. A nurse who felt the left radial said at the time that on the left side the pulsation in the radial artery could be readily felt. At the time the difference was assumed to be due to an anomalous distribution of the arteries. On account of the shock and because it was evident that the tumor was of large size the removal of the tumor was postponed for a secondary operation.

The patient readily recovered from the primary operation and the next day the pulses in the two radials seemed equal. It then occurred to us that we might here be dealing with some contralateral vasomotor influence and the observation was borne in mind for the next operation.

The second operation was done three days later, on May 8th. The opening in the skull was increased about a half inch in diameter and the borders of the tumor definitely freed. The tumor sprang from the dura and was not adherent to the brain.

It was readily removed and found to weigh 165 grammes. During the manipulation of the brain attending the removal of the tumor the same contralateral influence on the pressure in the radial artery was observed. That is, the pressure dropped in both arteries, but while the pulse practically disappeared on the right side, it could readily be felt on the left.

There was again considerable shock during the second operation. A very large cavity resulted in the brain. The brain plainly pulsated and expanded and the cavity was perceptibly lessened before closing the wound. The respiration ceased for about a minute after the removal of the growth, but returned after artificial respiration was maintained for half a minute. The scalp was closed except for drainage, and the patient returned to bed.

He seemingly recovered from the shock of the operation readily and on the day following was in good condition. The pulsation in the two radials had again become equal.

The patient apparently did well for seventy-two hours

after the operation. The temperature never rose above 99° F., and the pulse 66. On the morning of the fifth day following the operation he became slightly delirious, had a chill, the pulse became faint and small, the temperature went to 101° F. In spite of vigorous stimulation the heart action grew steadily worse and death occurred on May 12th at 1 p. m. The wound was opened and was found to be perfectly clean. The cavity was filled up with brain. An autopsy was not permitted.

The tumor proved to be an endothelioma springing from the dura. It weighed 165 grammes and measured 165 cubic centimetres.

The appearance of the symptoms of brain tumor at an early period of the disease and the disappearance thereof for many years while the tumor had evidently been growing, as well as the slight subjective manifestations with the great size of the tumor are noteworthy. So also is what we believe to be a unique observation, the symptom on the part of the pulse during the operation.

Another consideration presents itself that may prove of value in the treatment of cases of large cortical tumors.

In the three days which elapsed between the two operations there was considerable protrusion of the tumor through the opening in the skull even though the opening proved to be too small to permit the delivery of the tumor at the second operation. Is it not possible that if we had waited a month instead of three days, this large tumor might have been gradually delivered by the pressure from behind? The brain would have been allowed gradually to expand, so that the tumor might have become a mass directly beneath the scalp, that might easily have been removed without any considerable shock. Thus we might have saved our patient.

This hypothesis appears to be of sufficient importance to test should the opportunity offer.

DETERMINATION OF THE HEPATIC AREA BY X RAYS AND BY AUSCULTATORY PER- CUSSION AND ALLIED METHODS. ECHINOCOCCUS DISEASE.

*Clinical Demonstration at the Hospital St. Antoine, Paris,
1908; in the Service of Professor A. Bécélère.*

By A. L. BENEDICT, M. D.,
Buffalo.

Several of you have witnessed the examination of this patient, a middle aged laborer, by Professor Bécélère. You will recall that the shadow of the liver on the screen showed only a slight enlargement upward but that the lower border was about six centimetres below the ribs and that it was somewhat irregular, corresponding to bosselations easily palpable.

The method which I commonly use for locating

The patient is placed in the supine position on an adjustable table, the head being raised about a space. The patient is then placed in the supine position, the head being raised by means of a crank acting on a gearing attached to a cogged circular arc, the patient being raised about a space. The electric apparatus and vacuum bulb are in an adjoining room, communicating with the examining room by a doorway and an aperture for the transmission of the rays. The screen can be raised or lowered like a window and is large enough to show the entire trunk at once. To facilitate close inspection of details by limiting the field of vision, an opaque diaphragm with a square aperture is placed immediately behind the screen. The size of the aperture is regulated after the analogy of the iris diaphragm of the microscope, and it can be tilted in various ways, so as to get any desired area of the body in an angle with perfectly dark boundaries.

the large viscera is acoustic and depends upon the principle that vibrations of sound diminish suddenly in intensity in passing from one unit of transmission to another. This method, usually but not very accurately called auscultatory percussion, is susceptible of various modifications. In practice, a stethoscope is placed over that part of the organ to be examined, which comes most closely in contact with the body wall. Then by applying percussion or other means of producing sound vibrations in lines radiating from this centre toward the periphery of the organ, we note and mark with a dermatograph the points at which a sudden diminution of intensity is observed.

This stethoscope consists of two truncated cones of different sizes, corresponding to the cardiac and pulmonary bells of the Cammann instrument. Into the groove where these cones join is fitted a metal tube leading to ear pieces. I selected this stethoscope before leaving America because, on the whole, it seemed to fulfill best the various demands of portability and general diagnostic work. Ordinarily, I prefer using the small bell of the Cammann stethoscope, connected by a Y of caoutchouc to rather large, thick tubes of soft rubber.

As an alternate for finger percussion, I have used for many years, an electric buzzer and a tuning fork. This instrument was made for me in Paris a few days ago. It consists merely of a low A tuning fork with the stem incased in hard rubber. It has the advantage of vibrating longer than this smaller, middle C tuning fork which has been my vade mecum for ten years.

This instrument, the plessigraph of Peter was new to me. The hard rubber serves to conduct the impact of the percussing finger to the viscus, in a limited area which is of advantage both for immediate and auscultatory percussion. It also combines the convenience of a measure, being graduated in centimetres, and of a dermatograph.

In this case, as usually, the results of immediate and mediate percussion and of auscultation of the vibrations of the tuning fork agree in placing the upper border of the liver at a little above the fourth rib while the lower border is marked by a somewhat irregular line, six centimetres below the costal arch in the mammillary line, thus agreeing with the x ray examination. Undoubtedly, the dome of the liver reaches a higher level, but too far away from the chest wall for the vibrations to be conducted. I am inclined to think that most physicians, not in the habit of comparing palpation with auscultatory percussion or the x ray examination, locate the lower border of the liver too low for the simple reason that they fail to make allowance for the thickness of the intervening abdominal wall. If we pinch up the soft tissues between the thumb and fingers, we have a mass approximately twice the thickness of the abdominal wall, in any case, and if we subtract this distance from the apparent distance of the lower margin of the liver from the costal arch, as determined by palpation, it agrees very very closely with the other methods of orientation.

Dr. Bécélère: Dr. Benedict, it would give us pleasure to have you express your diagnosis of the nature of the enlargement of the liver.

Dr. Benedict: It is understood that, without having had the opportunity of studying the case, an

expression of opinion would be merely a statement of probabilities, what we call in America a snap diagnosis. I would like to ask if there is a history of malaria, syphilis, alcoholism, etc., and if the blood has shown any marked abnormality.

Dr. Béchère: The history as to malaria and syphilis is vague; like most men of the working class, the patient has used considerable alcohol, perhaps not more than is customary. There is some anæmia but no leucocythæmia.

Dr. Benedict: We can evidently eliminate leucocythæmic enlargement. The bosselations are larger than would correspond to a hobnailed liver. You will note that in examining for ascites I use the stethoscope low in the flank, making heavy percussion from the opposite side. Even if there was no zone of flatness, shifting with the position of the patient, as determined by ordinary percussion, this method, shifting the level of the stethoscope and of the percussing finger, will determine small quantities of fluid—just how small, I do not know, but probably a litre, perhaps a half litre, would be demonstrable. While in private practice, I do not usually find ascites in cases of moderately contracted livers, it is usually present in enlargement of considerable degree, when due to any of the forms loosely termed sclerosis or cirrhosis. In an alcoholic patient, with a liver of this size, I should certainly expect ascites, if the lesion were essentially sclerotic or of the Hanot type. Then, too, the contour of the lower border is different from what would be expected from such a cause. The enlargement of congestion can also be excluded.

On the whole, I should be inclined to consider the lesion cancerous, from the age of the patient, the irregular, bosselated enlargements, the lack of ascites which, of course, frequently develops later, and the general leanness, sallowness, and weakness. While these do not amount to the so called malignant cachexia, I do not regard this term as in any sense specific, and cachexia does not develop until rather late. It is not at all improbable, rather probable, that the liver was previously sclerotic, but I should not consider the latter diagnosis as essential or adequate. Next in probability to cancer, I should mention syphilis.

Dr. Béchère: What would you say as to the probability of echinococcus disease?

Dr. Benedict: That is a disease which is very rare in the United States, being confined almost entirely to recent immigrants. I have never had a case of my own and what few I have seen have been in the larger Atlantic cities of America and in Europe. There does not seem to be any hydatid thrill here. Obviously, I am not competent to diagnose for or against a condition with which I have had no experience of any importance until within the last two weeks, through the courtesy of the staffs of your hospitals.

Dr. Béchère: The hydatid thrill is a sign which we do not usually find in practice. It is mainly a thing of the writers of books. Nevertheless, I am inclined to regard the case as probably of hydatid cyst, though I agree with you that, if it is not such, it is probably cancer, with syphilis as a further diagnostic choice.²

I wish to express my thanks to Professor Béchère for the courtesy of the invitation to present this demonstration to his assistants, internes, and visiting physicians; also for his promptings in the use of an unfamiliar language; also my appreciation of the forbearance of the audience even to smile at my numerous blunders.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XC.—How do you treat typhoid fever? (Closed September 15, 1909.)

XCI.—What is your experience in the therapeutic use of thyroid feeding? (Answers due not later than October 15, 1909.)

XCII.—What are your views on the open air treatment of pneumonia? (Answers due not later than November 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question LXXXIX has been awarded to Dr. N. E. Sartorius, of Pocomoke City, Md., whose article appeared on page 600.

PRIZE QUESTION LXXXIX.

THE PREVENTION OF RENAL COLIC.

(Concluded from page 601.)

Dr. Theodore J. Edlich, of New York, remarks:

The prevention of a recurrence of renal colic implies a treatment which prevents or lessens the chances of stone formation. If a stone still exists in the pelvis of a kidney or ureter no medication acting as a solvent is of avail though a proper treatment may prevent further deposition with enlargement of it; furthermore, nothing will prevent a remaining stone, if small enough, passing from the pelvis into the ureter and thereby causing renal colic, but an avoidance of severe jolting, of great muscular strain, or of excessive imbibition of fluids in general and diuretic malt and alcoholic beverages in particular.

An accurate and scientific treatment is dependent upon the identification of the stone, the uranalysis, and the past and present history of the patient. While details in the treatment vary and must be altered to allow for other complicating ailments, a few general dietetic and hygienic rules may be laid down, for in most cases stone formation is due to faulty metabolism and elimination, and those things that affect these favorably will be considered as preventive of recurrence of renal colic.

Most patients thus affected take too little exercise; consequently they should be advised, if strong

²The patient was subsequently operated upon and it proved to be a case of echinococcus disease.

and vigorous, to take more or take exercise more vigorously. Horseback riding, walking, running, swimming, fencing, rowing, tennis, golf, gymnastics, etc., are all good; whichever best fits the vocation and leisure of the patient, and whichever best suits his tastes and inclinations, will be of greatest benefit and is that form of exercise which he will be most apt to continue in. By exercising, a more thorough and complete oxidation of bodily waste takes place, a better flow of bile is established and the liver kept active, the general muscular tone improved, and the skin kept active in its function of excretion. Bathing frequently, especially after exercise, helps toward this end.

The same class of patients, as a rule, eat too heartily, especially of proteid food; this should be cut down; the diet is to be a modified vegetarian one; although not generally laid stress upon, the cooking and preparation of food is a very important item; a poorly cooked and served meal and a monotonous diet will produce uric acid and other waste products, when in other respects the diet may be a suitable one for the condition in hand; a decent variety is to be desired and will obviate indigestion and fermentation. Spicy and rich foods, condiments, and rich gravies are to be eschewed generally. Alcohol in any form, barring exceptional cases, is undesirable; tea and coffee of good quality and properly made and moderately taken are not injurious unless otherwise contraindicated; plain, aerated, distilled, and mineral waters are usually indicated, for with these patients too little fluid is generally taken; they act by flushing out the system, thereby removing waste, and with alkaline mineral waters, acid states of blood and urine are corrected or altered. They should be taken between meals not earlier than one hour before or two hours after, for fear of setting up gastrointestinal disturbances; likewise a tumblerful on rising and on going to bed is to be taken. Disorders of the gastrointestinal tract and nervous system are to receive strict attention; whether cause or effect, nervous troubles, such as neurasthenia, migraine, hysteria, melancholia, etc., are frequently present in cases of disordered metabolism and elimination with renal colic.

The bowels and other excretory organs are to be kept in the best possible and most active condition.

Thin, anæmic individuals are to have rest, fresh air, good rich food, iron, and tonic treatment.

After an attack of colic hexamethylenamine (urotropin) or diethylenediamine (piperazine) is to be given to heal the injured structures and thus prevent a possible chronic catarrhal condition which may ultimately promote a further stone formation.

THE TREATMENT IN SPECIFIC CASES.

Calcium oxalate and oxaluria. The stone is usually small in size, from one eighth to one quarter of an inch in diameter, very hard, dark or reddish brown in color, externally due to blood pigment, while the inner portion is white or gray, the shape is characteristic, viz., lobulated or "mulberry mass." While a few crystals of calcium oxalate may not be an abnormal condition of the urine, being easily due to such articles of diet as tomatoes, rhubarb, apples, peas, onions, turnips, etc., it is excreted in large amounts in gastric and intestinal indigestion and is especially dependent upon the indigestion and bacterial fermentation of saccharine and amylaceous

food substances. Individuals with functional nervous disorders show the same urinary condition, also those with the lithæmic and gouty diatheses. The diet in those patients is to be a modified vegetarianism with milk and cereals; vegetables such as string beans, carrots, celery, spinach, lettuce, radishes, cucumbers, potatoes, sweet potatoes, beets, parsnips, egg plant, etc.; boiled cereals, such as oatmeal, hominy, etc.; stale bread, toast, crackers, etc.; sweet milk, buttermilk, and the fermented milks; tea, coffee, and cocoa. Meats such as lamb, beef, mutton, or pork once a day; in lieu of these, fish, shellfish, eggs, poultry, ham, bacon, liver, etc. may be taken. The main point is to take proteid food sparingly. If there is much intestinal indigestion, cream, butter, cheese, fats, starches, and sugars had best be eliminated or taken sparingly; in cases of intestinal indigestion tobacco had best be not employed.

Uric acid and urates. Stones of uric acid are small, one third of an inch in diameter as a rule, yellow or brownish in color, hard in consistency, and often lamellated and rough. "Gravel" is shown in the urine as the well known "brick dust" deposit and is made up of the different urates of potassium, sodium, calcium. While the acidity of the urine is due to an acid sodium phosphate such urine should be rendered neutral or nearly so, for in an acid urine crystals of uric acid and of urates are prone to be precipitated. For this purpose alkalis are useful, such as the acetate, citrate, bicarbonate, and bitartrate of potassium and sodium. Alkaline mineral waters, such as Vichy, etc., are useful to the same end. Lithia water and lithium salts, citrate and tartrate, are much given, but it is doubtful whether they are of much value as uric acid solvents; still, a five grain effervescent lithia tablet is recommended, for in this way often a patient is induced to take more water than he would ordinarily without. Hexamethylenamine (urotropin) in 7 grain doses, well diluted, is a decided uric acid solvent, though it may not be desirable for long continued use. The diet is a moderate vegetarian one with fruit, milk, bread, and cereals; in cases with severe exacerbations of lithæmic symptoms it may become necessary to reduce it to a milk, fermented milk, or strictly vegetarian diet. Fruits are especially good here, as the contained organic acids are changed to alkaline carbonates in the system, thus neutralizing the uric acid. Calomel in small, broken doses, or a 10 grain dose of blue mass followed by a saline should be given every three or four weeks to stimulate the hepatic functions. Often a course at Carlsbad or Saratoga is beneficial in these cases.

Calcium phosphate; triple phosphate and phosphaturia. Stones of phosphatic composition are white in color and friable; the crystals are easily recognized microscopically. They occur only in an alkaline urine; such a urine is to be acidified by having the patient take hexamethylenamine (urotropin), 7 grains in a tumbler of water, three times daily between meals, or phenyl salicylate or sodium benzoate in 5 grain doses at the same intervals. Meats are to be eaten two or three times daily, and vegetables cut down if in excess.

Calcium carbonate. These stones are very rare, of a chalky white color. The treatment is the avoidance of hard potable waters, eating moderately of vegetables; a fair amount of meat and fruits.

Phenyl salicylate and hexamethylenamine (urotropin) are given to keep the urine in an acid state.

Cystine. Stones of this composition are rare; they are white or light yellow in color, moderately hard, small in size, microscopical appearance of sheath-like crystals is characteristic. They result from severe organic disease of the liver and the primary disease is to receive treatment in such instances.

Xanthin. Stones are rare, cinnamon colored, moderately hard, take a waxy polish on rubbing. Treatment is the same as for lithæmia.

Dr. W. Price Davis, Jr., of Atlantic City, N. J., writes:

The group of symptoms termed renal colic is caused by a sudden blocking of the ureter, either by a calculus, a fragment of tumor, a blood clot, a mass of mucus, or torsion of the renal pedicle.

The largest percentage of cases are caused by calculi, and of these the uric acid calculi form a large majority. They are reddish brown, smooth, round or lobulated (lamellated), hard, and usually less than one half of an inch in diameter. Urates may form calculi by themselves or be a nucleus for the deposit of urates and phosphates in strata. The calcium oxalate calculi are hard and rough, resembling a mulberry, and average about one third of an inch in diameter. The phosphatic calculi are formed of calcium phosphate and ammoniomagnesian phosphate; they are grayish white, rough, and easily crumbled. They may occur in pure form or surround a nucleus of harder crystals of uric acid. If the tendency to the formation of urinary calculi is confirmed in a patient, or if the symptoms of nephrolithiasis have already appeared, we should give a number of dietetic directions. Should the concretions be due to uric acid we should endeavor to check the formation of uric acid in general and promote the solution of that which is already formed as much as possible.

Temperance in all foods, including meats and especially articles of diet such as liver, sweetbreads, and calf's kidney, which contain an abundance of nuclein, should be forbidden. The patient should be advised to take moderate, regular exercise in a gymnasium or what is much better, outdoor exercise as golf, swimming, and rowing. The assimilation of food should be assisted by warm baths or mud baths. An abundance of water should be injected to dilute the urine and thus increase its solvent powers.

Pfeiffer and others have been able to demonstrate by direct experiments that urine secreted after the use of alkaline mineral waters has an increased power to dissolve uric acid. This may be done by having the patient use sodium phosphate, one quarter of a drachm, or sodium carbonate, one half drachm, or lithium carbonate, one quarter drachm; also mixtures of these remedies are often used with good results. Thus, Cantani recommends sodium bicarbonate, 2 drachms; effervescent lithium carbonate, 1 drachm; and potassium citrate, 15 grains.

Of the natural mineral waters, the springs of Fachigen, Vichy, and Vals are especially efficient, though good results, however, are obtained in Carlsbad, Salzbrunn, Neuenahr, and Wildungen. The natural lithia waters contain such minute amounts of lithium salts that, in general, the artificial waters

are to be preferred. The attempts to promote the solution of uric acid by administering chemical substances has so far not given very brilliant results. Diethylenediamine (piperazine) and ethylene-phenylamidine (lysidin) have been used and exploited by some, while others have discontinued their use.

Should the calculi be composed of oxalates the amount of vegetables ingested should be limited; the general hygiene should be the same, including the alkaline waters, which are always advisable.

With phosphatic calculi, inasmuch as these cannot be deposited unless the urine is alkaline, we should recommend the use of acids, especially lactic acid in doses of from 8 to 15 grains and salicylic acid; also, phosphoric and hydrochloric acid. In most cases there is some condition of the urinary passages which has occasioned the formation of the calculi, and if this can be discovered its treatment is of the utmost importance. Should the blocking of the ureters be due to the fragment of a tumor, a blood clot, mucus, or torsion of the renal pedicle, the treatment would depend upon the severity of the symptoms, the condition of the patient, and the cause. In mild cases we should advise absolute rest, symptomatic treatment; while the severe cases would require surgical interference.

Dr. T. J. O'Donnell, of Greenwich, Conn., observes:

In preventing the attacks of renal colic we must, as in other disorders, search for the underlying cause.

The conditions which favor stone formation are aggravated by the formation of uric acid, calcium oxalate, and the phosphates. When the diagnosis of any one of these conditions has been made, it becomes the duty of the physician to provide against the possibility of calculus development. Thus, frequent and careful examinations of the urine are necessary, especially after an attack of colic, since by these alone precise therapeutic indications can be found.

When the urine and calculus have given us definite knowledge as to the chemical cause for the development of stone, the patient should be treated accordingly (uric acid, oxaluria, phosphaturia). When there is a blood calculus, the condition producing hæmaturia must be treated. The treatment for autointoxication will stop the formation of cystine calculi. In a general way, however, the solvent treatment has been employed for many years, including diet, exercise, food, medicines, and a fluid solvent that will prevent precipitation of crystals around a nucleus, which at first is probably a bit of mucus, pus cells, or a blood clot. Patients must abstain from rich foods and wines, but should not be underfed. Extreme diet is bad.

There are a number of mineral waters used. In this country we have the Saratoga, Poland, and Bedford with many other waters, especially those containing lithia. Waters with excess of sodium salts should be avoided. The urine may be kept alkaline by taking at short intervals diethylenediamine (piperazine), and its compounds have been used, but it is doubtful whether they have any beneficial action in the body. In this class of cases we should inquire into any pathological condition of the lower genital tract, such as stricture, enlarged prostate, etc., as they tend to invite accumulation of secretions with

pus formation in the pelvis of the kidney. In floating kidney renal colic may be prevented by its proper treatment.

Hard drinking water is supposed to be a factor. This should be guarded against as well as an insufficient amount of water in hot weather when one perspires more freely. Hard manual labor should be avoided by those patients with a history of attacks.

Surgical interference should be resorted to if medical treatment has failed.

Dr. Henry Borton, of Camden, N. J., states:

The prophylactic treatment of renal calculi can be divided into hygienic, dietetic, drinking of mineral waters, and medication.

The hygienic treatment consists of taking plenty of exercise in the open air; the patient should keep regular hours, eat moderately, and abstain from alcoholic drinks. He should keep the skin active by either taking a cold bath in the morning if he is robust, or if not a warm bath at night might be substituted. The patient should avoid sudden changes in atmosphere, and not allow his body to cool off too rapidly after violent exercise.

Under the dietetic treatment we tell him that his meals should be ready for him at stated times, and that he should take plenty of time to eat them. Hot bread should be avoided, and he should use as little salt as possible. His diet should be a guarded one consisting largely of milk and vegetables, using only a small amount of meat and nitrogenous foods. If, however, you find upon making a urinary examination that there is a tendency toward the deposition of phosphates with formation of calculi, the diet should be changed to one of meats and nitrogenous substances with acidulated drinks.

As to the mineral waters, not so much depends on the kind of water taken as on the amount. Ordinary boiled water will answer just as well as the natural waters here and in Europe. But what the patient wants to do is to keep his kidneys flushed by drinking water, and plenty of it.

We now come to the last division, that of medication. No drugs or remedies have yet been found that will dissolve fully formed calculi, but we can by many ways keep the crystals in the urine and blood in solution, thereby preventing or lessening to a great extent the formation of concretions. These are potassium and lithium citrate. The drug that seems to meet with greatest favor is diethylenediamine given in five grain doses or in aqueous solution.

Therapeutical Notes.

Sodium Cacodylate and Mercury Solution.—

From the *Formulario dos Medicamentos* of the Lisbon Tuberculosis Institute we take the following formula for a solution of sodium cacodylate and mercuric iodide, intended for hypodermic use in the treatment of tuberculosis:

Sodium iodide,	5ss.
Sodium iodide,	gr. x.
Distilled water, q. s., ad,	3v.

Each dose of fifteen minims contains approxi-

mately three fifths of a grain of sodium cacodylate, and one thirteenth grain of mercuric iodide.

The Treatment of Simple Jaundice.—Professor Grasset, of Montpellier, prescribes the following (*Journal de médecine de Paris*, September 14, 1909):

1. Give every five minutes six grains of pulverized ipecac, followed by lukewarm water to promote vomiting; before breakfast next morning a dose of purgative water.

2. Light diet: Milk; pea soup; green vegetables, well cooked; cooked fruits; later, a little well cooked meat. Drink with meals vichy water fortified with two drachms of sodium sulphate to the pint.

3. With each meal take the following powder:

B	Naphthol,	
	Benzonaphthol,	
	Phenyl salicylate,	āā gr. iv.
M.	Mitte pulv. No. XL.	

At night on retiring take this pill:

B	Extract of belladonna,	
	Pulverized belladonna,	
	Podophyllin, or eschynommin,	āā gr. ii.
M.	Fiant pilule XX.	

4. Take a cold bath every morning.

5. Finally, prescribe a bottle of purgative water (Rubinat) to be taken before breakfast; and, the day after, a warm bath to which has been added six or seven ounces of sodium bicarbonate and one pound of starch. The patient should stay in the bath for a period of twenty minutes.

The Local Treatment of Acne.—Gaucher is credited by the *Journal de médecine de Paris* for August 28, 1909, with the following contribution to the subject. It is remarked that there are two drugs which give the best results in the local treatment of acne—namely, resorcin and sulphur. Resorcin sometimes proves irritating, especially when exhibited in the form of ointment. It is best therefore to employ it in aqueous solution, as follows:

B	Resorcin,	gr. xv.
	Distilled water,	3iil.

M.

Sulphur is frequently used in the form of ointment, but it is an objectionable form, as the greasy mass only augments the abnormal condition of the skin. A more agreeable method is to prescribe it in the following lotion:

B	Precipitated sulphur, finely sieved,	5iss.
	Purified talcum, finely sieved,	3ss.
	Refined glycerin,	3iss.
	Rose water,	3iv.
	Tincture of soap bark,	3iiss.

M.

Sublimed sulphur should never be used in lotions intended for the treatment of acne, as it is very irritating to the skin. In preparing the lotion the apothecary should be instructed to incorporate the dry ingredients intimately in a mortar, adding the glycerin, and then the rose water, little by little. The tincture of soap bark, which partially emulsifies the mixture, should be added lastly, a few drops at a time, the mixture being well stirred meanwhile.

The lotion is applied at night, after the face has been bathed in water as hot as can be borne. Wash off in the morning with hot water.

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THE TREATMENT OF HOOKWORM DISEASE.

Dr. C. Wardell Stiles, chief of the Division of Zoology of the Hygienic Laboratory of the United States Public Health and Marine Hospital Service, whose observation of uncinariasis is well known to have been extensive, has prepared a brief account of the treatment that has been found most useful in combating that very serious affection. Many of the victims, he remarks, are unable to afford the loss of wages that would be entailed by treating them on week days; therefore Saturday evening and Sunday morning may properly be devoted to the necessary medication.

A dose of Epsom salts is to be given on the Saturday evening, and the next morning the proper amount of thymol is to be given, ordinarily in two doses of half the amount each, but in particularly severe cases, or if a preceding Sunday's treatment has produced unpleasant burning or other effects, in three doses of one third of the amount each. If the amount is divided into two doses, one is to be given at 6 a. m. and the other at 8 a. m.; if it is divided into three doses, one is to be given at 6 a. m., one at 7 a. m., and one at 8 a. m. In two hours after the last dose of thymol, another dose of Epsom

salts should be given, and no food is allowed until after the salts have been taken. During the whole of the day nothing containing alcohol or fatty matter (even milk or butter) is to be allowed, for these articles favor a poisonous action on the part of the thymol.

The whole quantity of thymol for the day, to be divided into two or three doses, is regulated by the patient's age as shown in the following table, which is practically the same as has been used by the Puerto Rican Commission:—

Age.	Amount.
Under five years,	7½ grains
From five to nine years,	15 "
From ten to fourteen years,	30 "
From fifteen to nineteen years,	45 "
From twenty to fifty-nine years,	60 "
Over sixty years,	30 to 40 "

In cases of youthful patients the apparent rather than the actual age should govern the amount to be given, and the quantity should be reduced correspondingly or even more if the anæmia is so severe that pronounced cardiac symptoms have been produced. The treatment is to be repeated weekly until the alvine evacuations are free from the worms. Copies of Dr. Stiles's article may be obtained on application to the surgeon general of the Public Health and Marine Hospital Service, Washington, D. C.

SALINE SOLUTIONS IN ASIATIC CHOLERA.

When Asiatic cholera last threatened the United States, and a number of patients were removed from incoming steamers and treated by the quarantine physicians, the administration of normal salt solution, both subcutaneously and by the bowel, was found to be of decided benefit. At about that time the terms hypodermoclysis and enteroclysis came into general use. The administration of salt solution seemed a rational procedure for the purpose of supplying to the tissues the fluid that was drained from them by the excessive rice water discharges. Some men have objected to this method of treatment, and denied that the loss of fluids has anything to do with the fatal issue.

Rogers (*Proceedings of the Royal Society*, July 8th; *Philippine Journal of Science*, April), however, is an advocate of these measures and of the more satisfactory method of intravenous injection of salt solution. He contributes some studies to show the rationale of these methods. He found that the number of erythrocytes in cholera patients rose from 5,000,000 to over 8,000,000. He found leucocytosis with diminution of the lymphocytes. He also found that the blood pressure of cholera patients was re-

duced from a normal pressure of 100 mm., for a native Indian, to 50 mm. In actual practice he found that hypertonic solutions gave better results than isotonic solutions; so that he now advocates the intravenous injection of a 1.35 per cent. solution, and employs three or four pints of this solution at a single injection.

The beneficial action of these solutions is explained by the assumption that the great loss of fluid by the bowel produces a concentration of the blood. This concentrated blood, if diluted, presents a greater osmotic resistance to further draining of fluid through the intestinal mucosa. If the fluid portion of the blood is replaced by an isotonic salt solution, further drainage of fluid is made possible; but if, on the other hand, the fluid injected into the bloodvessels is hypertonic, the circulation will be restored, and the osmotic tendency will be from the bowel into the circulation instead of from the bloodvessels into the intestine. Statistics showing the beneficial influence of this treatment were published in the *Indian Medical Gazette* for March, 1908.

Rogers has ascertained that the loss of serum in cases of cholera varies from thirty-five to sixty-four per cent. An approximate idea of this loss of serum may be obtained by estimating the specific gravity of the blood. In the paper published in the *Philippine Journal of Science* Rogers describes a cannula which he has devised by which he is able to inject the hypertonic salt solution into the peritoneal cavity.

TRAUMATIC BALDNESS.

Injuries of the head seem occasionally to play a part in the production of alopecia areata, that disease of multifactorial aetiology, but not with sufficient frequency to have been taken into account by systematic writers on dermatology. At least, that is the impression derived from an article by two French military medical officers, Dr. A. Vandebossche and Dr. Michel Ferron, published in the July number of the *Archives provinciales de chirurgie*. They cite a few cases in point observed by others, and furnish five instances that have come under their own observation. They describe their cases as having the peculiarity that the loss of hair was confined to an area diametrically opposite to the seat of traumatism (*celle de siège toujours au point diamétralement opposé au siège du traumatisme*). In one of their cases, however (Case V), the alopecia occurred simply on the opposite side of the head, and not in a diametrically opposite site.

With fracture by *contre-coup* we are familiar—in literature at least—but such a trophic disturbance by counterstroke as may lead to localized baldness

must, we suppose, be classed among the curiosities of medicine. Déhu, as our authors remind us, says that traumatic baldness almost always appears in the vicinity of the point of injury or in a part sharing in the innervation of the latter, and we are therefore led to think that neuritis, contusion, and even reflex shock may produce loss of hair in the same way as solution of continuity of a nerve. Besides affecting the opposite side of the head, the peculiarities of their own cases were (1) that the baldness came on early, within a month, within two months, within four months, within six months, and within less than seven months, and (2) that it disappeared promptly, within two months in two cases, within four months in one case, and within five months in another, the fifth case being still under observation.

MAJOR WOODRUFF ON RACE EXPANSION.

It is still but a short time since a highly respected member of our profession, Major Charles E. Woodruff, of the Army Medical Corps, excited widespread attention by a book entitled *The Effects of Tropical Light on White Men*, in which he upheld the theory that the light of the tropics was seriously detrimental to men of the blond races. He has now furnished us with another work that will probably meet with equal consideration, *Expansion of Races* (New York: Reberman Company). A large portion of the book, and in our opinion the most important part, is devoted to an exposition of the processes by which the world has avoided the dire results of overpopulation portrayed by Malthus more than a hundred years ago, but perhaps never seriously feared by men of broad reflection. It is not alone Major Woodruff's argument, which really makes its own way with the reader, but his wealth of illustrative information which is the charm of the book, a book that every well educated person will delight in. It is to be wished that medical men may oftener write for the general public so convincingly as Major Woodruff does.

THE PREVENTION OF YELLOW FEVER IN RIO DE JANEIRO.

Our consul general in Rio de Janeiro, Mr. George E. Anderson, has communicated to the government a translation of a paper read at the recent Latin-American Medical and Sanitary Congress by Dr. Oswaldo Cruz, the head of the Public Health Service of Brazil, and the Bureau of Manufacturers of the United States Department of Commerce and

Labor has kindly furnished us with a copy of the document. Within recent years we have seen many evidences of the excellence of the work in public sanitation done in Brazil, and Dr. Cruz's narrative is worthy of high rank among them.

Dr. Cruz gives the annual yellow fever mortality of Rio de Janeiro from 1872 to 1908 inclusive. In fourteen of these years the number of deaths from the disease was more than a thousand and much larger in several years, reaching the maximum of 4,852, the mortality for the year 1894. The campaign against the disease according to present methods was begun in April, 1903. During the following year there were only forty-eight fatal cases, but in 1905 there was a moderate recrudescence and 289 deaths were recorded. Since then there has been a steady decrease, the deaths numbering forty-two in 1906, thirty-nine in 1907, and four in 1908. During the portion of the year 1909 covered by Dr. Cruz's report, up to the 1st of August, there was not a single death from yellow fever. It is interesting to note that the small fish known as the *barrigudo* was found very useful in the destruction of mosquito larvae.

— PAIN. —

At the closing session of the Harvard Summer School of Theology this year the retiring president of Harvard University, Dr. Charles William Eliot, delivered an address which he entitled *The Religion of the Future*. With its characteristic straining to produce sensations, the newspaper press of the country has published accounts of this address under the title *The New Religion*. Dr. Eliot refers to pain in the following way:

A further change in religious thinking has already occurred on the subject of human pain. Pain was generally regarded either as a punishment for sin or as a means of moral training, or as an expiation, vicarious or direct. Twentieth century religion, gradually perfected in this respect during the last half of the nineteenth century, regards human pain as an evil to be relieved and prevented by the promptest means possible and by any sort of available means, physical, mental, or moral; and, thanks to the progress of biological and chemical science, there is comparatively little physical pain nowadays which cannot be prevented or relieved. The invention of anesthetics had brought into contempt the expiatory, or penal, view of human pain in this world.

Dr. Eliot makes the mistake, we think, in regard to the significance of pain which is commonly made by the layman. While the position is, in the main, in accord with the attitude taken by physicians in general, one important feature is left out. The medical man looks upon pain as a reaction of the nervous system to irritants of various kinds and of

varying degrees. As such a reaction pain is a danger signal; it points out the existence of something abnormal. From this point of view, pain is not always to be relieved until its cause is determined. Upon the discovery of the seat of the initial irritation, means may properly be adopted for its relief. We apply the term irritant to the causes of functional pain as well as to the causes of organic pain. Too much harm has been done in the past by the hasty employment of the hypodermic syringe. We hope that the theologian will assist the physician in the endeavor to abolish the demand for narcotics by the patient before the nature of a painful affection is discovered.

— THE TREATMENT OF DRUG VICTIMS. —

Those who are connected with our penal institutions know the frequency with which drug victims turn up. Once they are sentenced, good attention is nearly assured. But on the way there, through the first night in the police station, the appearance in court, the journey, short or long, nothing but an anticipation of hell is the experience of the sufferer. Certainly the sufferings are brought on by the fault of the victim, but it must be a hard hearted person who can look on while these tortured bodies fight for life against the bars of pitiless fate.

A special study of their needs ought to be made, and provision in our medical schools and the clinic, to the end of fitting some of us to attend to alcoholic cases and drug habit cases. As a rule these patients fall into the hands of the police. It is probable that officers of the law, in their large experience, become well fitted to care for such cases, but their scientific management is impossible unless facilities are present. Such cases demand sympathy. The causes of alcoholism are many, and a good proportion of them lie beyond the territory of true responsibility. It is a dangerous thing to assert that a man can or cannot refrain from doing certain things that are harmful to him. He realizes that they are hurtful, but it is often impossible for him to abstain.

— THERAPEUTICS IN TWENTY REMEDIES. —

Under this title the *Journal des praticiens* is publishing a series of articles three of which have appeared, namely, upon sodium salicylate, quinine, and mercury. We remember a little homœopathic manual which covers therapeutics in twelve remedies. And, in a lecture before the Philadelphia Pathological Society, Osler declared that the great remedies were twelve, "but," he added, "I decline to say which twelve."

Obituary.

BARNARD DOUGLAS EASTMAN, M. D.,
of Topeka, Kansas.

Dr. Eastman died on Saturday, September 11, aged seventy years. He was a graduate of the College of Physicians, of New York, of the class of 1862. He at once took up the study and practice of psychiatry, in which he soon achieved distinction. He served in several well known asylums for the insane, and at the time of his death had for many years been in charge of the Topeka State Hospital. He was a man of attractive personality.

GEORGE CUVIER HARLAN, M. D.,
of Philadelphia.

Dr. Harlan died in Philadelphia on Saturday, September 25th, as the result of a fracture of the vertebral column in the lower thoracic region, brought about by a fall from his horse on the preceding Wednesday. He was born in Philadelphia on January 28, 1835. He was graduated from the Medical Department of the University of Pennsylvania with the degree of doctor of medicine in the class of 1858.

At the beginning of the civil war, in 1861, Dr. Harlan was appointed assistant surgeon in the United States Navy, and was ordered to the gunboat *Union*. Upon his resignation from the navy he was appointed surgeon to the Eleventh Pennsylvania Cavalry, with which command he served three years. At the close of the war he took up the practice of medicine in Philadelphia, and soon began to specialize in ophthalmology and otology. He was elected ophthalmologist to the Pennsylvania Hospital in 1869, and served until the spring of this year, when he resigned, having completed forty years of duty. He was also consulting surgeon to the Wills Eye Hospital and consulting ophthalmologist to the Pennsylvania Institution for the Blind and to the Pennsylvania Institution for the Deaf. He was a fellow of the College of Physicians of Philadelphia and a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, and the American Medical Association.

Although seventy-five years of age, Dr. Harlan was a man in vigorous health. His erect, military figure was a familiar sight to those who attended the meetings of the societies to which he belonged. Apparently he had many years to live. It is very sad that the form of exercise to which, in a large measure, he owed his health should have proved the cause of his death.

LEONARD PEARSON, B. S., V. M. D., M. D.,
of Philadelphia.

Dr. Pearson died suddenly in Spruce Creek, New-
foundland, on Monday, September 20th. He was
born in Knoxville, Indiana, on August 17, 1868. He
was graduated from Cornell University with the de-
gree of bachelor of science in 1888, and was elected
to the honorary scientific fraternity of Sigma Chi
for his scholarship. After his graduation Dr. Pear-
son was engaged by the United States Department
of Agriculture as an assistant in the handling of an
epidemic of pleuropneumonia which was causing a

high mortality rate among the cattle in Chicago and
vicinity. He received the degree of doctor of vet-
erinary medicine from the Veterinary Department
of the University of Pennsylvania in 1890, and im-
mediately went to Germany, where he spent a year
in observing the methods employed in the veterinary
schools of Berlin and Dresden and in the Veterinary
Department of the Imperial Army. Upon his re-
turn to the United States he began his work as a
teacher of veterinary medicine in the Veterinary
Department of the University of Pennsylvania, and
several years later he was appointed dean of the de-
partment, in which office he continued until his
death. At its commencement in 1907 the Univer-
sity of Pennsylvania conferred upon him the hono-
rary degree of doctor of medicine.

Dr. Pearson's scientific attainments were eminent.
His European experience coincided with the period
in which Koch worked out tuberculin, and upon his
return to the United States Dr. Pearson performed
some of the first inoculations in tuberculin in cattle
for diagnostic purposes that were done in this coun-
try. Since that time he has been one of the fore-
most exponents of preventive measures in veteri-
nary practice and has placed his knowledge of trans-
missible diseases at the service of the medical profes-
sion for application in human practice. He has been
the State Veterinarian of Pennsylvania, it was large-
ly through his efforts that the Pennsylvania Live
Stock Sanitary Board was organized, and at the
time of his death he was a member of the Depart-
ment of Health of the State of Pennsylvania and of
the Board of Health of Philadelphia.

Dr. Pearson was a modest and capable man. His
gentlemanly qualities had created for him a large
body of unconditional supporters among the men
who were associated with him in professional and
business relations. Those who were more intimately
acquainted with him loved him.

FREDERICK BAGOE, Ph. B.,
of New York.

Mr. Bagoe, a highly respected pharmacist, died
suddenly in a Maine camp on Thursday, September
23d, at the age of sixty-two. He was a native of
Denmark, and in that country he received his pro-
fessional training. After coming to America he
served for several years as the apothecary of the
New York Dispensary, and for many years, up to
the time of his death, he taught pharmacology in
the New York Postgraduate Medical School and
Hospital.

News Items.

Changes of Address.—Dr. Edward H. Goodman, to
248 South Twenty-first Street, Philadelphia.
Dr. Maurice Ostheimer, to 118 South Twenty-second
Street, Philadelphia.

Dr. Albert G. Pohly, to 1239 Madison Avenue, New
York.

Dr. Moritz Grass, to 133 West Seventy-seventh Street,
New York.

Dr. Joseph Buandaleone, to 323 East Thirteenth Street,
New York, on or about October 1st.

The New Mexico Medical Society held its twenty-
eighth annual meeting in Roswell, on September 15th and
16th, under the presidency of Dr. C. K. Angle, of Silver
City. Physicians were present from almost every town in
the State, as well as many from Texas.

Richmond, Va., Academy of Medicine and Surgery.—At a regular meeting of this academy, held on Tuesday evening, September 28th, the programme included a paper entitled *Surgical Treatment of Ascites*, by Dr. W. L. Peple, and a paper on *Ventilation*, by Dr. E. G. Hill.

London School of Tropical Medicine.—The official opening of the next session of this school will take place on Tuesday, October 26th. The American Ambassador will preside and an address will be delivered by Dr. William B. Osler, regius professor of medicine at Oxford University.

The Northern Medical Association of Philadelphia.—At a stated meeting of this society, held on Friday evening, September 24th, the principal feature of the programme was a paper by Dr. Charles W. Bonney, entitled *Spontaneous Rupture of the Pylorus into the General Peritoneal Cavity Producing Acute Diffuse Peritonitis*. An interesting discussion, opened by Dr. E. E. Montgomery, followed the reading of the paper.

Philadelphia Charities to Benefit by Automobile Race.—The entire proceeds of the Fairmount Park automobile races, to be run under the auspices of the Quaker City Motor Club on October 9th, will be given to four institutions, as follows: The Pennsylvania Society for the Prevention of Tuberculosis, the Children's Aid Society of Pennsylvania, the Rush Hospital for Consumption and Allied Diseases, and the White Haven Sanatorium.

The Michigan State Medical Society held its annual meeting in Kalamazoo recently and elected the following officers for the ensuing year: President, Dr. J. H. Carstens, of Detroit; first vice-president, Dr. V. Tucker, of Bay City; second vice-president, Dr. E. E. Webster, of Sault Ste. Marie; third vice-president, Dr. J. T. Breakley, of Ann Arbor; fourth vice-president, Dr. R. M. Eccles, of Blissfield. The society will meet next September in Bay City.

The New York College of Physicians and Surgeons Begins a New Year.—The College of Physicians and Surgeons (Medical Department of Columbia University) begins its one hundred and first year on September 23d, with a total enrollment of 279 students, including 85 new members of the first year class. President Nicholas Murray Butler delivered the address of welcome and Dr. Christian A. Herter spoke on *Imagination and Idealism in Medical Science*.

The Homœopathic Medical Society of Pennsylvania held its forty-sixth annual meeting in Scranton last week. Officers for the ensuing year were elected as follows: President, Dr. H. F. Schantz, of Reading; first vice-president, Dr. George B. Moreland, of Pittsburgh; second vice-president, Dr. J. Herbert Reading, of Philadelphia; recording secretary, Dr. Edward H. Pond, of Pittsburgh; corresponding secretary, Dr. Edwin Gramm, of Philadelphia; treasurer, Dr. Ella De Groff, of Allegheny.

The Physicians' Legislative League of New York was incorporated on September 23d. It is stated that the objects of the organization are to "promote and stimulate a higher standard of professional ethics among members of the medical profession, to recommend the enactment and enforcement of laws tending to elevate the practice of medicine and surgery, and to oppose the passage of laws detrimental to the profession; also to arouse among physicians a regard for their rights in the profession and as citizens of the community."

Foreign Medical Students in Japan.—It is said that the number of medical students from foreign countries applying for admission to the medical colleges of Japan is steadily increasing. Heretofore there have been no prescribed standards regulating the admission of such students, but hereafter candidates will be expected to understand the Japanese language and have attainments not lower than graduates of the Japanese High Schools. It is also proposed to make Japanese the sole official language for the examination of physicians.

The American Hospital Association.—At the eleventh annual meeting of this association, held in Washington, D. C., on September 21st to 24th, the following officers were elected for the ensuing year: President, Dr. H. B. Howard, of Boston; first vice-president, Dr. J. N. E. Brown, of Toronto, Canada; second vice-president, Dr. Wayne Smith, of St. Louis, Mo.; third vice-president, Miss Mary L. Keith, of Rochester, N. Y.; secretary, Dr. W. L. Babcock, of Detroit, Mich.; treasurer, Asa Bacon, of Chicago, Ill. The association will hold its next meeting in St. Louis, Mo., during the third week of September, 1910.

Amœbic Dysentery in San Francisco.—According to a report issued by the United States Public Health and Marine Hospital Service, cases of amœbic dysentery are frequently admitted to the Marine Hospital at San Francisco. The total number of such cases received from December 1, 1908, to August 9, 1909, was 55, of which 16 were thought to have originated in California. The local health authorities are investigating the matter, and at a special meeting of the San Francisco Board of Health, held recently, a number of measures were decided upon, one of them being to declare amœbic dysentery, or amœbiasis, to be an infectious disease and all cases must be reported to the board of health.

A National Conference on Pellagra will be held in Columbia, S. C., on November 3 and 4, 1909, under the auspices of the South Carolina State Board of Health. Physicians and sanitarians are cordially invited to attend. Although the malady is of comparatively recent recognition in this country, it has already manifested itself in seventeen States, and is assuming the proportions of a national public health problem. The conference will include not only addresses, papers, and discussions, but a number of clinical cases will be presented, thus affording an excellent opportunity for a study of the disease. Information can be obtained by writing Dr. C. F. Williams, Secretary of the South Carolina State Board of Health, Columbia.

The Philadelphia Physicians' Business Journal is the title of a monthly publication recently established in Philadelphia, which is devoted to the business interests of the medical profession. The journal is intended to aid in the correction of the abuse of medical charities, to act as a medium of communication between the various local business associations of physicians, and to constitute a central business bureau for Philadelphia physicians. It is edited by Dr. P. B. Thatcher, of Philadelphia, and published by Kent Brothers, 547 Pearl Street. The text matter of the journal treats of such questions as the collection of accounts, the relation of the physician to the business world, and the protection of the medical profession from imposition.

The Sixth District Branch of the Medical Society of the State of New York, comprising the members of the medical societies of the counties of Otsego, Delaware, Madison, Chenango, Cortland, Tompkins, Schuyler, Chemung, Tioga, and Broome, held its third annual meeting in Oneonta on September 28th. The morning session was devoted to the transaction of routine business, and the scientific programme was presented in the afternoon. The papers read were of unusual excellence and were thoroughly enjoyed by all present. There was a large attendance of members and visitors, and the meeting was in every way a great success. Dr. Frank de W. Reese, of Cortland, was elected president for the ensuing year, and Cortland was selected as the place for the next annual meeting of the society.

Philadelphia County Medical Society.—The Central Branch of this society met on Wednesday evening, September 22d. Dr. Joseph S. Neff, director of the Department of Public Health and Charities, delivered an address on the Physician's duty in Connection with Recent Legislation Secured by the Department of Public Health and Charities, in which he spoke of some of the purposes for which the Act of Assembly was passed at the last session of the Legislature, and said that while much could be accomplished by the department under these laws, the cooperation of the medical profession was necessary for the best results. The subject was discussed by Dr. Edward P. Davis, Dr. George M. Boyd, Dr. Alice Weld Tallant, Dr. Herman B. Allyn, Dr. S. W. Newmayer, and Dr. Seneca Egbert.

The New Crusade is the title of an educational leaflet which has been issued by the State Charities Aid Association of New York, being the third edition of the pamphlet known among the ranks of the white plague fighters as No. 104. The cover, which was designed by William Balfour Ker, shows a sea of hands, some old and horny, some young and bejeweled, and some baby hands alongside those of darker skin, all reaching in supplication to the double red cross, the emblem adopted by the new crusaders, around which glows the motto, "In hoc signo vinces." "By this sign we conquer." This publication is but one expression of the general wave of awakened interest in the conservation of public health. Labor unions, fraternal insurance companies, and religious bodies are all taking a part in this important movement.

The Colorado State Medical Society held its thirty-ninth annual meeting in Estes Park, on September 14th, 15th, and 16th. There was a large attendance and the meeting was in every way a great success. The following officers were elected: Dr. Leonard Freeman, of Denver, president; Dr. John R. Espy, of Trinidad, first vice-president; Dr. A. J. McDonald, of Leadville, second vice-president; Dr. Ella Meade, of Greeley, third vice-president; Dr. Samuel C. Halley, of Fort Collins, fourth vice-president; Dr. Melville Black, of Denver, secretary; Dr. George W. Miel, of Denver, treasurer. Members of the board of councilors: Dr. E. J. A. Rogers, of Denver, and Dr. George H. Cattermole, of Boulder, delegates to the American Medical Association; Dr. Hubert Work, of Pueblo, and Dr. Alexander Maugruder, of Colorado Springs. The next meeting of the association will be held in Colorado Springs in September, 1900.

The Naval Medical School, Washington, D. C., will open its next session for the instruction of junior medical officers on October 4th. The faculty will include Medical Director J. G. Boyd, president of the school; Surgeon C. F. Stokes, Surgeon F. L. Pleadwell, Surgeon E. J. Grow, Surgeon C. J. Butler, Passed Assistant Surgeon O. J. Mink, Passed Assistant Surgeon F. M. Shook, and Lieutenant Commander D. L. Wilson, retired, who will act as instructor in hospital corps drills, signaling, etc. The acting assistant surgeons who have passed the preliminary examinations for permanent appointments as assistant surgeons in the Medical Corps of the Navy will undergo final examinations at the close of the course of instruction next April, when those who are found qualified will be commissioned assistant surgeons. Examinations for admission to the Medical Corps of the Navy as acting assistant surgeons are now being held twice a month, and those who pass the examinations are appointed from time to time as they qualify.

The Health of Philadelphia.—During the week ending Saturday, September 18, 1900, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, 1 case, 1 death; typhoid fever, 58 cases, 9 deaths; scarlet fever, 26 cases, 0 deaths; chickenpox, 6 cases, 0 deaths; diphtheria, 78 cases, 6 deaths; measles, 0 cases, 0 deaths; whooping cough, 5 cases, 4 deaths; tuberculosis of the lungs, 78 cases, 32 deaths; pneumonia, 8 cases, 20 deaths; erysipelas, 3 cases, 1 death; septicæmia, 1 case, 0 deaths; puerperal fever, 1 case, 4 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 50 deaths; dysentery, 2 deaths. The total deaths numbered 403 in an estimated population of 1,565,560, corresponding to an annual death rate of 13.38 in a thousand of population. The total infant mortality was 126; 106 under one year of age, and 20 between one and two years of age. There were 46 stillbirths; 27 males and 19 females. There were 4 suicides and 13 deaths due to accidents. The total precipitation was 32 inch.

The Medical Society of the State of Pennsylvania held its fifty-ninth annual session in Philadelphia on September 27th to October 1st. The routine work of the society was transacted by the House of Delegates, and the majority of the scientific discussions were conducted in sections in medicine, surgery, and the specialties. Sanitary science, the social evil, the public school from a medical point of view, State appropriations to hospitals, the municipal management of communicable diseases, and the campaign against tuberculosis were discussed in the general session, before which the address of the president, Dr. George W. Wagner, of Johnstown, was delivered. Dr. Arthur B. Moulton, of Camp Hill, delivered the oration in State medicine. Dr. George M. Boyd, of Philadelphia, delivered the address in gynecology, and Dr. Charles W. Burr, of Philadelphia, the address in neurology. A scientific exhibit was made, which was contributed to by the college and hospitals of the city. Upwards of twelve hundred members registered, as being in attendance. Dr. Theodore Burton Appel, of Lancaster, was elected president, and Pittsburgh was selected as the next place of meeting. The entertainments in Philadelphia were of the highest character, at which Dr. Frederick A. Cook, of Brooklyn, the arctic explorer, made a brief address, luncheons on different days by the Jefferson Medical College, the Medicochirurgical College, and the University of Philadelphia, besides various receptions, con-

The Health of Pittsburgh.—During the week ending September 18, 1900, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 4 cases, 0 deaths; typhoid fever, 31 cases, 2 deaths; scarlet fever, 25 cases, 2 deaths; diphtheria, 10 cases, 2 deaths; measles, 2 cases, 0 deaths; whooping cough, 3 cases, 2 deaths; pulmonary tuberculosis, 31 cases, 3 deaths. The total deaths for the week numbered 138, in an estimated population of 572,000, corresponding to an annual death rate of 12.54 in a thousand of population.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending September 18, 1900, there were 1,284 deaths from all causes reported to the department, 27 less than for the corresponding week in 1908. The annual death rate in a thousand population was 14.67 for the whole city, and for each of the five boroughs as follows: Manhattan, 13.67; the Bronx, 18.74; Brooklyn, 15.35; Queens, 13.42; Richmond, 17.39. The total infant mortality was 501; 351 under one year of age, 66 between one and two years of age, and 54 between two and five years of age. Of the total number of deaths of children under five years of age, 211 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 53; pulmonary tuberculosis, 132; diarrhoeal diseases, over five years of age, 228; organic heart diseases, 112; Bright's disease, 79; cancer, 57; pneumonia, 53; bronchopneumonia, 60; suicide, 16; accidents, 62. There were 138 stillbirths. Eight hundred and ninety-two marriages and 2,167 births were reported during the week.

The Health of Chicago.—During the week ending September 18, 1900, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 84 cases, 10 deaths; scarlet fever, 87 cases, 4 deaths; measles, 17 cases, 0 deaths; whooping cough, 60 cases, 5 deaths; tuberculosis, 67 cases, 61 deaths; pneumonia, 11 cases, 66 deaths; typhoid fever, 60 cases, 3 deaths; chickenpox, 4 cases, 0 deaths; erysipelas, 2 cases, 0 deaths; mumps, 2 cases, 0 deaths. The deaths from other important causes were: Cancer, 31 deaths; nervous diseases, 18 deaths; heart diseases, 45 deaths; apoplexy, 5 deaths; Bright's disease, 46 deaths; diarrhoeal diseases, under two years of age, 13 deaths; diarrhoeal diseases, over two years of age, 17 deaths. There were 7 suicides, 35 deaths due to accidents, and 7 deaths from manslaughter, making a total of 49 deaths by violence. The total number of deaths during the week was 603, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.18 in a thousand of population. The infant mortality was 224; 156 under one year of age, and 68 between one and five years of age.

Personal.—Dr. William T. Shoemaker and Dr. P. N. K. Schwenk have been elected ophthalmologists to the Pennsylvania Hospital, Philadelphia.

Dr. Mary Buchanan and Dr. Josephine Hildrup have been elected associate clinical professors of ophthalmology in the Woman's Medical College of Pennsylvania.

Dr. Carl Williams has been elected oculist to the Pennsylvania Institution for the Deaf and Dumb, in Philadelphia, vice Dr. William T. Shoemaker, resigned.

Dr. W. S. Shephard, of Slab Fork, W. Va.; Dr. A. T. W. Johnson, of Harbor Island, Bahamas; Dr. E. R. Bray, of St. Paul, Minn.; Dr. Joseph D. Lowry, of Kansas City, Mo.; Dr. F. F. Bickel, of Shamokin, Pa.; and Dr. F. D. Raker, of Shamokin, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. Frederick Peterson, of New York, has returned from a summer in Japan and China, and now occupies his new office at 20 West Fifth Street.

Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, has returned from a vacation in Europe covering several months. While in Paris Dr. Carrel delivered a number of lectures on modern surgery.

Dr. Frank Woodbury, of Philadelphia, read a paper on Brain Storm at a recent meeting of the Chester County, Pa., Medical Society.

Dr. T. G. Jenny and Dr. Henry Klinzing, of Pittsburgh, have been appointed members of the typhoid commission. Dr. J. G. Mason is the executive head of this commission, which was established recently by the Russell Sage fund.

Dr. Morgan P. Moorer, of Georgetown S. C., has received official notification of his appointment as quarantine officer of the port.

Gifts and Bequests to Charity.—By the will of William H. Singer, the Allegheny General Hospital, Pittsburgh, will receive \$20,000; the Pittsburgh Association for the Improvement of the Poor, and the Pittsburgh Newsboys' Home will each receive \$10,000, and the Church Home of Pittsburgh will receive \$5,000.

By the will of Dr. George C. Haller, the Hahnemann Hospital, of Philadelphia, will receive the testator's medical library.

The Flushing, L. I., Hospital will receive \$10,500 from the Flushing Aid Society as a result of the carnival and circus held recently for the benefit of the hospital.

By the will of Mrs. Ellen M. Hennessy, the St. Francis Hospital, of New York, will receive \$500.

By the will of Benjamin Wooley, late of Little Neck, L. I., the Flushing Hospital and Dispensary will receive \$2,000.

By the will of the Rev. William F. Sheehan the Albany Hospital and the Hospital for Incurables, Albany, N. Y., will each receive \$5,000.

A bequest of \$5,000 was made to Berea College, Berea, Ky., by the will of Dr. William P. Wesselhoeft, late of Boston.

Society Meetings for the Coming Week:

MONDAY, October 4th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association (annual); Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, October 5th.—New York Academy of Medicine (Section in Dermatology); New York Dermatological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association.

WEDNESDAY, October 6th.—Society of the Alumni of Bellevue Hospital; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

THURSDAY, October 7th.—New York Academy of Medicine; Dansville, N. Y., Medical Association.

FRIDAY, October 8th.—New York Society of Dermatology and Genitourinary Surgery; New York Academy of Medicine (Section in Otolaryngology); Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

SATURDAY, October 9th.—Therapeutic Club, New York.

The Medical Education of Women in Great Britain.—According to the *British Medical Journal* for September 4th, women are now admitted to all the universities of Great Britain, except Oxford and Cambridge; the Royal College of Physicians, London; the Royal College of Surgeons, England; the Society of Apothecaries of London; and the Conjoint Colleges of Scotland and of Ireland. The regulations of each differ considerably, so that it is necessary for a student to decide, before beginning her course, which degree or diploma she will aim at obtaining. The ordinary regulations of the General Medical Council must be observed, and women can pursue their education either at certain schools open only to women, or at certain ordinary schools where they do their work more or less in common with men students. The schools which admit women only are the London School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London; the Edinburgh School of Medicine for Women, and Queen Margaret College, Glasgow. Women are also admitted to the Schools of Medicine conducted in connection with the Universities of Dublin, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, and Aberdeen; the Catholic University, Dublin; St. Mungo's College, Glasgow; Bristol University College; the Schools of Surgery of the Royal College of Surgeons in Ireland, and of the Queen's Colleges of Belfast, Cork, and Galway. Two years of the medical curriculum can be taken by women students at the United College, St. Andrews, and the remaining three at University College, Dundee, where the whole five years can be passed if desired. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

Path of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 15, 1909.

1. The Relationship between True and False Angina Pectoris. By GEORGE G. SEARS.
2. Spina Bifida Occulta. By JAMES WARREN SEVER.
3. Cysts of the Long Bones. A Report of Three Cases, By CHANNING C. SIMMONS.
4. A Case of Fatty Infiltration of the Liver in an Infant of Three Months. By CHARLES A. PRATT.
5. The Pædiatric Society and the General Practitioner, By MICHAEL KELLY.
6. On the Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or Are above It. By E. A. CODMAN.

1. True and False Angina Pectoris.—Sears says that cases of angina pectoris have been divided into two groups: Those which are associated with definite pathological lesions, and those which are not. The former have been classified as true, the latter as false, or pseudoangina. In one, sudden death may be expected; in the other, recovery is the usual outcome. This division is convenient from the clinical point of view, but the question still persists whether it is not a purely artificial one, based on conditions which influence the outcome, but are of secondary importance in producing a paroxysm whose essential cause may be the same in both instances. The answer is difficult, for it is still impossible to give a definition of angina which will always serve to distinguish it positively from other cases, characterized by the sudden onset of cardiac or circulatory symptoms of more or less brief duration. It is even a matter of dispute whether it should be classified as a disease or as a set of symptoms arising from a multiplicity of causes. While certain points in distinctive diagnosis have been designated as characteristic of the true or false form, there are none which are distinctive. The age of the patient has been considered one of the determining factors in diagnosis, but death may follow a paroxysm in the earlier decades, and recovery is not impossible in the later. The true form is reputed to be more common in men, the spurious in women, but it would seem to express more accurately the condition to say that both sexes are susceptible to angina, but that it more often ends fatally in men, since they are more subject to degenerative changes in their heart and blood vessels. Pain in the true form may be beyond the power of language to describe, but it may be slight, and it is not necessarily located over the heart, while that of the false may be intense. The pulse may be small and weak in the false and normal in the true form, and in both the blood pressure may be raised, but it must be admitted that our knowledge of the latter is limited, as, owing to the nature of the case, accurate determinations of it have been few. The symptoms on which most stress has been laid in making a distinctive diagnosis are the influence of exertion in producing an attack and the behavior of the patients during its continuance. Though breast pang after exercise is most suggestive of a local lesion, the exceptions to the rule are too numerous to make it of great value in diagnosis, since attacks of true angina may occur without apparent cause, and physical effort may precede the

false. If the essential element in angina pectoris is some alteration, either functional or organic, the nature of which has so far escaped detection, in a nervous centre, and its prognosis chiefly a question of the presence or absence of certain organic lesions, whose association with the attacks does not necessarily imply a causal relation, the use of such terms as pseudo, spurious, and false to distinguish the cases is of questionable propriety, since it implies the existence of two separate and distinct morbid entities, one a serious affection, the grim precursor of death, the other a disagreeable but trifling affair, a sort of low comedian among diseases, masquerading in another's clothes and mimicking another's actions.

2. **Spina Bifida Occulta.**—Sever reports eleven cases of spina bifida occulta. They show that it may exist in varying degrees, accompanied or not by other severe deformities of greater or less importance. Operation is not indicated in a large number of these cases, especially when not accompanied by pain, anæsthesia, hyperæsthesia, or complete paralysis. In a number of cases, the deformity itself cannot be corrected and one has to devote the attention to the complications. Hypertrichosis is not constant but is more frequent in the low dorsal and lumbar region. Lateral curvature may or may not exist, and if it does, it is to be treated as such. Prognosis for life is good, and in the paralytic cases not a great deal can be done except to attempt to correct the deformity.

3. **Cysts of the Long Bones.**—Simmons draws the following conclusions from three cases and a review of the literature: The so called solitary cysts of the long bones are in most cases due to the degeneration of preexisting tumors, that is, growth and softening of a chondroma arising from a misplaced piece of epiphyseal cartilage. This theory, however, does not account for all the cases. The tumors are essentially benign growths and may be cured by a conservative operation. They are seen almost exclusively in children and young adults. In any case of spontaneous fracture or fracture following slight violence, a radiograph should be taken to determine the presence or absence of a bone cyst as a predisposing cause. A positive diagnosis is impossible without a radiograph, which should be examined by a man conversant with the appearance of bone tumors.

6. **Round Ulcers of the Duodenum and of the Pylorus.**—Codman states that duodenal ulcer is an extremely common disease, comparable in frequency to appendicitis. In most cases it heals without leaving a noticeable scar, since the mucous membrane, glands and all, is replaced. It should be possible to detect these scars by sections of the first inch of the duodenum in patients dying from other causes, particularly in males after the age of forty. The lesion usually shows as a cicatricial gap in the muscle layer. The apparent discrepancy between the post mortem statistics on the relative frequency of duodenal and gastric ulcer and the modern surgical findings can be reconciled if it is shown that pyloric ulcers are usually duodenal in origin. Round duodenal ulcers either by lateral invasion or by the coalescence of neighboring small ulcers become first encircling ulcers and then tend to pro-

gressively and relatively rapidly spread stomachward, leaving the same lower lip fold at the duodenal edge. The impression is given that they are gastric ulcers since far the larger part of the ulceration is in the stomach and the exact situation of the pylorus is lost. It is possible that duodenal ulcers are primary where both gastric and duodenal exist together, and not the reverse, as was formerly supposed.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 25, 1909.

1. The Obliteration of the Craving for Narcotics, By ALEXANDER LAMBERT.
2. The Prevalence of Rabies in the United States, By JOHN W. KERR and A. M. STIMPSON.
3. A New Type of Phthisiophobia, By ADOLPHUS KNOFF.
4. A Side Light on the Origin of Tabes, Drawn from a Comparison of Tabes with Spinal Degeneration as Seen in Certain Anæmias and Kindred Disorders of Nutrition, By JAMES JACKSON PUTNAM.
5. The Feeding of Immature and Atrophic Infants, By ALFRED BAKER SPALDING.
6. A Teratoma of the Hypophysis Cerebri, By D'ORSAY HECHT.
7. The Clinical Value of Radiography of the Mastoid Region, By SAMUEL IGLAUER.
8. Bronchoscopy and Œsophagoscopy; Gleanings from Experience, By CHEVALIER JACKSON.
9. Clinical Manifestations of Adenoids in Adults, By OTIS ORENDORF.
10. Suppurative Accessory Sinus Diseases in which an Intranasal Operation is Indicated, By HANAU W. LOEB.
11. Acute Inflammations of the Accessory Sinuses. Symptoms, Diagnosis, and Treatment, By D. BRADEN KYLE.
12. Diseased Conditions Involving Accessory Sinuses in which External Operation is Indicated, By CORNELIUS G. COAKLEY.

2. **Prevalence of Rabies in the United States.**—Kerr and Stimpson give a very interesting report with a map showing the prevalence of rabies in the United States during 1908. There were 111 deaths in human beings from hydrophobia reported from thirty States during the year 1908. Rabies was reported in the lower animals from at least 534 localities in thirty-nine States and territories, including the District of Columbia. Evidence has also been secured of nearly 1,500 persons who, on account of exposure to rabies, or presumably rabid animals, were obliged to take the Pasteur treatment. The disease is disseminated throughout the eastern three fourths of the country, and seems to have been unknown during the past year only in the Rocky Mountain and Pacific slope regions. The suppression of rabies in man merely affords another instance of the necessity of eliminating a like disease from among animals. This means the destruction of infected animals and the proper muzzling of all dogs in infected areas.

3. **Phthisiophobia.**—Knopf refers to the decision of the State Board of Medical Examiners of Oklahoma to refuse granting licenses to practise medicine to all physicians afflicted with tuberculosis. To justify their position it was held by the board that the interests of the patients demanded this action. He speaks of the tuberculous physicians who were our leading men in the fight against tuberculosis. Laennec, Brehrer, Dettweiler, Grancher, Sully, Trudeau; and shows the great amount of gratitude we owe these men. He concludes by saying:

"The medical profession of the State of Oklahoma can not afford to have the distinction of having created a new kind of phthisiophobia which is cruel, unkind, unjust, and certainly not fraternal. The authorities of that great State can not afford to have the unique stigma of inhumanity and selfishness, not to say lack of wisdom, attached to the fair name of Oklahoma. If the medical board of that State should maintain its attitude, I would consider it a reflection on the medical profession of the whole United States. And it is in the hope that the Oklahoma State Board of Medical Examiners may be induced to reconsider this decision by learning the sentiment of the American medical profession at large on the subject that I ask this section to adopt resolutions, for recommendation to the House of Delegates." (The Reference Committee on Hygiene and Sanitary Science of the American Medical Association returned no report on Dr. Knopf's resolution, and therefore no action was taken by the House.)

4. **Origin of Tabes.**—Putnam compares tabes dorsalis and pernicious anæmia, and remarks that we are dealing here with two disorders resembling each other superficially in certain respects, but at the bottom very different from each other, and each "running true" to a remarkable extent. Two hypotheses are advanced to explain their genesis, namely, (a) that they are due, respectively, to special toxins, modified and accentuated doubtless by fatigue and other influences, but not essentially modified; (b) that they may arise as the result of any one of various toxins or other causes, and that fatigue, or nutritive overstrain in particular, may play a notable part in determining the outcome. If the first hypothesis can be accepted the definite character of the two disorders is readily intelligible, and it need excite no wonder that they approach each other in some respects and yet do not really overlap. If the first hypothesis must be rejected and the second can be accepted, these facts are hard to understand. It would be going too far to say that the facts are unintelligible under the second hypothesis, because, of course, it may be that the tabetic degeneration and the diffuse degeneration of pernicious anæmia do not owe their peculiarities, in any case, to the action of specific poisons, but represent only particular modes of breaking down of the nervous system. This is probably the explanation of the neuroses, such as migraine. But if this is so and we are not dealing, in the case of the two disorders under consideration, with the action of specific poisons, analogous to diphtheria, but with native tendencies to particular forms of giving way of the nervous system, inducible by various causes, then it is hard to comprehend why syphilis appears to play such an important part in tabes and so trifling a part in the diffuse degeneration. It is also hard to comprehend, on this hypothesis, why these two disorders or modes of breaking down, implying special sorts of weakness, do not often coincide. Patients with migraine have also epilepsy at times, and show neurasthenic and hysteric tendencies, but tabetics do not have diffuse degeneration. This is especially striking in view of the consideration that fatigue, if it is an effective agent in inducing tabes, ought to be doubly prone to cause

the diffuse degeneration, because it would find itself reinforced by its natural allies, anæmia, and nutritive debility. In view of these considerations, taken in conjunction with the relation to the frequency of syphilis in tabes in men, women, and children, he thinks that the argument for a special toxine (or antitoxine) as the essential cause of the disease, while not proved and not to be asserted as positive for every case, is nevertheless a very strong one and deserves especial recognition as a guide to treatment.

7. **The Clinical Value of Radiography of the Mastoid Region.**—Iglauer states that the most satisfactory Röntgen pictures may be obtained in oblique profile of the temporal bone. The internal anatomy of the temporal bone can be determined prior to operation, and the knowledge so obtained is a great aid to the surgeon. Osteosclerosis of the mastoid secondary to chronic suppuration can usually be diagnosed by radiography. It is likely that defects in the limits of the temporal bone will appear in the radiogram. Cases failing to heal after operation should be controlled by skiagraphy, as this may reveal the seat of the trouble. The value of the Röntgen examination in cases of acute mastoiditis remains to be determined.

8. **Bronchoscopy and Œsophagoscopy.**—Chevalier Jackson says that he has used the Œsophagoscope in forty-one cases for foreign bodies in the Œsophagus, in all but one of which the intruder was removed. This case was watched fluoroscopically and after abscess formation around the intruder thoracotomy was successfully performed, the patient, a child of two years of age, making a good recovery. He has practised tracheobronchoscopy on thirty-two patients with foreign bodies lodged in the air passages below the glottis. In twenty-eight the foreign body was removed, not removed in four. He reports two deaths from anæsthesia for direct laryngoscopy. For Œsophagoscopy in infants he does not now use any anæsthetic. He says it is not necessary if the Œsophagoscope is very carefully and skillfully passed, and, most important of all, if the patient is held in the Boyce position by a trained assistant. In adults, the relaxation of a general anæsthetic is advantageous, though not absolutely necessary, except in a few conditions. Foreign bodies in the Œsophagus are just as apt to cause dyspnoea as those in the trachea. In direct laryngoscopy the lessening of the cough reflex is usually necessary for careful work under direct inspection. The blades of the forceps must never be closed unless their closure is carefully guided by the eye. This necessitates a lessening, or, in some instances, the total abolition of the cough reflex. In children the sparing administration of chloroform is safer than the local use of cocaine in most cases, though, of course, the bronchoscope must be instantaneously introduced into the trachea and kept there, if there is any respiratory difficulty. The bronchoscope is a better breathing channel than a tracheal wound. Oxygen and amyl nitrite can be administered directly through the tube, in any idiosyncratic chloroform intoxication. Respiration is more often arrested in the endoscopic removal of foreign bodies from the Œsophagus than in tracheobronchial cases, though laryngeally lodged cases are worse in this respect than any of the others. Jackson describes

his armamentarium which consists of four tubes, two slide specula, one aspirator for the œsophagoscopes, one specimen forceps, one foreign body forceps, three Coolidge sponge holders; one Sajous cotton holding laryngeal forceps; and one double bronchoscopic battery. The œsophagoscope is pointed as a billiard cue, the operator having a mental picture of the course of œsophagus beneath the bared neck. If the head is held in the Boyce position the cervical vertebrae are parallel to the œsophagoscope, so that they are (in the recumbent position) in the horizontal plane. If the head is held in the dangerous (for this work) position of Roser, the cervical vertebrae are curved and the œsophagoscope strikes almost vertically on the convexity and can not be introduced into the introitus œsophagi. If the attempt is made to pass the œsophagoscope in the middle line it encounters at once the cricoid cartilage which is pressing firmly on the posterior hypopharyngeal wall. Very often, too, in the centre line the tube mouth will hook over one or both the arytenoids and the voice will be damaged if force be used, but the chief obstruction is the posterior half of the cricoid cartilage. Nearly every one, on meeting this obstruction, uses force; this is a serious and often fatal blunder. If the œsophagoscope is inserted in the pyriform sinus the tube will glide down like a pencil in a pocket. The position of the pyriform sinus is on either side of the cricoid cartilage, and the right one is most convenient.

9. **Adenoids in Adults.**—Orendorf remarks that adenoids in adults are not common, as they usually disappear before maturity, but when they do not their character changes from those of childhood. The patients are really sufferers and think that there is no relief because the "catarrh is in the system." There is no value in sprays and applications or internal treatments. Results of complete operation are satisfactory and permanent.

MEDICAL RECORD

September 25, 1900.

1. Clinical Experience with Calcium Lactate in Hemorrhages of the Upper Air Tract.

By W. K. SIMPSON.

2. The Therapeutics of Calcium Sulphide in Relation to Surgery and Contagious Diseases.

By CLARENCE D. USSHER.

3. The Clinical Side of Disease in the Philippine Islands.

By THOMAS W. JACKSON.

4. Simpson and Chloroform.

By VICTOR ROBINSON.

5. The After Care of the Insane.

By G. H. WILLIAMS.

6. Tonsil Removal, Opsonic Index, and Immunity.

By BRYAN D. SHEEDY.

1. **Calcium Lactate in Hemorrhages of the Upper Air Tract.**—Simpson remarks that clinical experience shows that calcium lactate has a controlling influence in hastening the coagulation of the blood. Its efficacy is more marked in hæmophilic patients where the coagulation is delayed, than in cases of normal coagulation time. Before operation, especially on tonsils and adenoids, careful inquiry should be made relative to any hæmophilic heredity or tendency. In suspicious cases the coagulation period should be determined before operation. It is questionable, if not positively contraindicated, whether such operations should be undertaken in hæmophilic cases, other than under the most extreme urgency. In all cases of operations for the

removal of tonsils and adenoids, calcium lactate should be given for a period prior to and after the operation, both for its possible effect in diminishing the immediate hæmorrhage and in preventing secondary surface hæmorrhage. Of the calcium salts, the lactate is more positive in its results, is more agreeable to administer, and is less irritating to the stomach.

2. **The Therapeutics of Calcium Sulphide in Relation to Surgery and Contagious Diseases.**—Ussher says that calcium sulphide will disinfect and bring about absorption of even large quantities of pus and will prevent pus formation. For some reason, possibly nonabsorption or age of drug, it is not always specific. It appears to be a specific cure and antiseptic as well as prophylactic in typhus exanthematosus, variously known as famine fever, prison fever, and ship fever, and to be an efficient prophylactic for scarlet fever and distinctly modifies scarlet fever and measles. It prevents pustulation, pitting, and secondary fever in smallpox, very decidedly shortens the disease, and appears to lessen if not entirely destroy the contagion, and also to act as an efficient prophylactic in the absence of vaccination. The dose will vary according to the patient and seems more dependent upon constitution than upon age or body weight. He gives small doses frequently repeated. The physiological effect of saturation is the odor of sulphureted hydrogen from the skin and breath, not belched from the stomach.

3. **The Clinical Side of Disease in the Philippine Islands.**—Jackson reports some interesting observations on typhoid fever, cholera, dengue, dysentery, and beriberi, as found in the Philippine Islands.

6. **Tonsil Removal, Opsonic Index, and Immunity.**—Sheedy observes that artificially acquired immunity may be established in two ways: 1. By injecting bacteria or their products into an individual whose tissues will react and produce protective substances or antibodies. These protective substances aid the body by neutralizing the bacterial toxins or by destroying the bacteria themselves, and these bodies may remain in the system for years, thus causing a temporary or permanent immunity, as the case may be. When immunity is secured in this manner it is termed active immunity. 2. If the serum of an actively immunized animal is injected into a second animal the second animal becomes immune without its cells developing the anti-substances. This process is termed passive immunity. If the serum used in bringing about this immunity contains only the property of neutralizing this toxic product of the bacteria, it is known as antitoxic immunity. It should be noted that bacteria against which antitoxic immunity is established give off their poisons while alive. An example of this variety is the antitoxic serum used in diphtheria. It is also observed that some bacteria give off a toxine after their death. Any serum introduced for the destruction of organisms is known as antimicrobial serum. In all cases where this serum is employed the patient shows marked reaction or a toxæmia from its use. All immunities except inherent immunities may be produced by the processes in the tonsil. Natural immunity is brought about by inflammation in the tonsil, and a species of artificially acquired immunity is produced in the crypts of the

tonsil by agglutination and the development of opsonic power. That children of tender years are not thoroughly immunized is proved by the fact that they so readily succumb to the many germs attacking and destroying child life, thus, for example, of pneumonia, diphtheria, scarlet fever, etc. He thinks that the normal tonsils are most active during the first two or three years of life, and that they are not absolutely necessary to the well being of the individual after the period of childhood. The fact that they are not necessary is proved every day through our enucleating them without apparent injury. He believes that the ring of lymphoid tissues surrounding the oropharynx, as well as the other masses of lymphoid tissue throughout the intestinal tract, have the same functions, but to a lesser extent, than we find in the faucial tonsils. He concludes that the tonsils in young children serve an important purpose and should not be removed unless they are so far diseased as to have their normal functions interfered with, when, instead of acting as a fortification and protection against the inroads of bacteria, they may become the portals by which the enemies to health gain admittance.

BRITISH MEDICAL JOURNAL.

September 11, 1900.

1. Observations on Injuries of the Optic Nerve, By J. JAMESON EVANS.
2. On the Value of Surface Signs in the Diagnosis of Deep Seated Disease, By C. LEONARD ISAAC.
3. Oriental Sore of Northern India, a Protozoal Infection, By R. MARKHAM CARTER.
4. The Intensive Treatment of Syphilis by Aachen Methods, By REGINALD HAYES.
5. A Case of Syphilis without a Primary Chancre, By A. C. MAGIAN.
6. A Note on Very High Specific Gravity of the Urine in Healthy Women, By HERBERT FRENCH.
7. Partial Gastrectomy for Gastric Carcinoma; Recovery, By H. BETHAM ROBINSON.
8. A Case of Viper or Adder Bite (*Vipera Berus*), By R. S. C. EDLESTON.

1. **Injuries of the Optic Nerve.**—Evans discusses injuries of the optic nerve under the headings direct and indirect. Direct injuries are comparatively rare in civil practice, but in military practice they are more common. Apart from immediate and permanent loss of vision, wounds or rupture of the optic nerve are generally associated with hæmorrhage into the orbit, proptosis, and impairment of ocular movements either from injury to the oculomotor nerves or from the mechanical interference of the effused blood. He remarks here that it is absolutely unjustifiable to excise an extruded eye without making an attempt to reduce it. Indirect injuries may result from blows on the eye, on the orbital margins, from gunshot wounds of the orbit, and indirect injuries of the optic nerve, or from falls or blows on the head.

4. **The Intensive Treatment of Syphilis by Aachen Methods.**—Hayes describes the Aachen treatment: A thorough and exhaustive physical examination is made before treatment is begun. The heart, lungs, kidneys, nervous system, and teeth are each in turn carefully considered. The morning is commenced with a drink of from one to three glasses of the sulphur water. Next comes the bath. temperature and length of immersion being carefully adapted to the patient and to the type of disease. This is succeeded by a rest and breakfast in

bed, to be followed soon after by application at the hand of an expert rubber of a 33⅓ per cent. mercurial ointment for twenty to forty minutes, the quantity and site of inunction varying according to circumstances. The thighs, calves, arms, and back are usually treated consecutively from day to day. The groins and axillæ are avoided. Stress is laid upon mouth hygiene. A soft toothbrush is used after meals, and a mouth wash frequently during the day. These precautions permit mercury to be administered, if necessary, even to the point of causing a condition of general lassitude and drowsiness, or intestinal cramps, without the occurrence, save very rarely, of salivation or gingivitis. The extreme potency of inunction as compared with internal administration has been illustrated in his experience by cases in which the presence of a stump, or neglect of the mouth toilet for even a day or two, have rapidly caused gingivitis during its application in patients who had previously taken courses of mercury by mouth for months together without buccal discomfort. Articles of diet calculated to produce looseness of the bowels, such as white wine, uncooked fruit, and vegetables, are forbidden. Early hours are advised, and moderate use of or complete abstinence from tobacco, especially when the mouth or throat is affected. Plenty of fresh air and exercise, short of fatigue, are found also to contribute in no small degree to the attainment of a good result. The length of treatment for an ordinary case of syphilis during the first two years has hitherto been about six months, taken in courses of from four to six weeks, with intervals of rest. During part of this time some preparation of iodine or a tonic may be prescribed with advantage. Many authorities, moreover, as the result of clinical work, regard with favor a further short course yearly for three or four years. Toward a decision in this matter, again, valuable assistance can now be obtained by an appeal to the serum test. The author is absolutely in favor of the inunction method. In speaking of the objections urged against inunction, he remarks that stomatitis is usually associated with neglect of orders. Inunction has been stigmatized as dirty, but we have the testimony of patients that inconvenience in this respect is usually quite trivial. Its success is dependent upon skill in rubbing and upon proper supervision. It cannot be applied if there is much scarring or thickening of the skin, as after variola, or in ichthyosis. Certain eruptions, or very tender skins, preclude its use, as does a marked intolerance of mercury. It involves, of course, the devotion of some time daily to treatment. Diarrhœa, dermatitis, lassitude, muscular fatigue, and pain in the limbs are, indeed, consequences which may have to be reckoned with. As to inequality of action, that may not improbably be due to the idiosyncrasy of the patient or to the varying capability of the rubber. The advantages of inunction, on the other hand, include safety, potency, and painlessness, as well as freedom from most of the objections mentioned in connection with injections or internal administration. As it does not interfere with the digestive system, it permits of the simultaneous use, if necessary, of drugs by the mouth and of subcutaneous or intramuscular medication. In theory the utility of the intensive treatment by inunction has long been more or less

recognized, but we are now in a position to avail ourselves to the full of its advantages, thanks to the results of the Wassermann reaction. By this means we can ascertain at any moment, in a large percentage of cases, the degree of the drug's effect on the poison.

THE LANCET.

September 11, 1906.

1. Some Aspects of Forty Years of Hospital Experience. By A. J. PEPPER.
2. Three Cases of Sporadic Cretinism. By GEORGE R. MURRAY.
3. Rabies, with Notes of Thirty Cases. By A. BAIN and WILLIAM J. MALONEY.
4. The Ætiology of that Form of Dislocation of the Hip-joint which is Generally Regarded as Congenital. By RALPH THOMPSON.
5. Six Cases of Vaccine Treatment of Somewhat Unusual Interest. By R. W. ALLEN.
6. The Use of the Ultra Microscope for the Early Diagnosis of Syphilis. By HUGH WANSEY BAYLY.
7. Motoring Notes. By C. T. W. HIRSCH.

2. **Three Cases of Sporadic Cretinism.**—Murray reports three such cases, all three patients having been treated with thyroid extract. The first case was in a child, six years of age, height 28½ inches, who had been a healthy infant until she was eighteen months old, when she ceased to grow, slept badly, and become ill tempered. The face was said always to have been rather swollen, and the feet and hands were "blue." Two other children in the family were healthy. After six months of thyroid treatment her height increased 2¼ inches (while her normal brother grew 1¼ inches); the anterior fontanelle, which had remained open, closed; the swelling of the face greatly diminished; the lips were normal in appearance; the skin felt soft, and the hands and feet were no longer cold. The other two cases were a brother, twenty-eight years of age, and a sister, twenty-five years of age; father and mother of these two cretins were both healthy, normal individuals; no history of goitre or cretinism existed in the family. The male patient was treated with one daily dose of liquor thyroidei gradually increased from two up to fifteen minims; before leaving this was changed to three, and later to four five grain thyroid tablets a day. While he was in the hospital the subcutaneous swelling gradually disappeared and the skin became softer. The height did not increase; in fact, it was rather less when he was discharged, being 52¼ inches. It was, however, rather difficult to obtain an exact measurement. His talking improved, and he learned some new words. His sister was treated by one daily dose of liquor thyroidei, gradually increased from two to fifteen minims, and later, before going home, by thyroid tablets instead. After six weeks' treatment the circumference of the neck was fifteen inches, a diminution of three inches, and the goitre was much smaller in size, though the adenomata stood out more distinctly owing to great diminution in the intervening portions of the goitre. The largest adenoma appeared to have diminished somewhat in size, as its diameter was 3¼ inches, while that of another was 2½ inches, or rather more than it was at first. The myxedematous swelling was notably diminished in all situations. The height had increased by an inch, the temperature had reached the normal level, and the patient was much more lively.

About three weeks later the circumference of the neck was fourteen inches, a total diminution of four inches. The two adenomata previously mentioned had notably diminished in size so that they only measured two inches and 1 inch in diameter respectively. The mental condition greatly improved, and many new words and sentences were learned while she was in the hospital. No further increase in height took place. The author concludes that the two adult cases are good examples of the dire results of cretinism when untreated, and thus emphasize the great importance of the early recognition and treatment of the malady. It is to be hoped that one good result of the systematic medical inspection of school children will be that all cases of cretinism which have escaped recognition before the school age will now be diagnosed and adequately treated, so that in the future we shall not see these advanced cases. The development of the genital organs in the man and regularity of menstruation associated with good mammary development in the woman indicate that they are not examples of the severest grade of cretinism, in which menstruation is in abeyance and the mammary glands are undeveloped, as in a case previously recorded by the author. The improvement in these cases is as much as can be expected in the time when the disease is of such long duration.

5. **Six Cases of Vaccine Treatment of Somewhat Unusual Interest.**—Allen concludes from his observations in these six cases that bacteria play a by no means unimportant rôle in bronchitic asthma; no one bacterium is responsible—probably most of the catarrhal organisms play a part, but others cannot be excluded. Considerable good can be done by mixed vaccines in some cases; and accurate bacteriological and cytological observations upon a series of cases, correlating these with clinical observations, are much required to place the vaccine therapy of the condition upon a sound footing.

6. **The Use of the Ultra Microscope for the Early Diagnosis of Syphilis.**—Bayly states that a diagnosis based on the staining of scrapings from the primary chancre or from a suspected sore throat, with a view to demonstrate the presence of the *Treponema pallidum*, was not very satisfactory, as this organism is difficult to stain and will be missed in a very considerable percentage of cases. The ultra microscope, however, provides the means of making an early, rapid, and certain diagnosis, and is now in routine use for this purpose in the Paris hospitals. The ultra microscope substitutes oblique illumination for direct illumination, and as the fine, dust, invisible by direct illumination, appears as "notes in the sunbeam" by transillumination, so fine, unstained particles with the ultra microscope appear clear and distinct, and scrapings from primary or secondary lesions in the very great majority of untreated cases show the *Treponema pallidum*. All lesions do not, however, show the treponema in equal numbers; thus the organism is present in the greatest numbers in mucous plaques, is usually present in only small numbers in chancres, and is very seldom found in the roseolar rash, though frequently found in some papular rashes. The organisms are found in the margin rather than in the centre of the lesions. The treponema has not been found in the blood by this method, except in some

cases of congenital syphilis, neither has it been detected in tertiary lesions. Care must be taken not to confound the *Treponema pallidum* with the various other spirochaetae so frequently found in the mouth and genitalia. The *Treponema pallidum*, however, is so characteristic in appearance and movements that an experienced observer is unlikely to mistake any other spirochaeta for it. The technique is very simple, the chief difficulty being the adjustment of the apparatus (light, condenser, mirror, and ultra microscope). A small drop of distilled water or normal salt solution is first placed on the slide, and then the margin of the chancre, mucous plaque, or papule is gently scraped and the serum expressed by pressure, and a small quantity of this mixed with the drop of water on the slide. The distilled water causes the organism to swell when it can be more easily seen than in normal saline. A large cover glass is now applied in the usual way and pressed down firmly so that only a thin layer of fluid remains between the cover glass and slide. A drop of immersion oil is now placed underneath the slide, which must be sufficient to fill the space between the lower surface of the slide and the upper surface of the ultra microscope condenser, and a second drop is placed on the cover glass in the usual way; the preparation is now ready for examination. The blood cells, bacteria, spirochaetae, etc., will be seen as glistening refractive objects on a dark background.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 2, 1909.

1. Young Cripples and Their Care in Germany. By F. KÖNIG.
2. More Experiences with Isomral. By WASSERKLYVER.
3. Some Ætiologically Interesting Cases of Paralysis of the Shoulder and Arm, together with Remarks Concerning the Pathology of the Cervical Ribs. By M. BERNHARDT.
4. Technique of von Pirquet's Cutaneous Reaction. By BUSCHE and KUTTNER.
5. Contribution to the Study of Papillary Tuberculosis of the Portio Vaginalis. By KARL EVERLING.
6. Abdominal Symptoms in the Beginning of Pneumonia (Appendicitis and Pneumonia). By BRUNO GLASERFELD.
7. Contribution to the Study of Diabetic Lipemia. By MAX ADLER.
8. Diagnosis and Treatment of Deep Seated Diseases of the Colon. By ERNST ROSENBERG.
9. Psychology and Treatment of Pathological Blushing. By O. ARONSOHN.
10. Projection of Stereoscopic X Ray Pictures. By MAX LEVY-DORN.
11. Estimation of the Sugar in the Urine by Means of the Glucometer. By I. ZEEHANDELAAR.
12. The Question of the Ability to Nurse. By VIDAL.

4. **Pirquet's Reaction.**—Busche and Kuttner modify von Pirquet's technique so as to make the inoculation in the following manner. Two small pieces of emplastrum cantharidis are bound on the extensor surface of the forearm and left until two blisters have been drawn. The serum is then withdrawn from one blister and several drops of a twenty-five per cent. solution of old tuberculin are injected in its place. The other blister is not interfered with. The arm is then bound up again and left for another twenty-four hours when, if the reaction is positive, there will be a distinct redness and swelling of the skin about the blister. The reaction lasts about three days as a rule. The test was made in 125 cases, and the practical point was

made that a distinct reaction was obtained in this manner in cases complicated with hæmoptysis, exudative pleuritis, coxitis, and lymphoma, in which von Pirquet's test was unsuccessful. Yet they are not ready to state that their method is of special practical advantage over the older method, their chief interest is in the theoretical consideration that the cantharidal blister forms an excellent bed for a delicate biological reaction.

5. **Tuberculosis of the Portio Vaginalis.**—Everling reports a case in which a tuberculous growth was excised from the portio vaginalis of a young woman, twenty-five years of age. He believes the case to have been one of primary, isolated tuberculosis.

6. **Abdominal Symptoms in the Beginning of Pneumonia.**—Glaserfeld points out that in certain cases of pneumonia the first symptoms much resemble those of appendicitis and asks how it may be possible to avoid the diagnostic error of mistaking a commencing pneumonia for a commencing appendicitis, or the reverse. This distinction may be made, he thinks, from a consideration of five points: 1. The facial expression; patients with latent lung trouble may be just as pale as those with appendicitis, but they do not exhibit such an anguished tension when the sensitive part of the abdomen is touched. The facies abdominalis is wanting. 2. The tongue is usually moist and only a little coated. 3. The increased frequency of respiration, the consideration of which is too often neglected. 4. The type of the tension of the abdominal wall, the symptom that to-day plays so important a part in the diagnosis of appendicitis; the abdominal tension accompanying pneumogenous abdominal shock is never so circumscribed as in commencing appendicitis; the sensibility of the abdomen to pressure is only superficial; deep pressure in the region of the appendix does not cause marked pain. 5. Careful objective examination of the organs.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 3, 1909.

1. The Relation between the Lipoids and Pharmacological Action. By METER.
2. Has the Active Agent of Trachoma been Discovered? By SCHMIDT-RIMPLER.
3. Cholesteatoma of the Navel. By CÖNEN.
4. V Shaped Loop of the Flexure of the Colon. By THIEMANN.
5. Ætiology of Arthritis Deformans. By HECKMANN.
6. Cobra Reaction. By GEISSLER.
7. Is the Phrenocardia Described by Max Herz a Sharply Distinguished Form of Cardiac Neurosis? By TREUPEL.
8. Treatment of the Spasms of Whooping Cough by Lumbar Puncture and Shower Baths. By ECKERT.
9. An Activator of the Kreuznach Drinking Water. By RAMSACER.
10. Intravenous Injection of Diphtheria Serum. By SCHREIBER.
11. Rare Foreign Bodies in the Bladder. By KIELLEUTHNER.
12. Rectal and Vaginal Use of Fibrolysin. By ALTHOFF.
13. Remarks Concerning My Dosimeter. By STRAUSS.
14. Wilhelm Ebstein. By SCHITTENHELM.
15. Johannes Pfannenstiel. By CÖNEN.

2. **Trachoma.**—Schmidt-Rimpler points out that the active agent in the production of trachoma has not yet been positively demonstrated, though recent investigations have made its discovery probable.

3. **Cholesteatoma of the Navel.**—Cönen reports a case of cholesteatoma of the navel met with in a man, twenty-five years old, in whom it formed a rosy red, soft tumor as large as a pea. Like cholesteatoma of the ear he considers that the tumor was the product of a desquamative catarrh, omphalitis desquamativa. The treatment of simple cases consists in curetting out the cholesteatomatous mass, in complicated cases in omphalectomy.

4. **V Shaped Flexure of the Colon.**—Thiemann reports several cases in which he has met with a V shaped flexure when operating for strictures or tumors of the colon.

5. **Ætiology of Arthritis Deformans.**—Heckmann concludes that there are two important factors in the production of polyarthritis deformans, the rheumatic predisposition and constitutional syphilis. In at least a certain percentage of cases polyarthritis deformans is a chronic, or a transition stage from the acute to the chronic form of articular rheumatism in syphilitics. In these cases the syphilis prevents recovery from the rheumatic affection and causes its development into the typical form of polyarthritis deformans.

6. **Cobra Reaction.**—Geissler finds the Much-Holzmann reaction present in one hundred per cent. of all cases of mental disease in which he has tried it, including the diseases in which those authors failed to find it.

11. **Foreign Bodies in the Bladder.**—Kielleuther reports the removal in two cases of foreign bodies from the bladder that had been introduced to relieve the irritation produced by prostatitis. In one case it was a rubber tube of some length, in the other a piece of gold wire. Both had been in the bladder for some time, the rubber tube was incrustated, the gold wire was not except at the rough end. The smoothness of the metal seemed to have prevented the deposition of the urinary salts.

12. **Rectal and Vaginal Use of Fibrolysin.**—Althoff reports a case in which fibrolysin was used per rectum for the treatment of arthritis deformans, and a second in which it was used per vaginam for a retroflexed uterus. The first patient seemed to have an idiosyncrasy against fibrolysin, but many small doses given by the rectum were borne, absorbed, and produced a decided improvement both subjectively and objectively. In the second case the adhesions that held the uterus in a retroflexed position were dissolved by a mixture of ichthyol, glycerin, and fibrolysin into the vagina, so that at the end of six weeks the uterus could be moved about and brought into an anteflexed position. He urges further trial of the rectal and vaginal use of fibrolysin, but advises to begin always with small doses and increase them gradually.

RIFORMA MEDICA

1. The Membrane of the Cell Membrane of the Red Blood Cells, By GENARO FUSCO.
2. The Study of the Cell Membrane and a Vegetable Poison (Cipua Apua) of the Belgian Congo. A Contribution to the Study of African Arrow Poisons, By GAETANO VINCI.
3. Arteriosclerosis and Heart Disease due to Occupation, By PIERO BAVIERI.
1. Cell Membrane of Red Corpuscle.—Fusco

demonstrated the red corpuscles of man, and more easily in those of rabbits, guinea pigs, dogs, and rats. Opinions differ as to the existence of a cell membrane in the red blood corpuscles. While many believe in its presence, it had not been hitherto demonstrated, so far as the author knew. Fusco found that if red blood corpuscles were subjected to the action of pyrogallic acid and were then examined with the high power, there appeared a clearly defined, central, dark mass of hæmoglobin surrounded by a lighter, colorless, elastic, and markedly swollen peripheral mass, between which and the central mass there was an empty space. The red corpuscle assumes the appearance of a vesicle with a markedly distended, elastic membrane, enclosing a central mass of hæmoglobin. The technique of this demonstration is as follows: A large drop of a five per cent. solution of pyrogallic acid is placed upon the centre of a slide. A very small drop of blood is added, and the fluids are mixed by means of a platinum needle. The mixture is quickly covered with a cover glass, avoiding the formation of air bubbles, and is examined.

2. **A New Variety of Strychnos in the Belgian Congo.**—Vinci examined a plant indigenous in the Belgian Congo, which is used by the natives as an arrow poison, known as cipua apua. The natives maintain great secrecy regarding the composition of this arrow poison, which they use not only in the chase and in war, but also for the so called enforcement of "divine judgment." The arrow poisons of the tribes living along the Congo are known but very imperfectly. Vinci found that the plant is a small shrub averaging 120 cm. in height, of which 50 cm. were represented by a root, of a reddish color, and the remainder by the stem with greyish green branches. From a study of the plant, Vinci concludes that it is *Strychnos kipapa*, Gilg, collected and described by Pogge. It contains strychnine and brucine, the former in the root as well as the stem, the latter in the stem and leaves. The bark of the root contains six per cent. of strychnine; the root itself 0.10 per cent.; the wood of the stem contains 0.16 per cent., while the bark thereof contains two per cent. of strychnine. Brucine is present in smaller quantities. The poison known as cipua apua is presumably prepared from the roots of *Strychnos kipapa* and is an aqueous solution of strychnine.

AMERICAN JOURNAL OF OBSTETRICS

September, 1909.

1. Treatment of Certain Vesical Affections by Means of Hydraulic Distention, By E. GARCEAU.
2. Suprapubic Operation upon the Pelvic Floor for Pro-lapse of the Uterus, By W. M. POLK.
3. A Case of Struma Ovarii, By R. T. FRANK.
4. A Case of Decidual Expulsion Occurring at Each Menstrual Period, B. O. FRANKL and J. J. SCRAGGS.
5. Removal of an Unusually Large Ovarian Cyst, By S. H. KNIGHT.
6. Abdominal Myomectomy for Large Uterine Fibroids, By H. P. KUHN and W. J. FRICK.
7. The Air of the Operating Room as a Possible Factor in the Infection of Wounds, By H. ROBB.
8. A Consideration of Eclampsia with a Report of a Case Accompanied by Hemiplegia, By C. W. BARRETT and J. H. HARGER.
9. Uncontrollable Hemorrhage from the Nonperineal Uterus, By G. H. MALLETT.
10. Dermatitis Exfoliativa Neonatorum, By H. G. MYRICK.

1. **Treatment of Certain Vesical Affections by Means of Hydraulic Distention.**—Garceau includes in his paper considerations on the anatomy of the lower end of the ureter, histories of twenty-one dissection cases, remarks on the muscles of the ureter, the mechanism of closure of the canal, the reflex of fluids from the bladder into the ureter, and rupture of the bladder, and then states that as a preliminary to treatment cystoscopy should be performed. The patient may be in either the dorsal or the lateral position, the bladder should be emptied, irrigated with two per cent. boric acid solution, and then three drachms of a five per cent. solution of cocaine should be injected into the bladder and urethra and retained three minutes. The cocaine is then washed out and a two per cent. boric acid solution is quickly pumped in through a Davidson's syringe. When pain is felt the injection is discontinued, the fluid drawn off, and this operation repeated until it becomes intolerable, which is usually in five minutes. The fountain syringe may be used if thought preferable. This treatment may be given every day or at intervals of three or four days. It should not be used in bladders with "golf hole" ureter with deep ulcers or deep loculi.

3. **A Case of Struma Ovarii.**—Frank states that only twelve cases of this rare condition have been reported, and that they are now regarded as atypical teratomata. Metastases are possible, there may or may not be struma of the neck. In the author's case the tumor was about as large as a peach, of irregular bossed appearance, and enclosed in the tunica albuginea. It contained cysts holding colloid material, a bony shell containing a molar tooth, and tissue identical with that of a colloid goitre. The microscopical picture in the author's case was identical with that in all the recorded cases, almost normal thyroid tissue in certain spots while in most places there was tendency to colloid accumulation and cyst formation. There were also adenomatous proliferations and hemorrhages into the cysts. In some of the recorded cases there was not only bone but cartilage, also muscle fibres, sweat and sebaceous glands, goblet cells, and ciliated epithelium. It was thought that gradual transition marks the change from a complex dermoid with thyroid tissue to so called simple thyroid tumors of the ovary.

7. **The Air of the Operating Room as a Possible Factor in the Infection of Wounds.**—Robb offers the following conclusions: 1, Floor. An antiseptic in the wash water on the floor made a difference in the bacteria falling on the plates used for experiment per minute. 2, Fan. In some cases the use of a fan seemed to make perceptible difference, in other cases it did not. 3, Walls. This was found to be an important factor, colonies of bacteria being absent if the walls had been carefully scrubbed one or more days before the experiment was made. 4, People in room. This was also important, no colonies of bacteria falling on the plates on Sunday when there were no people in the room. 5, The *Bacillus pyocyaneus* was found in a room in which a patient infected with this organism had been operated upon three weeks previously. 6, In the uncared for pathological laboratory there were molds but very few bacteria excepting bacteria coli. 7, In

summer with windows open bacteria were more numerous than in winter with the windows closed.

THE GLASGOW MEDICAL JOURNAL

September, 1909.

1. The Schools for the Deaf in Scotland and Ireland (Continued), By J. K. LOVE.
2. Extrinsic and Intrinsic Conditions Affecting School Children; A Study of some Schools and School Children in Glasgow (Concluded). By DAVID M'KAIL.
3. Notes on the Treatment of Quinsy, with an Illustrative Case, By DOUGLAS J. GUTHRIE.
5. A Case of Tabes Dorsalis in a Female in which Laryngeal Crisis, Ocular Paralysis, and Vasomotor Phenomena were Early Symptoms, By GEORGE A. ALLAN.

3. **Quinsy.**—Guthrie remarks that the frequency of suppurative amygdalitis in every day practice causes it to be a disease whose management is a matter of no small importance. Attempts to check its progress are usually futile, unless resorted to very early in the course of the attack. Such abortive measures consist in the administration of guaiacum, salicylates, etc., the use of throat paints, a brisk purge, and the external application of cold compresses. With regard to internal remedies a combination of aspirin and salol, 5 grains of each every two hours, is most useful. Cold compresses in the early stages are of more value and give greater relief than poulticing. Surgical measures hold a high place in the treatment of quinsy, and the importance of early incision can scarcely be too strongly advocated, the mucous membrane being alone incised, and the operation completed by the use of Lister's sinus forceps. Occasionally the supratonsillar incision must be carried through the anterior pillar in order to secure free drainage. The question of tracheotomy seldom arises, though oedema glottidis has been reported by Mygind, of Copenhagen, and others. In most cases the oedema of the uvula and epiglottis rapidly subsides as soon as the supratonsillar swelling has been opened. Inhalation of steam from a bronchitis kettle often affords the patient great relief. Compound tincture of benzoin may, with advantage, be added to the water. The use of creosote is less beneficial, as it causes a dryness in the throat, which counteracts the otherwise soothing influence of the steam. Spraying the throat with hydrogen peroxide (10 vols.) is a valuable remedy, especially if there is much factor or coexistent follicular tonsillitis. Considerable benefit is often derived from the sucking of small pieces of ice at frequent intervals. In virtue of its anaesthetic effect it renders swallowing much less painful, and has, in addition, a direct influence upon the inflammatory process. Constitutional treatment should never be forgotten. The debilitating effect of an attack of quinsy is well known, and in many cases stimulation is called for. Strychnine may be administered hypodermically, and small doses of brandy if the patient is able to swallow. A mixture containing strychnine and iron is of considerable value as soon as the acute stage has passed. Nourishing fluid diet, such as eggs, milk, jellies, and clear soups, should be given throughout, and increased as the appetite returns. Serum treatment must be resorted to in those dangerous cases of quinsy which tend to assume a septicæmic aspect.

Proceedings of Societies.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-third Annual Meeting, held in Cape May on June 23, 24, and 25, 1902.

The President, Dr. DAVID ST. JOHN, of Hackensack, in the Chair.

The Oration in Medicine, by Dr. THOMAS H. GRAY, of East Orange, contained a review of the progress made in medicine during the memory of physicians now in practice. He thought that there should be a national board of medical examiners.

Chloroform Anæsthesia in Throat Operations.

—Dr. FREDERICK P. C. DEMAREST, of Passaic, considered chloroform the best anæsthetic to use in operations for adenoids on children under twelve years of age, because ether was irritating to the respiratory tract, producing a flow of mucus which greatly embarrassed the operator. It took a more skilled anæsthetist to administer chloroform than to administer ether. The chloroform must be pure and fresh, not having been opened or exposed to a bright light, and must be given by the drop method.

Dr. GEORGE EDWARD TUERS, of Paterson, thought that the field of chloroform as an anæsthetic was large, and admitted that it was being used more and more every day. Compared with other anæsthetics, he regarded it as the most pleasant by far, and also the most dangerous; the quickest to anæsthetize and the quickest to kill.

Dr. WALTER S. CORNELL, of Philadelphia, emphasized the necessity of mixing air with the chloroform. He thought that there should be some arrangement of wire net with gauze over it, or that the finger should be placed under the gauze in such a manner as to admit air.

Dr. THEODORE F. LIVENGOD, of Elizabeth, said that less and less was being heard about deaths due to chloroform, because better qualified men administered it. He then described the manner in which the discovery that suspension with the head down and the legs elevated would resuscitate a person dying from the effects of chloroform had been made in carrying some rats by their tails after they had been chloroformed and were apparently dead. He considered chloroform a good anæsthetic in cases in which it was practicable to do a rapid operation, but not in cases in which prolonged anæsthesia was necessary.

The Influence of Sleep on Arteriosclerosis.—

—Dr. W. W. BEVERIDGE, of Asbury Park, said that similar changes to those occurring in the heart and bloodvessels of elderly persons frequently occurred in the young, and were not physiological, but pathological. Nutrition probably had something to do with the cause of these derangements. He thought that a more thorough study of the constitution of the cells of the body might lead to greater knowledge regarding the secondary changes produced by this condition. He then referred to the sleeping state as being one of the most important functions of the body, having to do with nutrition and the repair of the wear and tear caused by the day's activity. The amount of sleep required was in proportion to the amount of nutrition needed. He believed

that the retrograde changes incident to old age might be retarded by a more careful study of the processes that went on in sleep and affected the nutrition of the cells.

Dr. W. G. SCHAUFFLER, of Lakewood, did not agree that sleep, properly made use of, could counteract the degenerative changes in the arterial system and in other structures. He also differed with Dr. Beveridge in the opinion that arteriosclerosis was more or less easily diagnosticated. He admitted that some of the methods of treatment now employed caused regeneration of the tissues, but others did not. He thought that the fallacy in the paper was the view that sleep gave the food a chance to be absorbed and changed into the elements that built up cells.

Dr. PHILIP MARVEL, of Atlantic City, divided the principles emphasized in the paper into the regenerative influence of nutrition on cell life or cell energy and the assumption that sleep was the process that presides over the processes that converted the nutritive elements into cell life or energy. No one knew just what sleep was, and therefore nobody could determine what sleep did. So far as the voluntary forces of the body were concerned, rest was sufficient to restore them. The involuntary forces, however, continued much the same, no matter whether the person was sleeping or waking. As to the influence of sleep on metabolism, one could not tell to what extent any of the individual forces involved in metabolism entered into the reparative or recuperative effect on a cell. The cell was a composite body which under various influences was made to do different things; and the forces of the body were in some way relative to the unit of the cell. Therefore it was hard to say that sleep was that force which so controlled the forces of life as to add to the longevity of the average individual.

Dr. BEVERIDGE thought that the fact that we did not know what sleep was, did not constitute a good reason for not discussing it. He said, however, that something was known about sleep; and the fact that it occupied one third of one's life time made it important to learn more about it.

The Annual Address of the President: Some Recent Advances in Medical and Surgical Work.

—The PRESIDENT said that medicine, with surgery, was becoming an exact science, and, while great advances had been made in the diagnosis and cure of some diseases, there were others about which investigators were still in doubt. Among medical methods of diagnosis and treatment recently engaging attention, he mentioned tuberculin therapy, the use of vaccines made from dead typhoid bacilli, the Flexner treatment of cerebrospinal meningitis, the Hiss-Zugmeyer extract of leucocytes in the treatment of pneumonia, the treatment of erysipelas with polydysalant sera, the serum treatment of chronic nephritis, the Wassermann serum reaction in syphilis, and the Rogers-Beebe serum for the treatment of exophthalmic goitre. The advances in the surgical field had been equally promising, among which he mentioned the successful suturing of wounds of the heart, the starting of the heart's action by rhythmical compressions and by means of the injection of fluids after this action had ceased, the suturing of arteries to veins in transfusion, the new method of

treating aneurysms devised by Matas, of New Orleans, and the transplantation of parts of the body into a different animal. With these great advances already made, the future, he thought, was full of promise.

The Oration in Surgery.—Dr. GEORGE E. BREWER, of New York, limited himself to a consideration of two border line subjects having largely to do with the diagnosis of acute abdominal infections, acute unilateral septic infarction of the kidney, and acute perforation of an intestinal diverticulum. Of the former, he recognized three clinical types: (1) the severe, which progressed to a fatal ending unless treated by nephrectomy; (2) the intermediary, in which the initial symptoms were severe, but the evidence of grave progressing disease was wanting; and (3) the mild, which required no operation, and was of surgical interest only because it accounted for cases in which, after an attack of appendicitis, an operation reveals no lesion whatever. Acute diverticulitis he divided into four groups: (1) Mild; (2) more severe and progressive; (3) cases in which there has been a rupture of the diverticulum with the formation of a localized abscess, either intraperitoneal or extraperitoneal; (4) cases in which rupture of the diverticulum into the peritoneal cavity had taken place. The symptoms of acute diverticulitis were practically identical with those of acute appendicitis, except that it might occur on the left side of the abdomen.

Intramuscular Mercurial Injections in Syphilis. Dr. HENRY A. PULSFORD, of Orange, said that these had the advantage over mercury administered by the mouth or through the skin that one could tell exactly how much reached the circulation. If given by the mouth, mercury was apt to produce diarrhea and upset the digestion. In the case of inunctions this was avoided, but there was an unpleasant local effect on the skin. Patients were apt to be irregular about taking their medicine, and to increase or diminish the dose according to their own ideas, and other people were likely to learn about the treatment. In the injection method these disadvantages did not arise. The only objection to mercurial injections was the pain, first that of the needle thrust and afterward that caused by the irritating effect of the mercury. It varied in degree with the different preparations used. In spite of the utmost care, nodes were sometimes formed, containing a portion of the unabsorbed injection fluid; but this was exceptional. Embolism, though an alarming accident, had never proved fatal. The injection material should be as concentrated as possible. The points for successive punctures should be selected according to a definite plan, so that two or three months might elapse before a second puncture had to be made in the same spot. Trouble in the mouth was the danger signal showing that the treatment should be intermitted.

Dr. HENRY J. P. WALHAUSER, of Newark, called attention to the fact that the shifting of the needle was what produced emboli. A certain method of knowing whether the needle was in a bloodvessel or not consisted in applying an empty barrel to the needle, and then exhausting. If the needle was in a vessel, blood would be drawn into the barrel of the syringe. The injection plan of treatment would succeed when all other plans had failed, and he made a plea for its more general use.

Dr. JOHN M. BRADSHAW, of Orange, said that one should be careful to wipe the needle clean and dry with sterile gauze before the injection was given, thus avoiding pain and an inflammatory reaction.

Dr. PULSFORD referred particularly to the use of gray oil, a difficult preparation to make. It could not be sterilized, because sterilization broke up the emulsion. It must be prepared with sterile ingredients, in sterile utensils, and under aseptic conditions. Its use would repay the trouble of making it, as it caused surprisingly little pain.

Dyspepsia a Misnomer.—Dr. W. BLAIR STEWART, of Atlantic City, said that charlatans, vendors, and fakirs had made "dyspepsia" a permanent factor in the minds of laity and profession. He considered the term unfortunate, and said that its use had been decryd by the late Dr. George B. Wood, of Philadelphia. While the mistakes of earlier practitioners could be overlooked, he did not think that at the present day there was any excuse for snap judgments. One should find the real disease, and not call it dyspepsia. The earlier and more thorough the diagnostic methods that were used the more lives would be saved and the more comfort would be obtained for the patients.

Dr. J. FINLEY BELL, of Englewood, did not think that any physician had a right to take under his care for treatment a case of indigestion or any case presenting symptoms referable to the stomach without making a careful examination of the patient, physical, chemical, and bacteriological. He contended that the inconvenience and discomfort of the patient in being submitted to these tests constituted a very slight objection. Every physician should have in his laboratory the necessary apparatus. Even without the use of the stomach tube, much information, he thought, could often be obtained by examining carefully the vomitus and the feces.

Dr. LINN EMERSON, of Orange, thought that, while it was ridiculous to say that everybody with gastric trouble was suffering from eye strain, he considered it nevertheless true that this condition was often overlooked. Eye strain, he said, could cause all sorts of nervous diseases and gastric disturbances. Another thing that would cause stomach disorder was oncoming presbyopia.

Dr. K. WATSON MARTINDALE, of Camden, mentioned the absence of teeth as another cause of stomach trouble, also pyorrhœa alveolaris in patients with teeth.

Dr. HENRY CHAVANNE, of Salem, referred to indigestion produced by mental strain. He thought that before annoying patients by submitting them to the ordeal of various stomach examinations, it would be well for the general practitioner to try the effect of the administration of a little nux vomica or other simple remedy.

Dr. MARVEL did not think that a physician had any right, when he did not know the subject fully himself, to refuse to send his patient to one that did. He feared that too many physicians were not sufficiently interested in the welfare of their patients to recommend another physician to assist in the determination of the condition present or in its relief. It was within the power of the physician, at the time of passing the stomach tube, to determine the size of the stomach, whether it was distended, whether

it was displaced, and whether the distribution of its contents was normal, also whether the digestive forces were slow, moderately slow, or extremely slow.

Dr. WILLIAM F. RIDGWAY, of Atlantic City, said that the symptoms improperly classed under the term dyspepsia were not always due to organic changes, but were functional disturbances that could be obviated by the use of very simple remedies. He did not believe it wise for the general practitioner to use the various tubes that were employed in investigating through long distances the alimentary canal at either end, as he had seen great injury result from their use by unskilled persons.

Dr. STEWART said that the tenor of his paper had been to emphasize the point that it made no difference what a disease was called if a cure was promptly obtained; but that if one's simple remedies failed, the scientific methods of the present day would enable one to discover the exact cause of the disease.

Address of the Third Vice-President; Problems that Confront the Component Medical Societies.—Dr. DANIEL STROCK, of Camden, said that a great loss in good will and good fellowship, and in opportunity to learn from others and instruct others, was caused by not belonging to a county medical society. The distinction of regular and irregular physician should be abolished, because all had to pass the State board before commencing practice, and all colleges had to teach certain things in their courses. All physicians that had passed the State board should be eligible to membership in the county society. He also stated that the medical profession had begun to realize the advantage of having medical men in the legislature. If a doctor was elected to a political office, the profession should rejoice, because, no matter what his politics, he was still a doctor. In regard to the question of lodge practice, he said that very few of the public realized that the profession did not approve of those engaged in it, and he thought that more publicity should be given the matter.

Indications for the Induction of Labor, Instrumental Delivery through the Vagina, and Cesarean Section.—Dr. E. P. DAVIS, of Philadelphia, said that the cases might be divided into those that had had the test of labor and those that had not. In patients who had not had the test of labor, labor should not be induced because of pelvic deformity. Whenever, by spontaneous efforts, the presenting part did not engage in the pelvis, the application of the forceps was to be declined. An effort should be made to stimulate the patient's expulsive forces. If the parents placed great value upon the life of the child, labor should not be induced, because of its high fetal mortality; but if this was not the case, the best time for the induction of labor was in the thirty-fourth week. Delivery by abdominal section should be undertaken only when mother and child were in good condition, and no previous attempts to deliver had been made by forceps, version, or any other means. When the mother was infected in long and impossible labor, delivery by Porro's operation offered the best chance for the mother. Occasionally children, though badly bruised and injured by previous attempts at delivery, were saved by this operation.

The Indications for Interference during Labor.—Dr. SIMON MARX, of New York, said that the best operator was the one who had the faculty of knowing just when and how to interfere, a knowledge possessed by very few obstetricians. In his belief, the crux of the position would be found under the following headings: (1) The study of the woman before labor. (2) A positive appreciation of the position and presentation of the fetus and its relation to the pelvis. (3) The constant control of the fetal heart's action and the maternal condition. (4) Interference only when there were positive indications which warranted such interference. In estimating the safety of the unborn child, the constant regularity of the heart's beat was of undoubted value; while as regarded the mother, the pulse and temperature played a prominent part. One should never interfere with labor, save (1) when the mother gave symptoms of beginning to be exhausted or (2) there was exhaustion of the fetus. In either case labor must be ended in order to save the fetus. In such an emergency as a sudden irregularity of the fetal pulse with a discharge of meconium from a woman whose os was hardly distended, he asked whether one could operate quickly enough to deliver her of a living child without producing dangerous lesions. He thought not. He thought that when an examination revealed a neurotic or spastic condition of the os, with sharp edges, chloral should be given in divided doses, up to three grammes. In cases in which during the first stages, there was danger of lagging pains and exhaustion, Dr. Marx had frequently found opium of good service.

Dr. J. WATSON MARTINDALE, of Camden, said that in those who had not had the test of previous labor, labor might go on without interference, even if there was considerable pelvic deformity. In those that had had the test of previous labor, he would unhesitatingly suggest Cesarean section. In regard to the number of lacerations occurring in primiparæ, there were more than physicians usually thought, as they often examined the skin perineum without inspecting the vagina. He could truthfully say that the number of lacerations in women delivered before his arrival was no greater than in those delivered when he was present. He had frequently felt the perineum tear while he was doing his best to prevent it. He described the technique of pubiotomy, and said that the indications were a true conjugate of three inches and a half, and possibly three and a quarter. He did not agree with Dr. Marx that the subject of obstetrics was insufficiently taught in the medical schools. On two occasions Dr. Martindale had found it necessary to induce labor on account of uncontrollable vomiting in pregnancy. He had found calomel, in small, divided dose, of great benefit in threatened eclampsia. He thought that frequent examinations tended to produce sepsis, and that to apply the forceps before there was complete dilatation of the os was likely to result in laceration of the cervix. On the other hand, it was possible to be too tardy in applying it. In regard to postural treatment, the transverse diameter was materially increased by laying the woman on her back with her knees flexed on her thighs and her thighs on her abdomen, and instructing her to pull on her knees. When a woman was suffering from severe labor pains and there was

slow dilatation of the os, he gave her enough morphine to deaden the pain.

Dr. ELLIS W. HEDGES, of Plainfield, wondered whether methods for the quick delivery of women were not often intended more for the convenience of the operator than for the good of the patient; although he thought that one should interfere before the mother was so exhausted by the pain, shock, and fatigue that convalescence would be indefinitely prolonged. The nervous type of women, he said, often suffered with uterine inertia. In case of an occipito-posterior presentation the only thing to do was to pull pretty hard. In the case of rachitic dwarfs, nothing but Cæsarean section should be attempted. If the diagnosis of placenta prævia was made early, labor should be brought on before the seventh month, but if the patient had gone to full term, one should at once plug the cervix and do Cæsarean section. In cases of eclampsia the uterus should be emptied at once. If the cervix was hard, this should be done by Cæsarean section.

Dr. EDWARD J. ILL, of Newark, did not approve of vaginal Cæsarean section. He had seen, also, several cases of incurable vesicovaginal fistula due to high forceps delivery. He thought that the majority of patients with deep cervical tears remained invalids for the rest of their lives. In placenta prævia, when the bag of membrane could be felt anywhere in the vagina, it was not necessary to resort to prompt Cæsarean section. If eclampsia came on in the seventh or eighth month, Cæsarean section should be done, but not the vaginal Cæsarean section, whose results had been very disastrous.

Dr. RICHARD C. NORRIS, of Philadelphia, thought that the importance of internal pelvimetry had been exaggerated; but he thought also that no physician had a right to attend a primipara without a knowledge of the size and shape of her pelvis, or to attend a multipara who had had a previous difficult delivery without having studied the case from the standpoints of her previous labor and present physical condition. It was impossible to learn accurately these measurements without the administration of an anæsthetic. He made an appeal for a more general recognition of the value of induced labor, and said that the time would come when every woman with a conjugate diameter of four and a half centimetres or less would be submitted to Cæsarean section. He had had great success in saving many patients from the major operation by means of induced labor, the practice of which also reduced the number of cases of forceps delivery and version. He agreed that the forceps should not be applied to the unengaged head as a general rule; but qualified this by saying that it should not be done unless one knew the pelvic diameter and the woman had been in labor pains for two or three hours. In a difficult forceps operation the patient should be kept profoundly anæsthetized during the third stage, and allowed to come out of ether just before the final delivery, her uterus then being strengthened by a dose of ergot. He did not think that quinine had any more effect than a glass of wine, acting as a general stimulant. In regard to placenta prævia, he had yet to see a cervix so rigid and tight as not to permit him to pass the index finger readily through the cervix. He believed that in such cases Cæsarean

section had an exceedingly narrow field. In eclampsia, he thought that vaginal Cæsarean section was not indicated in all cases. It should be performed in cases in which the condition came on without warning.

Dr. DAVIS said that if the test was made it would probably be found that large numbers of lacerations occurred in both the anterior and the posterior segment. Failure to close lacerations in the anterior segment resulted in subsequent prolapse of the urethra, dystocia, and other minor troubles. If uterine inertia existed, it should be treated before delivering the patient. He was not in favor of giving ergot until the womb had been emptied, but he approved of the use of strychnine. Section should be done in placenta prævia only when there had not been severe hæmorrhage, when the child was viable, and when hospital facilities were at hand. Eclampsia tended to cure itself. He had not done vaginal Cæsarean section, which he considered a dangerous operation. He considered the old treatment of placenta prævia satisfactory, if one did not care about the child. In taking the pelvic measurements, he thought it well to measure across the two processes of the ischia, and also the intertuberosity distance. He considered elective surgery the surgery of the future.

Medical Expert Testimony.—Dr. T. P. PROUT, of Summit, inveighed against the present methods of judicial procedure, and said that unless one's knowledge dated from the seventeenth century, one was of very little importance in a court of law. The venerable question always propounded whenever insanity was in question ignored completely the advances that had taken place in two centuries of medical practice. The slow administration of justice was a characteristic of bad civilization, for it meant a costly administration. He did not consider our penal system adapted to cure criminals, who were always abnormal. He hoped that the day might come when an improvement would be made in the present legal system, and the prison would become the laboratory of an active science of jurisprudence. He stated that any three physicians who had had training in a certain department would be able to come to an agreement, provided they had access to all the facts, and suggested a plan by which the medical experts should be appointed in such a way as not to be bound to testify in favor of one side or the other.

Dr. BRITTON D. EVANS, of Graystone Park, said that medical experts could not be criticized for not always being harmonious, as the eminent men who had just spoken on the subject of obstetrics did not seem to be by any means altogether agreed. He stated that the objection to changing the system of employing medical expert witnesses was that the Constitution of the United States guaranteed to an accused citizen the right to summon experts from anywhere that would tend to help his cause. Men appointed as experts with a life tenure would not always agree. That a life tenure did not insure agreement had been shown by the Dred Scott decision.

Dr. ILL thought that when the day came that there would be no difference of opinion among doctors there would be no physical body. He said that Dr. Prout's paper should be widely circulated among

medical men, so that honest members of the profession might endeavor to have revised this cumbersome machinery of the law. He believed that if the asking of hypothetical questions could be abolished this would constitute a long step in the right direction. He stated that no countries except England and the United States allowed witnesses to be insulted by the attorneys without rebuke.

Pathognomonic Signs Relating to Appendix Localization.—Dr. A. J. WALSHIED, of Union Hill, stated that, besides pain, muscular rigidity, tenderness, swelling, etc., there were a number of signs that, if carefully studied, could localize the appendix, its direction, and in a great many instances its pathological state and prognosis. He considered the normal position of the appendix, and how it could be placed in these various positions. The positions of the appendix were: (1) The intrapelvic, with the development of the bladder, rectal, and uterine annexa symptoms; (2) near the iliopsoas muscles, producing leg symptoms; (3) the position upward, outward, and backward, producing lumbar pains in chronic cases; and (4) upward and inward, or under the liver, producing respiratory symptoms. He touched upon the importance of pain in relation to localization, particularly in outward and upward locations, or in inward, pointing toward the median line. Tenderness, as an important factor in localization was also referred to, as well as the significance of McBurney's point, in making a fine diagnosis of the position and condition of the appendix. The importance of gastrointestinal disturbances was next described. Pain and tenderness he considered of value in showing the degree of inflammation.

Dr. GEORGE W. J. SOMMER, of Trenton, said that the diagnosis in most cases depended upon the position occupied by the appendix. Those in which the tip pointed toward the other side of the colon were favorable for operation, while those in which it turned inward were more serious. He considered a study of the blood counts an aid in the diagnosis of appendicitis, particularly a differential leucocyte count. He thought that the patients should be operated on as soon as the diagnosis was made, and considered a dose of castor oil a very good temporary expedient in cases of doubt. He believed, also, in the starvation plan of treatment in so called inoperable cases. He had seen patients thus treated live long enough to be operated on successfully at a subsequent time.

Dr. THEODORE SENSEMAN, of Atlantic City, did not believe the direction in which the appendix pointed to be of any practical value. He thought that the first twenty-four hours in an appendix case would be better consumed in getting the patient ready to be operated upon than in taking a leucocyte count. If one found the base of the appendix, it was easy enough to reach the tip.

Dr. J. M. RECTOR, of Jersey City, referred to cases in which the appendix was sympathetically connected with the uterine annexa, primary inflammatory changes in one of these being associated with secondary inflammatory changes in the other.

Dr. WALSHIED said that it was difficult sometimes to convince people of the necessity of an early operation in appendicitis, and that in such cases one could wait and see whether, at the end of twenty-

four hours, the acute pain was still present, meanwhile making the blood count and giving large doses of castor oil. While he admitted that the location of the tip of the appendix was not important to the general practitioner, he thought it very advantageous for the surgeon to know.

(To be concluded.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Systematic Relationships of the Coccaceae, with a Discussion of the Principles of Bacterial Classification. By CHARLES EDWARD AMORY WINSLOW, Assistant Professor of Biology at the Massachusetts Institute of Technology, and ANNE ROGERS WINSLOW. New York: John Wiley & Sons, 1908. Pp. x-300. (Price, \$2.50.)

The authors have done a stupendous amount of work, for which they deserve the thanks of scientific workers generally. Isolating and studying the characteristics of 500 different strains of *Coccaceae* requires enormous patience and the exercise of a high degree of technical skill. The present volume, moreover, presents much more than this, for the results have been analyzed with a view to the centres about which each character varied in the series as a whole and with relation to the general correlation between the different characters. The authors conclude that bacterial groups can be defined only by a study of the numerical frequency of various characters in a large series of cultures. On this basis two groups are distinguishable in the *Coccaceae*, one primarily parasitic, and the other saprophytic. The groups differ in morphology, staining reactions, cultural characters, and biochemical powers. Within these two subfamilies are eight minor groups which seem to merit generic rank. Each is marked by the correlation of several apparently independent characters, and the eight form, in general, a more or less linear series, connecting such purely parasitic forms as the meningococcus with the saprophytic cocci so common in the air. Within each genus are included three or four distinct specific types, the preponderating frequency defining the central types in each case.

The book deserves careful study by bacteriologists. A wider recognition of the principles here enunciated would prevent the endless confusion caused by the careless reporting of alleged new species.

Arteriosclerosis: Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By LOUIS M. WARFIELD, A. B., M. D., Instructor in Medicine, Washington University, Medical Department, etc. With an Introduction by W. S. THAYER, M. D., Professor of Clinical Medicine, Johns Hopkins University. Eight Original Illustrations. St. Louis: C. V. Mosby Medical Book Company, 1908. Tp. xvii+165.

In this modest volume the entire story of arteriosclerosis is well told in a simple, graphic manner which cannot fail to make a lasting impression upon the reader. The very great importance of an early diagnosis in this as in other chronic diseases is forcibly presented. "To that end people should be taught that at least twice a year they should be carefully

examined." In this statement we fully concur, especially in its application to men and women after the age of forty years. It is an extraordinary fact that most people take better care of their houses and their teeth than they do of their hearts, kidneys, and lungs. The condensed style of Dr. Warfield's book lends itself admirably to quotation. Thus, in the chapter on prophylaxis nothing could be truer than the following: "Diversification of interests is as a rule restful. That is what every man who reaches adult life should aim at. Hobbies are sometimes the salvation of men. They may be ridden hard, but even then they are helpful in bearing one completely away from daily cares and worries. The man who can keep the balance between his mental and physical work is the man who will, other things being equal, live the longest and enjoy the best health."

Die Wurmfortsatzentzündung. Eine pathologisch-histologische und pathogenetische Studie. Von L. ASCHOFF, Professor der allgemeinen Pathologie und pathologischen Anatomie, Freiburg i. B. Mit 18 lithogr. Tafeln und 22 Abbildungen im Text. Jena: Gustav Fischer, 1908. Pp. 114.

We have here a critical pathological study of the different forms of appendicular disease, based upon nearly a thousand cases, six hundred of which have been made the subject of minute and rigorous investigation. Interesting and somewhat novel views as to etiology and treatment are advanced. The author dissents emphatically from the idea so generally held that appendicitis often begins as a mild general catarrhal inflammation. It is always an infection of enterogenous origin, and the primary local lesion may usually be detected and recognized at the bottom of one of the furrows or sulci normally present in the mucous membrane. The usual infective agent is a diplococcus. There is no pathological evidence that the colon bacillus is ever a cause of appendicitis, and colitis when present can only be regarded as an accidental accompaniment of chronic or recurring disease of the appendix. The opinion is expressed that very many cases would do, well with less surgical treatment than is now the fashion. This rather unorthodox and dangerous view is supported, the writer thinks, by the fact that from three fourths to four fifths of the bodies of all persons dying after the age of sixty or seventy present evidence of appendicitis some time during life.

Pathologie und Therapie der Perityphlitis (Appendicitis)
Bearbeitet von Dr. EDUARD SONNENBURG, geheimer Medicinalrat, ordentlicher Honorar-Professor an der Universität, Director der chirurgischen Abteilung des städtischen Krankenhauses Moabit in Berlin. Sechste umgearbeitete Auflage. Mit 38 Abbildungen und farbigen Kurven. Leipzig: F. C. W. Vogel, 1908. Pp. ix-282.

Previous editions of this well known and authoritative work of Professor Sonnenburg's have been favorably reviewed in this journal as they have appeared from the press. In this, the sixth edition, a new series of illustrative cases has been added. There is a comprehensive discussion of the significance of leucocytosis, appendicitis in childhood and during pregnancy is fully considered, and tuberculosis and cancer of the appendix are described. Of nonoperative procedures, the castor oil treatment is the most satisfactory, and is of great value in aiding the surgeon to determine in what cases not to operate. The latest technique of the various operations is fully described. In the interval operation the author pre-

fers blunt separation of the muscular layers and embedding the stump of the appendix in the wall of the cæcum. He has a good word for stovaine spinal anesthesia, which he has employed in several hundred cases, and is even inclined to regard with favor scopolamine-morphine narcosis in selected cases.

Atlas der rectalen Endoskopie. Von Dr. ARTHUR FOGES, Wien. 1. Teil. 40 mehrfarbige Lichtdruckbilder auf 20 Tafeln und 7 Abbildungen im Texte. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. iv-62. (Price, Mk. 14.)

After a short historical sketch in which he refers us to Hippocrates's work on hæmorrhoids, the author gives a description of his own specula and their uses, the mode of inspection, the position of the patient, etc. The text, with one page of bibliography, takes up only seventeen pages. The forty colored illustrations, with the explanation of the figures, are the main part of the book. The illustrations are very well executed. The paintings were done by Mr. Wenzel, and represent well selected cases which will be a guide for the general practitioner to make a proper diagnosis in cases of his own. A second part is to follow soon.

Untersuchungen über das Atrioventrikulärbündel im menschlichen Herzen. Von Privatdozent Dr. J. G. MÖNCKEBERG, I. Assistent am patholog.-anatom. Institut der Universität Gießen. Mit 10 Tafeln und 4 Abbildungen im Text. Jena: Gustav Fischer, 1908. Pp. vi-329.

Laboratory workers in histology, gross anatomy, or physiology will find much interesting material for study in this carefully wrought out monograph of Dr. Mönckeburg's on the auriculoventricular bundle of His. The normal structure, course, and relations of this group of muscular fibres, so important in coordinating the auricular and ventricular contractions of the heart, are fully described. Preparations from the human embryo and from different periods of postnatal life and pathological specimens from cases of many different diseases, both with and without cardiac lesions, including the dissociation of heart block and the Stokes-Adams syndrome, have been minutely studied. The technical methods used in sectioning and staining have been given in sufficient detail to be followed by others. The findings of His, Braeunig, Retzer, Tawara, Aschoff, and others as to the great physiological and clinical significance of this new structure have been corroborated and added to by Dr. Mönckeburg. His treatise may be justly regarded as an authoritative work on the subject. The value of the text is enhanced by numerous beautiful illustrations, including plates in color.

MEDICOLITERARY NOTES.

The face of Horace Fletcher gazes sadly from the pages of the September *Ladies' Home Journal*, as if meditating upon a generation of vipers that insists upon swallowing its food almost whole. The editor expresses his belief that American young women are too fidgety, and kindly offers, in the latest fashion, a little "psychotherapy." He believes that if they will earnestly say to themselves such words as calmness, peace, tranquillity, and Philadelphia, they will find themselves much soothed and calmed; whereas, if they unwisely declaim such vocables as frightful, crazy, killing, Tenderloin, and Great White Way, they are likely to become very

tense and agitated. We believe that rustling around after mother with the broom and dust rag is good, too; at least, it is fine for mother.

The September magazine number of the *Outlook* contains the beginning of an article, *The Origin and Evolution of Mental Healing*, by Addington Bruce, illustrated with reproductions of old cuts; an editorial on *The Defective Home and Juvenile Delinquency*; another on *Progress against the Great White Plague*; and reminiscences, apparently personal, of Oliver Wendell Holmes, in which his personal and social qualities are dwelt upon.

According to Herodotus, each Egyptian was counselled to make monthly use of emetics, purgatives, and clysters, as it was believed that most diseases originated in the intestines; intemperance and functional irregularities of the alimentary canal were at the bottom of ill health. And yet, one of our latest pathological fads, intestinal intoxication, is thought to be of very modern inspiration.

Among the Babylonians and Chaldeans it was the custom to carry persons attacked with any disease into a public place where passers by might see them. The latter, if they had suffered personally from any disease on view, or had witnessed similar cases, were expected to stop and give advice. This kindly custom has persisted to this day, as any one can prove for himself if he will but mention among friends that he is the victim of an influenza or a headache. The interesting point is that most of the remedies suggested will be of an origin quite as ancient as the Babylonian and Chaldean civilizations.

Æsculapius was always represented with a staff, a symbol of the support needed by the sick; around it was entwined the ancient symbol of eternity, the serpent. Throughout succeeding ages physicians carried a stick, which, during the Middle Ages was usually surmounted by a small metal box containing aromatic herbs which the doctor sniffed, as he contemplated his patient, to counteract infection and the universal stench of the sickroom then prevalent. Later on, the stick shrunk into a cane, and during the regency had above the handle an eye glass, a survey of the invalid through which must have conferred an ineffable look of wisdom and profundity. In early Victorian days a climax of bad taste was reached in the use of carved ivory or bone skulls as cane handles, an example of the ethical advertising of the period. Finally, the doctor's cane has followed his black coat and high hat into oblivion and, more and more, must the practitioner rely upon his brains for prestige.

Miscellany.

Left Handedness in the German Army.—A short time ago a military surgeon presented to the army medical society of Germany the results of his studies on the occurrence of left handedness in the army. He examined 300 left handed soldiers. At least half of these came from families in which this peculiarity also occurred in other members; it appears to be twice as frequent among males as among females. Enuresis, feeble mindedness, stuttering, and other disturbances of speech occur much more frequently among left handed than among right

handed people. The frequency of left handedness is greatest among the recruits and diminishes with the length of service. The speaker reached the conclusion that the left handed were both physically and mentally less suited to military service than the right handed.—*Journal of the American Medical Association.*

Medicine in China.—Medical missionaries in China say that the natives will bear without flinching a degree of pain from which the stoutest of us would shrink in terror. A woman in Shao-wu, afflicted with an ulcer of the leg, was treated by a native "doctor." One day he came to the mission hospital to show the physician in charge a "string" which he calmly announced he had pulled from the wound. It was the sciatic nerve! To people suffering from such barbarous methods, and to whom anesthetics are unknown, the merciful methods of foreign doctors in the mission hospitals seem like miracles.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ended September 24, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Illinois—Peoria.....	Aug. 1-31.....	9	
Indiana—Fort Wayne.....	Sept. 4-11.....	3	
Louisiana—New Orleans.....	Aug. 28-Sept. 4.....	1	
Missouri—St. Louis.....	Sept. 4-11.....	1	
Ohio—Dayton.....	Sept. 4-11.....	5	
<i>Smallpox—Insular.</i>			
Philippine Islands—Manila.....	July 24-31.....	1	
<i>Smallpox—Foreign.</i>			
Brazil—Pernambuco.....	July 1-31.....	27	
Chile—Valparaiso.....	Aug. 14-21.....	Present	
China—Amoy.....	July 1-31.....	9	Vicinity
China—Nanchang.....	July 31-Aug. 14.....	2	
China—Shanghai.....	July 31-Aug. 7.....	1	
Ecuador—Ensenada.....	Aug. 10.....	Epidemic	
Ecuador—Guayaquil.....	July 1-31.....	4	In vicinity
France—Paris.....	Aug. 14-21.....	2	
India—Calcutta.....	July 31-Aug. 7.....	2	
India—Rangoon.....	July 31-Aug. 7.....	2	
Italy—Naples.....	Aug. 22-29.....	17	
Java—Batavia.....	July 31-Aug. 7.....	1	
Mexico—Monterrey.....	Aug. 29-Sept. 5.....	3	
Mexico—Veracruz.....	Aug. 29-Sept. 5.....	2	
Peru—Mollendo.....	Aug. 30.....	Present	
Portugal—Lisbon.....	Aug. 29-Sept. 5.....	14	
Russia—Moscow.....	Aug. 14-21.....	3	
Russia—Odessa.....	Aug. 7-14.....	14	
Russia—Riga.....	Aug. 21-28.....	9	
Russia—St. Petersburg.....	Aug. 7-14.....	40	
Russia—Vassaw.....	July 10-17.....	11	
Spain—Barcelona.....	Aug. 21-28.....	6	
Spain—Vigo.....	Aug. 14-28.....	Present	
Turkey—Bagdad.....	July 17-Aug. 4.....	Present	
<i>Yellow Fever—Foreign.</i>			
Brazil—Manaos.....	July 7-14.....		
Brazil—Lima.....	Aug. 1-14.....	9	
Brazil—Pernambuco.....	July 1-14.....	6	
Ecuador—Guayaquil.....	Aug. 14-17.....	3	
Mexico—Mexico.....	Sept. 3-10.....	2	
Venezuela—Maiquetia.....	Aug. 25.....	In vicinity	
<i>Cholera—Insular.</i>			
Philippine Islands—Manila.....	July 24-31.....	1	
Philippine Islands—Pescadore.....	July 24-Aug. 7.....	78	191
<i>Cholera—Foreign.</i>			
China—Amoy.....	Aug. 31-Aug. 7.....	1	
China—Nanchang.....	Aug. 31-Aug. 7.....	Present	
China—Shanghai.....	Aug. 31-Aug. 7.....	Present	
India—Calcutta.....	July 31-Aug. 7.....	7	
India—Madras.....	Aug. 7-14.....	7	
India—Rangoon.....	July 31-Aug. 7.....	3	
Madagascar—Tahiti.....	Aug. 7-14.....	1	
Netherlands—Amsterdam.....	Sept. 10.....	1	

Places.	Date.	Cases.	Deaths.
Netherlands—Dirksland.....	Sept. 20.....	1	
Netherlands—Middelburg.....	Aug. 28-Sept. 4.....	1	
Netherlands—Rotterdam.....	Aug. 20-Sept. 4.....	34	14
Netherlands—Th. kn.....	Aug. 28-Sept. 4.....	1	
Netherlands—Utrecht.....	Aug. 28-Sept. 4.....	1	
Netherlands—Vlaardingen.....	Aug. 28-Sept. 4.....	1	
Russia—General.....	Aug. 21-28.....	573	243
Russia—Moscow.....	Aug. 14-21.....	1	
Russia—Riga.....	Aug. 21-28.....	17	8
Russia—St. Petersburg.....	Aug. 22-29.....	189	64
Sweden—Stockholm.....	Aug. 12.....	1	Imported

Plague—Foreign.

Chile—Iquique.....	Aug. 22.....	4	In lazaretto
China—Amoy.....	July 31-Aug. 7.....	19	31
China—Amoy (in quarantine).....	July 1-3.....	19	2
China—Hongkong.....	July 24-31.....	2	2
Ecuador—Guayaquil.....	Aug. 14-21.....	2	2
Egypt—General.....	July 29-Aug. 5.....	9	2
Egypt—Alexandria.....	Aug. 5.....	1	
India—General.....	July 31-Aug. 7.....	1,287	938
India—Calcutta.....	July 31-Aug. 7.....	12	
India—Rangoon.....	July 31-Aug. 7.....	20	
Japan—Kobe.....	Sept. 13.....		Present.

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 22, 1909:

BROWNE, R. W., Acting Assistant Surgeon. Granted sixteen days' leave of absence from September 16, 1909.

FURLAND, B. W., Acting Assistant Surgeon. Granted fourteen days' leave of absence from September 13, 1909.

CARLTON, CHARLES G., Pharmacist. Relieved from duty at Cairo, Ill., and directed to proceed to Detroit, Mich., and report to the medical officer in command for duty and assignment to quarters.

CURLEY, C. P., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from September 25, 1909.

DUFFY, FRANCIS, Acting Assistant Surgeon. Granted three days' leave of absence from September 21, 1909.

DYMAN, N. J., Acting Assistant Surgeon. Granted sixteen days' leave of absence from September 13, 1909.

FROST, W. H., Passed Assistant Surgeon. Granted one day's leave of absence, September 13, 1909, under paragraph 191, Service Regulations.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Reassigned to duty in the Hygienic Laboratory, to date from October 31, 1908.

ILTIS, G. W., Pharmacist. Upon the arrival of Pharmacist Charles G. Carlton, directed to proceed to Boston, Mass., and report to the medical officer in command for duty and assignment to quarters.

KEEN, W. H., Pharmacist. Granted three days' leave of absence from September 7, 1909, under paragraph 210, Service Regulations.

LAUNDY, C. H., Passed Assistant Surgeon. Granted three days' leave of absence en route to station.

LIGHT, S. D. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 5, 1909.

MARSH, W. H., Acting Assistant Surgeon. Granted thirteen days' leave of absence from October 2, 1909.

MASON, WILLIAM C., Acting Assistant Surgeon. Granted five days' leave of absence from October 4, 1909.

ROBERTSON, HERMAN, Acting Assistant Surgeon. Granted fourteen days' leave of absence from September 17, 1909.

RYDER, L. W., Pharmacist. Granted four days' leave of absence from September 21, 1909, under paragraph 210, Service Regulations.

SEAVEY, L. T., Acting Assistant Surgeon. Granted three days' leave of absence from September 15, 1909, under paragraph 210, Service Regulations.

SMALL, E. M., Acting Assistant Surgeon. Granted fourteen days' extension of annual leave on account of sickness from August 30, 1909.

THURNTON, M. J., Acting Assistant Surgeon. Granted thirteen days' leave of absence from October 1, 1909.

WARNER, H. J., Assistant Surgeon. Granted five days' leave of absence from September 25, 1909.

WETMORE, W. O., Acting Assistant Surgeon. Granted one day's extension of annual leave on account of sickness from September 4, 1909.

WHITE, J. H., Surgeon. Granted seven days' leave of absence from September 18, 1909, under paragraph 189, Service Regulations.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 25, 1909.

ARTUND, F. B., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division, and will sail on December 15th for San Francisco.

BARNEY, C. M., Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

BORDEN, W. B., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Bayard, N. M., for duty at the Army General Hospital.

BROOKS, W. H., Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

BROWNE, R. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Monroe, Va., for duty.

COHEN, H. M., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Rodman, Mass., for duty.

CONZELMANN, F. J., First Lieutenant, Medical Reserve Corps. Relieved from duty at present station and will proceed to San Francisco to sail November 5th, for Manila, P. I.

CRAIG, C. F., Captain, Medical Corps. Relieved from duty as attending surgeon at New York City, and ordered to Washington, D. C., for duty as assistant curator, Army Medical Museum.

DAVIS, A. D., First Lieutenant, Medical Corps. Relieved from duty at Fort Lawton, Wash., and ordered to Vancouver Barracks, Wash., for duty.

DAWR, C. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Thomas, Ky., for duty.

DE WITT, WALLACE, Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

DOUGHERTY, J. C., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division, and will sail December 15th for San Francisco, Cal.

DUTCHER, B. H., Major, Medical Corps. Granted leave of absence for fifteen days.

FULLER, L. A., Major, Medical Corps. Granted an extension of one month to his leave of absence.

GRIFFIN, First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Howard, Md., for duty.

HALLETT, H. J., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Totten, N. Y., for duty.

HARRIS, H. S. T., Lieutenant Colonel, Medical Corps. Ordered to assume temporary charge of Medical Supply Depot, at San Francisco, Cal.

HART, J. W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, at the expiration of which he will stand relieved from active duty in the Medical Reserve Corps.

HETERICK, R. H., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Oglethorpe, Ga., for duty.

HUGHES, M. E., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division, and will sail December 15th for San Francisco, Cal.

JONES, G. B., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.

KEAN, J. R., Lieutenant Colonel, Medical Corps. Detailed to attend the meeting of the American Public Health Association at Richmond, Va., October 19th, to 22d.

KERSHNER, W. E., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed from Waterville, Me., to Fort Hancock, N. J., for duty.

LAVENTURE, L. A., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort D. A. Russell, Wyo., for duty.

LEMMON, ROBERT, First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station and will proceed to San Francisco, to sail November 5th for Manila, P. I.

LITTLE, W. L., Captain, Medical Corps. Ordered from Adams, R. I., to Fort Ontario, N. Y., for temporary duty.

LOWE, T. S., First Lieutenant, Medical Reserve Corps. Relieved from duty on the transport *Burnside*, and ordered to duty at the Presidio of Monterey, Cal.

LYON, W. C., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort DuPont, Del., for duty.

MALONEY, J. B., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hancock, N. J., and ordered to duty at Seattle, Wash., on the transport *Burnside*.

MARROW, C. E., Major, Medical Corps. Relieved from duty at the Presidio of San Francisco, Cal., and ordered to Fort D. A. Russell, Wyo., for duty.

MCANDREW, P. H., Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

MILTENBERGER, V. E., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Riley, Kans., for duty.

NORTHINGTON, E. G., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort McPherson, Ga., for duty.

SHARPE, H. H., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Jay, N. Y., for duty.

SHERWOOD, J. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and to proceed to Fort Williams, Me., for duty.

THORNBURGH, R. M., Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

TRUBY, A. E., Major, Medical Corps. Granted leave of absence for one month.

WADHAMS, S. H., Major, Medical Corps. Granted leave of absence for four months, when relieved at Fort Shafter, H. T.

WATKINS, V. E., First Lieutenant, Medical Reserve Corps. Granted leave of absence for fifteen days; relieved from duty at his present station and will proceed to San Francisco to sail November 5th, for Manila, P. I.

WIGGIN, R. H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.

The following captains in the Medical Corps have been ordered to report at Washington, D. C., for examination for promotion: J. A. Murtagh, G. M. Van Poole, W. W. Reno, G. H. R. Gosman, C. E. Koerper, J. H. Allen, R. U. Patterson, R. E. Noble, J. W. Van Dusen, R. B. Grubbs, and V. E. Sweazy.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 25, 1900:

BASS, J. A., Acting Assistant Surgeon. Ordered to instruction at Naval Medical School.

CRANDALL, R. P., Surgeon. Ordered to the *Hancock*.

DONELSON, M., Assistant Surgeon. Detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the Naval Recruiting Station, Nashville, Tenn.

FAUNTLEROY, A. M., Passed Assistant Surgeon. Ordered to the *Indiana* and additional duty in connection with the *Lancaster*.

FLINT, J., Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the Naval Hospital, Navy Yard, Boston, Mass.

HUNTINGTON, E. O., Surgeon. Ordered to the Naval Recruiting Station, Chattanooga, Tenn.

REED, E. U., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Nashville, Tenn., and ordered to duty at the Naval Hospital, Norfolk, Va.

SEAMAN, W., Passed Assistant Surgeon. Ordered to the Naval Hospital, Navy Yard, New York, N. Y.

SUTTON, D. G., Assistant Surgeon. Detached from the *Vestal* and ordered to the *Des Moines*.

WILLIAMS, R. B., Surgeon. Commissioned a surgeon from October 11, 1900.

The following acting assistant surgeons have been detached from the places opposite their names and ordered to instruction at the Naval Medical School, Washington, D. C.:

BLOEDORN, W. A., detached from the Naval Medical School Hospital.

CECIL, A. B., detached from the Naval Hospital, New York, N. Y.

CONNOR, W. H., detached from the Naval Hospital, Norfolk, Va.

FRENCH, G. R. W., detached from the Naval Hospital, Newport, R. I.

HART, S. D., detached from the Naval Hospital, New York, N. Y.

IRVINE, W. L., detached from the Naval Hospital, Boston, Mass.

JENKINS, H. E., detached from the Naval Hospital, Norfolk, Va.

JOHNSON, J. T., detached from the Naval Hospital, Philadelphia, Pa.

McMULLIN, J. J. A., detached from the Naval Hospital, Newport, R. I.

PHILLIPS, E. W., detached from the Naval Hospital, New York, N. Y.

RIDDICK, W. J., detached from the Naval Station, Charleston, S. C.

ROBERTSON, G. E., detached from the Naval Hospital, Boston, Mass.

THOMAS, G. E., detached from the U. S. S. *Franklin*.

WALTON, D. C., detached from the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Born.

RENO.—In Fort McKinley, Portland, Maine, on Saturday, September 18th, to Captain William W. Reno, Medical Corps, United States Army, and Mrs. Reno, a daughter.

Married.

BASTIANELLI—PATON.—In Munich, Germany, on Monday, September 20th, Dr. Giuseppe Bastianelli and Mrs. Marion Paton.

DAVIES—DOUGLAS.—In East Orange, New Jersey, on Monday, August 9th, Dr. George J. Davies and Miss Florence M. Douglas.

ERLER—VLEIT.—In New Brunswick, New Jersey, on Wednesday, September 13th, Dr. Eugene W. Erler, of Newark, and Miss Lillian Irene Vleit.

HOGAN—HARLEY.—In Philadelphia, on Thursday, September 23d, Dr. John A. Hogan and Miss Anna M. Harley.

ROBERTS—LOWE.—In Roxbury, Massachusetts, on Wednesday, September 15th, Dr. Frederick Roberts, of Cleveland, Ohio, and Miss Etta May Lowe.

TOUSEY—BRINER.—In New York, on Tuesday, September 7th, Dr. Ralph Tousey and Miss Clara S. Briner.

STILLINGS—SMITH.—In Rockdale, Pennsylvania, on Monday, September 20th, Dr. F. E. Stillings, of Lenni, Pennsylvania, and Miss Anna Smith.

WATTS—PALMER.—In Colorado Springs, Colorado, on Tuesday, September 14, Dr. Henry C. Watts and Miss Marjorie Palmer.

Died.

ALLEN.—In Dallas, Texas, on Saturday, September 11th, Dr. J. S. Allen, aged seventy-seven years.

CABELL.—In Bowling Green, Kentucky, on Monday, September 20th, Dr. Benjamin Francis Cabell, aged sixty-two years.

DAMBACH.—In Buffalo, N. Y., on Wednesday, September 15th, Dr. John W. Dambach.

FELTON.—In Cartersville, Georgia, on Friday, September 24th, Dr. William H. Felton.

GAGE.—In Worcester, Massachusetts, on Friday, September 17th, Dr. Thomas H. Gage, aged eighty-three years.

HUBER.—In St. Louis, Missouri, on Wednesday, September 15th, Dr. Julius B. Huber, aged forty-nine years.

KRAUSS.—In New York, on Tuesday, September 21st, Dr. William C. Krauss, of Buffalo, aged forty-five years.

PALMER.—In Hartford, Michigan, on Saturday, September 18th, Dr. E. A. Palmer, aged sixty-two years.

PENNEY.—In McKeesport, Pennsylvania, on Tuesday, September 21st, Dr. James L. Penney, aged seventy-one years.

PIKE.—In Biddeford, Maine, on Monday, September 20th, Dr. Clifford L. Pike, aged fifty years.

SIEMONS.—In Baltimore, on Wednesday, September 22d, Dr. F. A. Siemons, aged seventy years.

STEVENS.—In Edgewood, Rhode Island, on Thursday, September 16th, Dr. Grenville Smith Stevens, aged eighty years.

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AN APPRECIATION OF EVOLUTION AND DARWINISM.

By W. B. KONKLE, M. D.,
Montoursville, Pa.

Evolution's Armageddon has been fought and won. To that element of dogmatism and bigotry, which was the hostile force the most virulent, may now be applied the lines Shakespeare makes Antony speak—

But yesterday, the word of Cæsar might
Have stood against the world; now, lies he there,
And none so poor to do him reverence.

Evolution has virtually been universally accepted and established. No opponent thereto is found of any weight or moment. Its triumph has been as complete as is ever the fortune of a principle of science. Vauvenargue says, "There can be no truth which may not, to some false mind, be matter of error."

Of the intellectually blind there are two classes—those who *can* not see, and those who *will* not see. The lack of sight in the one and in the other case is about equally hopeless. A darkey preacher in the South yet strenuously maintains the Ptolemaic cosmology. Vaccination and diphtheria antitoxine are opposed occasionally by some one bearing the degree of medicine. Certain obdurate intellects assume the attitude that if facts conflict with espoused doctrine it is so much the worse for the facts. In answer to an argument in favor of a less harsh theory of future punishment, the Scotch divine said, "No, Sir! Give me my hell."

Evolution has been subjected to modification; indeed, may yet require it. But that is common to all forward movement. Pioneers, pathfinders, "*wild brechend sich die Bahn*," must leave the work of straightening and leveling and evening to those who follow. One of the first impulses subsequent to the establishment of a generic truth is to stretch it to absurd lengths and breadths. Goldwin Smith several years ago called attention to this error as attaching to evolution at some points. But after all, expansion of the theory has exceeded retrenchment.

In very sooth, what a battle royal was that of evolution with its adversaries! Like another ten year siege of Ilium was it in magnitude and in far reaching interest, and for its vehemence and epic episodes. But for every Hector there was an Achilles. And for walls and towers that might withstand every shock of storm there were Ulysseses, whose

insight and wisdom proved irresistibly availing. At last the ancient stronghold was overthrown. It was a stubborn contest. But the wars of progress are usually hard fought. Suard says, "It is only by a communication slow and almost insensible, that the opinion of strong minds becomes that of the public." The struggle was a decisive one, however; and the victory was most signal. Fortunate, indeed, is it when an Issus marks the first stages of an advance movement of truth.

The forces which crossed swords with evolution may be arranged in two groups—conservative scientists and bigots. In the first class the evolutionists found foemen worthy of their steel. From such sturdy combatants Error gets his death stroke; but it is the best of omens for such challengers to stand in the path of Truth—let her but vindicate her credentials and give the countersign, and these, her own sentinels, respectfully clear the way for her—the more searching their scrutiny, the more hearty and unqualified their endorsement.

The second group, that of the bigots, ever does more harm to truth bearers than to truth itself—it is more the bane of scientists than of science. It did not spare the evolutionists. It never spared anyone faced toward freedom and the dawn. This group has a long and unbroken pedigree. It sent Andreas Vesalius to his death on a pilgrimage of penance. It exiled Descartes. It imprisoned Galileo. It burnt Bruno at the stake. It has invariably fostered error in pretending, likely in intending, to defend truth. Its venom for scientific investigation has been appalling. It conceives of science as a Frankenstein, creating monsters and turning them loose in the world—monsters which afterward can be neither controlled nor destroyed. It is narrowly and purlbly selfcentered. Said the Earl of Sandwich in the House of Lords, "What mean these words orthodoxy and heterodoxy which I hear?" Bishop Warburton, sitting near, whispered back: "Orthodoxy is *my* doxy; heterodoxy is another man's doxy." Bigotry is moribund but not dead. Superstition, which is its mother, still haunts mankind to a degree that staggers the thinker. Says a great French philosopher, "Who will be astonished at the errors of antiquity if he considers that yet today, in the most philosophical of the ages, many people of good mind would not dare to sit at a table with thirteen covers?"

Coming to a consideration of Darwin's relation to evolution, it may be said that evolution and Darwinism are not equivalent or commensurate terms. Evolution was before Darwin. Scientific evolution, or evolution on a scientific basis, dates back to

Goethe and Lamarck. Afterward came Saint-Hilaire and Chambers. Contemporary with Darwin was Wallace; and these two investigators bear about the same relation to each other as to priority, as do to each other Herschel and Leverrier.

Professor Osborn maintains that theoretical evolution goes back to the Greeks—to Aristotle and beyond. If such be the case then truly has evolution been the product of evolution.

How is it, then, that by common acceptance Darwinism and evolution are used synonymously and interchangeably? How is it that Darwinism *stands* for evolution?—is conceived to be its very essence?—so much so that before the Germans paused to consider that Darwin was an Englishman they had coined the teutonicism, "*Darwinismus*," to indicate evolution. It is, simply, because up to his day Darwin was the most scientific, the most thorough, the most exhaustive of the evolutionists. He was the *arch* evolutionist. But what gave more weight than aught else to his championship of the system was the adequate theory of the method of evolution which he originated.

So Darwinism is evolution and something more—it is evolution with a method: the best established method; the *only* established method. Of Darwin's theory of evolution Huxley said, "I really believe the alternative is, either Darwinism or nothing." In 1900 *The Outlook* propounded this question,— "What ten books have had the greatest influence upon the thought of the nineteenth century?" It was asked of these representative scholars and thinkers—James Bryce, H. M. VanDyke, President Hadley, T. W. Higginson, President Hyde, E. E. Hale, and President Hall. The only work which received the entire seven suffrages of these seven eminent gentlemen was Darwin's *Origin of Species*; the highest vote for any other author being four. What a tribute to this great name in science! And, yet, the same judgment would be rendered were the number of competent judges extended into the hundreds.

Lately the Darwinian principle has been subjected to keenest review and criticism. In Germany this departure has assumed in some instances the nature of real antagonism, and that, too, of a form unscientific and coarse. As an example may be cited Dennert's *Vom Sterbelager des Darwinismus*. The system has been declared inadequate. It has been said that Darwinism may be the explanation of the *death* of species; but not of the *origin* of species. Such critics seek to demolish without rebuilding—their efforts are destructive; and not constructive. And when the last word has been said in all probability the theory of natural selection will be still found evolution's most reliable key—the nearest approach to a *passé-partout*. And it may be confidently predicted that when the last blow has been dealt, the flag of Darwinism will be yet flying; over a domain perchance more circumscribed and more sharply defined, but, also, more surely and exclusively its own.

Any just appreciation of Darwinism must take note of the founder himself. Darwin is the archetype of the scientist. Even apart from his system, he is impressed deeply upon his age. Gentleness, patience, reverence, earnestness, untiring industry,

these all were constituent parts of him. Nature was his teacher at whose feet he sat as a child. Humility was his crowning virtue. This is uniformly found to be characteristic of largeness of mind and greatness of soul. Newton, at the close of his luminous career, likened himself to a boy that had been gathering pebbles and shells along the shore, while the ocean of truth spread out beyond him. Ruskin said: "I believe the first test of a truly great man is his humility." La Rochefoucauld declared that "humility is the altar upon which God wishes us to offer sacrifices to Him."

Darwin's other predominant trait was selfreliance. This feature of character upon the surface appears incompatible with humility; in reality it is not so. It is a quality necessary to explorers. It is not pride; it is not egotism; it is not audacity. It is simply the splendid fortitude that dares to walk alone. How expressive of noble manhood is the sentiment of that sturdy Norse warrior who, when asked by Saint Olaf in whom he believed, replied: "I believe in myself."

As signifying in a peculiar sense selfadequacy, personal autonomy, a certain microcosmic completeness, relevant are these lines of Persia's great Omar—

I sent my soul through the invisible,
Some letter of the After-life to spell;
And by and by my soul return'd to me,
And answer'd, "I myself am heaven and hell."

Says the Sage of Concord, "Selftrust is the essence of heroism." A contemporary British poet gives us these verses breathing a spirit worthy of a true son of the unconquerable Fire-giver—

It matters not how straight the gate,
How charged with punishments the scroll,
I am the master of my fate;
I am the captain of my soul.

No man ever walked by his own strength more truly than did Darwin.

Darwin was wholly and consistently a naturalist. Up to his time altogether too much veneration had been shown for the First Book of Moses as a treatise on cosmogony. Howsoever else truth may be revealed, the scientist is sure that the voice of Nature utters only truth, and the very truth. He knows that what is recorded in the rocks was written by the finger of God. He reads from the original tables of stone. Darwin gave his life to deciphering Nature's hieroglyphs.

Darwin always stood forth as the model of the true scientist in his attitudes and in his methods. He wrought by careful, exhaustive induction. It is to the patient watcher and waiter in her temple, perchance calmly standing with folded arms, that Nature unveils her mysteries.

Darwin had the judicial, critical spirit; the spirit of healthy skepticism, which Huxley says it is the duty of the scientist to manifest. Aye, way back in the crystal, hazy morning of Greek letters, keen witted Epicharmos wrote,— "Be sober and distrustful; these are the sinews of the understanding."

Darwin was cautious and moderate in utterance. A truth needs no blatant tongue to herald it that it may live and triumph. Let the lips of modesty but launch it in a whisper on the raging winds, and it will thrill the universe.

As the true scientist should, Darwin went straight on his way, answering ridicule and vituperation with facts—facts which are the words and arguments of science. For sole answer to the sophist who proved syllogistically that he could not move, Diogenes got up and walked around his tub.

Darwin had the courage to accept his own conclusions—was loyal to his own work. Why fear to press the question of the meaning of our discoveries in Nature's treasure stored labyrinths? Better to resolutely confront our findings, though all our ikons go down before them, than contemptuously to ignore them, or in dismay to thrust them from our sight. Safety and peace and promise are in the forward, not in the backward path. That, which seen but in part may appear grotesque or monstrous, when beheld as a symmetric and majestic entirety may prove a Memnon sweetly singing in response to the kisses of the dawn.

Coming to an appreciation of evolution itself, we may observe that it marvelously expands the horizon of science. It has extended the measure of time from thousand yeared ages to æons into whose abyss the years, Niagaralike, forever pour, and are lost forever. It has flung out the old boundaries and dimensions of the cosmos over spaces and along stretches in contemplation of which imagination, dazed and trembling, forgets her wings.

Also should it be prominently noted that evolution is a relentless iconoclast. Our Edgar Poe plaintively chants—

Science! true daughter of Old Time thou art!
Who alterest all things with thy peering eyes.—
Hast thou not dragged Diana from her car?
And driven the Hamadryad from the wood?—
Hast thou not torn Naiad from her flood?

Yes; evolution has broken idol after idol. But it has replaced them all with living forms fairer and more divine. Truth is, indeed, the supplanter of poetry. But what a glorious supplanter! Etymologically "poet" means "creator"; and it is the infinite creator that supersedes the finite creator. Poetry gave us a single charming world, and hung above it a star decked diadem. Truth crowns for us eternal night with a universe of flaming worlds. What we imagine must always be less by infinity than what is. For every thrilling fancy there exists a greater fact. Above the most exalted ideal towers a reality more sublime. Truth never unfolds unworthily of itself—never disappoints its disciples—never shames its worshipers.

Evolution's message is fraught with import for humanity and for human society. It gives us the idea of progression for that of retrogression; that of formation for that of reformation; that of generation for that of degeneration and regeneration. Inspired by the theme, rapt, enthused, a very high priest of nature, Emerson sings—

All before us lies the way;
Give the past unto the wind;
All before us is the day;
Night and darkness are behind.
* * *

Eden with its angels hold,
Love and flowers and coolest sea,
Is less an ancient story told
Than a glowing prophecy.

But here in this realm is evolution again seen to be the iconoclast—ruthlessly does it dash to pieces

the hero idol. LaRoche foucauld speaks truly when he says: "Whatsoever uncertainty and whatsoever variation may appear in the world, we remark there, nevertheless, a certain secret chain of events, and an order arranged from all time by Providence; from which it ensues that everything proceeds in its own rank, and follows the course of its destiny." This utterance by the illustrious Frenchman is simply a philosophic interpretation of evolution. And so the hero ceases to be an originator, an era maker, a moulder of destiny. He becomes merely an exponent, an organizer, a leader. In this light the dictum of the Sage of Concord, that "there is properly no history; only biography," is true merely of the surface movements of events; and does not apply to the deep, selfdetermined currents. As an index of the forces and processes controlling history making, more accurate is the thought of Michelet where he says, "After the victory, they have sought the hero, and they have found a whole people." So, except as the culmination of evolution, there is no revolution. From the purest and most typical evolution all traces of revolution are absent. Tennyson variously expresses this conception of the steady, constant development of plan in human affairs. In *The Princess* he says—

This fine old world of ours is but a child
Yet in the gocart. Patience! Give it time
To learn its limbs: there is a hand that guides.

In *Locksley Hall* are these lines—

Yet I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widen'd with the process of the suns.
* * *
Not in vain the distance beacons. Forward, forward let us range,
Let the great world spin forever down the ringing grooves of change.

In *Memoriam* sublimely closes with a calm confession of faith in—

One God, one law, one element,
And one far off divine event,
To which the whole creation moves.

Yes; evolution is a trustworthy and successful key to the finite problems confronting the scientist. It is the open-sesame to Nature's jeweled caverns. But evolution has its limitations. It is *only* a finite instrument. It has no charm or magic for the mysteries of infinity. And we touch the infinite everywhere. Man is the mere child of time; and time, itself, is but a minute isle in duration's limitless expanse. The tides of eternity are ceaselessly breaking on the narrowly confined shores that encircle us and hem us in. Frail creatures of a day, back and forth and around we move within the bounds of our restrictions, like captives in a prison pen. We hurl ourselves against our barriers, but we can not beat them down; we longingly gaze beyond them, but we can not overleap them; their compass may be enlarged, but they will never pass away.

As to *life*, specifically, of the ultimate questions thereto pertaining we know nothing, we can know nothing. They are inscrutable, unfathomable to mortal ken. Voicing the conclusions of the famous set of investigators which, with himself, included such masters as Tyndall and Pasteur, Huxley declared that "neither historically nor experimentally do we know anything about the origin of living forms." But even should the brilliant galaxy of

experimenters headed by Bastian, Loeb, and Burk force open the way toward the origin of life until the chasm between the inorganic and organic worlds were finally bridged; aye, even should the monists, Haeckel and his followers working from one side, and the psychic researchers from the other side, fill in the wide gulf separating matter and energy until it narrowed to a crevasse, and then were obliterated, even then the mystery of being would only have been traced one step farther back into the shadows of the unknown and the unknowable; yet would the secrets of life remain hid forever within the bosom of the infinite.

As of life so of death. In travail of soul Pascal cried out: "I see only infinities everywhere which inclose me as an atom, and as a shadow which endures but an instant without return. All that I know is that I am soon to die; but what I am most ignorant of is this same death which I know not how to evade."

Before these awful mysteries of life and death science halts and is mute. Here the scientist becomes the man. Here must a new guide be chosen.

As we have variously seen, evolution is the iconoclast—the fell destroyer of eidola. And just so has it made sad havoc of dogmatic theology in some of its phases. Unconsciously, inevitably man has conceived of God anthropomorphically. Five centuries before the Christian era Zeno of Citium remarked that "each nation attributes to the gods its distinctive national type; the gods of the Æthiopians being black, the gods of the Thracians fair and blue eyed." Some years later the Father of Tragedy makes Danaus say, speaking of a statue, "As for this, this is Hermes; but the Hermes of the Hellenes." From the Delphian oracle itself came the declaration that "the best religion is that of a man's own city." In modern times Vico expresses the thought "that the gods of the several peoples have virtually been the people themselves—their own conceptions." Goethe says that "we adore the immortals as if they were men—as if they did in the large what in the small the best of us do or wish to do." Michelet says that the gods "are arranged in classes according to their votaries." A late statement of the thought is that of Anatole France, who says: "The gods conform themselves exactly to the sentiments of their worshippers." To anthropomorphism in all its shades and in all degrees evolutionary science is a veritable Siva.

But pure theism is above and beyond the range of its shafts. Indeed evolution logically includes the God idea. Development implies an initial plan; *involution of thought precedes evolution of form*. Aye, the evidences of design multiply as science delves more deeply in nature's mines. And much of such design is of a character which shows it to be antecedent to evolution rather than a product of the same through a process of adaptation.

Design requires a designer—reason has ever said it, and will say it to the last. But a designer is a free, determinative intelligence. And thus is reached a firm and adequate basis of the God-idea. So after all, evolution, which is the key to the finite of which we are a part, helps to place in our hand the key to the infinite.

As evolution has a "whence" so has it a

"whither." What of its goal? While proximately a pledge of future weal, remotely evolution is a token of doom. Way down the ages somewhere, somewhere, universal wreck and ruin bide their day. The cosmos will at last plunge again into chaos. Listen to the teachings of the Volpusa, the elder of the Scandinavian Eddas. In the far off aftertime there will be a *Götterdämmerung*—a twilight of the gods. Odin and the Aesir must die. The great ash, Ygdrasil, will totter and sway and topple down, leaving the heavens to fall. Then comes Surtur the black out of the South with his torch, and sets all things aflame. But is there no one superior to this ruin? Yes; there is *Alfader*. He has always lived, and shall live always. He is greater than Ymer, and greater than Odin—is greater than they, and was before them. He will restore order, and create life anew. And the empire of the new world will be given to Balder the Beautiful, brought back in triumph from pale Hela's courts.

Vola is a true prophetess. The mechanism of the universe must, as duration surges on, wear out and run down. Sometime must come—"The wreck of matter and the crash of worlds." But over all *One* remaineth. Through all *One* endureth—the All-Father, self existent, self sufficient. Over all, through all, *He is*—"Alpha and Omega, the beginning and the end, the first and the last."

A REVIEW OF THE IMPORTANT PATHOGENIC PROTOZOA FOUND IN MAN.

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The pathogenic protozoa are responsible for a large number of diseases which ordinarily occur in the tropics, yet which are not uncommon in temperate zones. Some of these parasites appear to be able to pass directly from host to host, unaffected by the atmospheric conditions which they encounter in the passage. To this class probably belong the causes of most of the exanthematous fevers. Others require special climatic conditions, as the probable protozoan cause of scarlet fever, which does not spread in the tropics, and that of dengue, which does not spread in cold climates. Some of the protozoa under normal conditions acquire the power of invading the body only after certain developmental changes which take place after they leave their first host. Thus, according to Schaudinn, the protozoan cause of dysentery has to pass through a sporulating or encysted stage before it becomes infective, and this stage is accomplished only outside the body and under conditions of tropical temperature. Other protozoan disease agents, especially those of malaria, yellow fever, trypanosomiasis, relapsing fever, and possibly kala azar, require an animal intermediary to remove them from the body of their original host, care for them during a necessary stage of development, and inoculate them into the human host.

A protozoon is a "unicellular individual complete in itself, both physiologically and morphologically, in contrast with the metazoan in which the body is always composed of many cells, differentiated amongst themselves for the performance of differ-

ent functions." The foregoing definition is of necessity somewhat vague, and does not sharply distinguish the protozoa from primitive forms of plant life with which they are connected by gradual transitions. On the other hand, the characteristics of the protozoa mark them off from the bacteria in which the body is limited by a definite capsule, and in which there is usually no obvious distinction of the protoplasm into nucleus and cytoplasm. The protozoa throughout their entire life never rise above the unicellular stage. They represent the simplest form of animal life. The protoplasm of these primitive creatures has the appearance of a finely granular, viscid substance which, as a rule, exhibits distinct motion varying in rapidity from the slow movements of the amœbæ to the rapid flights of the flagellates. In most protozoa two layers of protoplasm may be distinguished, namely, a superficially situated and generally hyaline ectoplasm, and a centrally located granular endoplasm. These two layers have different functions. The movements are generated from the ectoplasm, which also fulfils the functions of breathing, ingestion of food, and excretion; the endoplasm undertakes the digestion of the food. To this apportionment of functions to the two layers of protoplasm is due the development of particular cellular organs such as the formation of pseudopodia, cilia, and flagella for the purpose of locomotion or capture of food. In some cases a place called a cytostome is formed for the ingestion of food and often to this cytostome is added a tubelike cytopharynx, through which food reaches the endoplasm. When these small organs exist the food residue is either ejected through the cytostome or excreted by a special anal opening called a pyroge. In some protozoa collections of fluid sometimes appear around each particle of food. These are known as food vacuoles. In these vacuoles the food is digested by means of certain ferments. Fluids to be excreted are as a rule gathered into one or more vacuoles which regularly discharge their contents and are hence known as contractile vacuoles. In all protozoa one nucleus at least is present. In some, in addition to the larger or principal nucleus (macronucleus) there is often a smaller adjunct nucleus (micronucleus). The nucleus plays the same part in the life of these single celled organisms as it does in the cells of animals higher up in the scale of life. The propagation of protozoa is brought about either by direct division or by a process of budding. Sometimes encystment takes place previous to division and independently of propagation. Many protozoa protect themselves from death by this means on finding themselves in unfavorable surroundings, and when in this condition they may be blown about by the wind, thus distributing the species over large sections of country.

The protozoa are divided into four classes, sarcodina, mastigophora, sporozoa, and infusoria. In each of these classes are protozoa of great interest to the physician.

CLASS I.—SARCODINA.

These are protozoa in which the body protoplasm is naked, in which permanent organs of locomotion are absent in the adult, both locomotion and ingestion of food being effected by protoplasmic pro-

cesses of a temporary nature termed pseudopodia. One nucleus is always present in any species of sarcodina. All members of this class exhibit resting stages or encystment during which they either protect themselves against unfavorable conditions, or enter upon a period of reproductive activity. The sarcodina are divided into several orders of which the order amœbina is the only one of medical importance. This order contains the genus amœba, of which at least two species are internal pathogenic parasites of man, and they have been given the generic name entamœba by Schaudinn. These two species are *Entamœba coli* and *Entamœba histolytica*. They have been confounded frequently, but they may be distinguished by their structural characteristics.

The *Entamœba coli* varies greatly in size (8 to 40 micra). It is sluggishly motile and is of a greyish white color. The ectoplasm is not visible as a distinct layer, except during the formation of a pseudopodium, when it appears as a hyaline projection of the surface into which the endoplasm flows; consequently the pseudopodia are soft and pliable. The nucleus is large, subcentral in position, and being rich in chromatin, stains deeply with basic dyes. When stained this amœba does not show a distinction between endoplasm and ectoplasm. The *Entamœba coli* multiplies in the large intestine by a process of multiple fission to produce eight small amœba which appear in "encysted" form; and this, according to some investigators, constitutes the infecting stage. According to Schaudinn the *Entamœba coli*, with its soft, semifluid pseudopodia, is unable to force its way between the epithelial cells of the intestine and hence is not pathogenic.

In *Entamœba histolytica*, which is similar in size to *Entamœba coli*, the ectoplasm forms a superficial layer, and the pseudopodia not only grow out from it, but are formed entirely by the tough hyaline substance of the ectoplasmic layer; therefore the pseudopodia of this form are more rigid in consistence than are those of the *Entamœba coli*. The nucleus is small, eccentric, and very poor in chromatin, hence staining with difficulty. Multiplication takes place both by binary fission and by a process of irregular division. The *Entamœba histolytica* with its tough pseudopodia is able to attack the epithelial cells of the intestine and to bore into the submucous tissues where it causes ulceration. Schaudinn believed that *Entamœba histolytica* is the only cause of amœbic dysentery and amœbic liver abscess. Musgrave and Clegg, however, do not recognize a distinction between the pathogenic and nonpathogenic amœba. They consider that the presence of amœba of any kind in the stools in the absence of symptoms, is to be explained by an unsatisfactory symbiosis with some bacterium or parasite. They believe, as a result of extended observation, that dysentery will sooner or later develop in a person infected with *Entamœba coli*. The only safe way to recognize amœbæ in stools is to note the amœboid movement which takes place in the parasite if the stools are kept warm. Low temperature causes the encystment of amœba, and when in this state they can scarcely be distinguished from many vegetable cells and especially from large phagocytic cells of probable endothelial origin.

CLASS II.—MASTIGOPHORA.

These are protozoa in which one or more permanent organs serving for locomotion or for the capture of food are present in the adult in the form of flagella. The mastigophora are divisible into four subclasses of which only the subclass flagellata is of medical interest. This subclass embraces several important parasitic forms, the most important of which are the genus *trypanosoma* and its allies, grouped together as the family trypanosomatidæ, the genus *spirochæta* and its allied forms, and the genus *herpetomonas*. The genus *trypanosoma* is distinguished by a more or less spindle shaped body, along one side of which runs an undulating membrane; that is to say a protoplasmic process extends along the body like a fin, which by its contractility can perform undulating movements similar to those of the dorsal fin of some fish. Near one extremity of the body is the blepharoplast (a deeply staining nuclear spot). From the blepharoplast a flagellum takes origin and runs along the free edge of the undulating membrane to the opposite extremity of the body, whence it continues its course as a free process of variable length.

Nonsexual and sexual forms of trypanosomes may be easily distinguished. These types can sometimes be recognized in the blood of the vertebrate host, but they only become fully distinctive in the invertebrate host where the sexual cycle occurs. The sexual forms are continued by conjugation and by the differentiation of nonsexual forms into males and females. The male trypanosomes are characterized by a more slender body, greater length of free flagellum, and a more rapid movement than the females possess. The cytoplasm is clear and finely granular, and the nucleus is elongated, corresponding to the slender form of the body. The females are distinguished by greater bulk and less activity. The cytoplasm is coarsely granular, and the nucleus is round, compact, and stains more deeply than does the nucleus of the male. The most frequent type is the asexual form which multiplies very rapidly by simple longitudinal division. Of the three types the males are the least resistant and soon die off if they do not conjugate. The asexual forms are more resistant than the male, but less so than the female forms, and it sometimes happens that the asexual and the male forms die. A process of parthenogenesis may then take place in the surviving females which consists in the nucleus going through a process of self fertilization with the production of the asexual form which multiplies, its descendants being differentiated into male and female trypanosomes.

The majority of the species *trypanosoma* are not harmful to their hosts, but of special importance to the physician is a group of species occurring in mammals, which is in many cases markedly pathogenic. The members of this group are *Trypanosoma Brucei*, causing "nagana," a disease of horses and cattle in Africa; *Trypanosoma equiperdum*, of dourine, or "horse gonorrhœa"; *Trypanosoma Evansi*, causing "surra" in horses and cattle; *Trypanosoma equinum*, causing *mal de Caderas* in horses in South America; and lastly *Trypanosoma gambiense*, producing sleeping sickness in man. All of the pathogenic species just mentioned are remark-

able for their very great morphological similarity, which renders them practically indistinguishable by structural characteristics. The pathogenic properties of these trypanosomes depend upon their power of adapting themselves to various hosts; i. e., when transferred either by biting insects or by artificial inoculation to certain animals other than those in which they naturally occur, they flourish exceedingly and so work the destruction of the new hosts. Thus *Trypanosoma Brucei* is found as a harmless parasite of wild antelopes in Africa and *Trypanosoma equinum* is similarly a harmless parasite of an animal in South America.

It has been proved with one exception that all of the species of trypanosomes so far investigated carefully, have a second host, an invertebrate animal of some kind, which acts as an intermediary between the vertebrate hosts. The one exception is the *Trypanosoma equiperdum* of dourine, which is alleged to be transmitted directly from a sick animal to a healthy one by means of coitus. In all other cases the intermediary is a blood sucking invertebrate, generally an insect or a leech. Further it is found that the trypanosomes undergo their sexual cycle in the invertebrate host alone, and never in the vertebrate host, on which account the invertebrate host is termed by some authorities the definitive host.

Closely allied to the family trypanosomatidæ is the genus *spirochæta* which at the present time contains forms which after further investigation will probably be separated into new genera. The members of this group have the appearance of minute, slender threads, wavy or spirally twisted with blunt ends. They move with a snakelike motion. According to Schaudinn the points characteristic of a true *spirochæta* are the presence of an undulating membrane, blunt ends, and the absence of flagella. Other investigators however do not lay stress upon the presence of an undulating membrane which is certainly difficult if not impossible to distinguish in some of the parasites classed as *spirochætæ*. Multiplication is, as a rule, by fission in the longitudinal direction or by sporulation, and the *spirochætæ* may by rapid division become so small that they are only visible when agglomerated into rosettes, and when of this small size they might easily pass through the pores of a Chamberland filter, as does the invisible virus of yellow fever. The important *spirochætæ* are: *Spirochæta recurrentis* (*Spirochæta Obermeieri*) of human relapsing fever; *Spirochæta Duttoni* of South African tick fever; *Spirochæta peritenuis*, the cause of yaws; and *Spirochæta refringens*, found in ulcerated syphilitic lesions together with *Treponema pallidum*. To the genus *spirochæta* was formerly referred the newly discovered agent of syphilis under the designation *Spirochæta pallida*. This species differs however from a typical *spirochæta* in that the body is corkscrewlike and shows many sharp, fine coils. At each end of the body is a slender prolongation like a flagellum. Because of this difference in structure the parasite of syphilis has been placed in a distinct genus, *treponema*, by Schaudinn. The specific name *pallidum* was taken from the very slightly refringent nature of the body in life and the difficulty with which it was first stained.

In close proximity to the trypanosomatidæ, but distinguished from them by not possessing an undulating membrane, are various species of flagellata referred to the genus herpetomonas which is characterized by a body having the form of a flattened rod, sometimes bulky near the anterior end from which a flagellum arises. To this genus have been referred the flagellated forms of the "Leishman-Donovan body" which is the cause of kala azar, and the parasite of "oriental sore" which is similar to it. The Leishman-Donovan bodies are minute rounded, ovoid, or pear-shaped bodies measuring usually about 2.5 to 3.5 micra in length and 1.5 to 2 micra in width. A distinct cuticle which can be burst by pressure limits the surface of the body. The cytoplasm contains two distinct chromatin masses or nuclei. The larger mass is compact, more or less spherical and stains more faintly; the smaller one is generally rod-shaped, and stains very deeply. These parasites occur within leucocytes and cells of endothelial origin in the spleen, liver, and bone marrow of cases of kala azar. Some investigators assert to have discovered them in the leucocytes of the peripheral circulation which has an important bearing on the question of transmission of the parasites by bedbugs or ticks. The reason for including the Leishman-Donovan body and the parasite of oriental sore among the flagellata is the fact, first discovered by Rogers, that when cultivated in suitable media, and at the proper temperature, the parasites undergo changes which result in their becoming flagellate organisms similar to the herpetomonas. A great deal of controversy has arisen concerning these two parasites. Ross considered the Leishman-Donovan body to be a distinct form of protozoan parasite, and named it *Leishmania Donovanii*. Until more is known concerning the life cycle Minchin believes it better to postpone judgment upon the position of this parasite, and to employ the generic name leishmania. If the parasites of kala azar and oriental sore are generically identical but specifically distinct, as seems probable, then the genus leishmania will include two species: *Leishmania Donovanii* of kala azar, and *Leishmania tropica* of oriental sore.

Among the flagellata there remain two genera of minor importance viz.: trichomonas of which the species *Trichomonas vaginalis* is sometimes found parasitic in man, and lamblia with the single species *Lambia intestinalis* of medical interest. The latter is a parasite of the duodenum and jejunum. It has a pear-shaped, symmetrical, somewhat flattened body (5 to 12 micra by 9 to 14 micra) with a depression on the ventral surface with which it clings to the epithelial cells. It has four pairs of flagella, all directed backward. One pair arises from the anterior border of the ventral depression, two pairs arise from the posterior border of the depression, and one pair arises from the tapering posterior end of the body. The cytoplasm contains a dumbbell shaped nucleus which stains deeply. This parasite has been regarded as the cause of a persistent diarrhœa which is accompanied by severe pain and exhaustion.

CLASS III.—SPOROZOA.

These are protozoa without organs of locomotion, or for the capture of food in the adult stage, which multiply almost always by some method of sporu-

lation, and live only parasitically in the cells of other animals. Of this class in the order hemosporidia, is the genus plasmodium, which embraces the three species: 1. *Plasmodium vivax*, Grassi, et Feletti, the tertian malarial organism. 2. *Plasmodium malariae*, Marchia et Celli, the quartan malarial parasite. 3. *Plasmodium falciparum*, Blanchard, the cause of aestivoautumnal malarial fever. The malarial parasites are practically the only members of this class parasitic for man, but as so much has been written about malaria, a detailed description of the parasites is not considered within the scope of this paper. Yet a glance at the general morphology of the parasites will not be amiss. The varieties of the malarial parasite exist in two separate stages: (a) The parasite in man who acts as the intermediate host; and (b) a phase in which it lives and develops in the body of the mosquito, which is its definitive host.

The parasite in man: (a) *Plasmodium vivax*. The earliest form seen in the red blood corpuscle is about two micra in diameter and is unpigmented. It has much the appearance of the individual segments of the rosette, or daisy formed during the chill. This tiny body gradually increases in size, becomes ring shaped and shows fine grains of pigment. It has a relatively large nuclear body in which there lies a small, deeply staining, chromatin mass. The pigment increases in amount and is in active motion. The red blood corpuscle containing it becomes larger and paler, owing to a diminution of its hæmoglobin. By the end of forty-eight hours the parasite occupies all of the swollen red corpuscle and the ring shape has given place to an amoeboid form. It is now much pigmented and is in the stage often spoken of as the full grown parasite. The next step in development is the change known as segmentation, in which the pigment becomes collected into a single mass, and the protoplasm divides into a series of from fifteen to twenty small bodies or spores radiating around the mass of pigment. The red blood cell then bursts, liberating the small spores which attack other red cells and renew the cycle. Certain full grown tertian parasites, however, do not undergo segmentation. These forms which are generally larger than the sporulating bodies, and contain very actively moving pigment granules, represent the sexually differentiated form of the parasite.

(b) *Plasmodium malariae*. The earliest form is very much like the tertian in appearance but as it increases in size the pigment granules become coarser and their movement is not nearly so marked. Toward maturity the pigment tends to gather around the periphery of the parasite. On the third day the segmenting bodies become abundant, the pigment flowing in toward the centre so as to give a daisy shaped appearance. The parasites finally break up into from six to twelve segments. Here also, as in the case of the tertian parasites, some full grown parasites persist without sporulating, representing the sexual form.

(c) *Plasmodium falciparum*. The asexual form of this parasite is considerably smaller than the other varieties; at full development it is often less than one half the size of a normal red corpuscle. The pigment is scanty and practically motionless. As a rule only the earlier stages of development take place in the peripheral blood; the later stages are

ordinarily to be seen only in the blood of certain internal organs, as the spleen and bone marrow. The corpuscles containing the parasites become generally shrunken, crenated, and brassy colored. After the disease has lasted about a week larger crescentic and ovoid bodies with central clumps of coarse pigment begin to appear. These represent the sexually differentiated forms and are characteristic of æstivo-autumnal fever.

The parasite within the body of the mosquito. Within the human host the sexual forms are incapable of further development; but when a mosquito of the genus *Anopheles* takes into its stomach sex ripe forms of the malarial parasite, the male elements give rise to a number of long, actively motile flagella which break loose, penetrate, and fecundate the female form. The fecundated female then enters into the stomach walls and begins a definite cycle of development there. Two days after biting there begin to appear small, round, granular bodies called oocysts in the stomach wall. These bodies develop until at the end of seven days they have reached a diameter of from 60 to 70 micra. They then contain great numbers of small, delicate thread-like or spindle shaped objects. The oocysts then burst, and the small spindle shaped objects are set free into the body cavity of the mosquito and finally find their way through the venosolalivary duct in the proboscis into the blood of the next person bitten by the mosquito, where they develop into fresh young parasites.

The latest investigations by Captain Charles F. Craig, United States army, and others seem to show that the species *Plasmodium falciparum* embraces a subspecies to which Craig has given the name *Plasmodium falciparum quotidianum*. He believes that the *Plasmodium falciparum* of Blanchard is responsible for the tertian type of fever, while the subspecies gives rise to a quotidian type.

CLASS IV.—INFUSORIA.

These are protozoa in which the organs of locomotion are cilia, and in which the nuclear apparatus is differentiated into a vegetative macronucleus and a generative micronucleus. With a few exceptions an oral cavity (cytostome) is always present and frequently there is an anal aperture (cytopyge) placed at the opposite pole. The infusoria are divided into two subclasses, ciliata and suctoria. In the ciliata the cilia are retained throughout the active life of the animal. In the suctoria the cilia are only present in an early larval stage. The ciliata include four orders, holotricha, heterotricha, hypotricha, and peritricha. Belonging to the order heterotricha is the genus *Balantidium* which is important from a medical point of view. It is characterized by an oval ciliated body with the cytostome starting from near the anterior end where it is broadest, and becoming narrower as it passes backwards on the side of the body. At the opposite pole of the body is the anus. The nucleus is compact, oval, or almost sausage shaped, with a single micronucleus close to it. The species *Balantidium coli* is commonly found in the rectum of the hog, and has often been found in the colon of man where it gives rise to diarrhœa.

UNITED STATES NAVAL TRAINING STATION.

A DANGER FREE METHOD OF USING FRESHLY PREPARED VIRUS (*VIRUS FIXE*) FROM THE BRAIN OF THE HYDROPHOBIC RABBIT.

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The Pasteur method (1) of preventative inoculation against rabies has been modified (Hoegyes dilution methods) but little since its discovery. Pasteur believed that the *virus fixe*, even though it was attenuated by drying, still possessed sufficient virulence for man to produce an immunity, which in turn would prevent the development of rabies.

The inoculations were made with an emulsion of the spinal cord of a rabbit dead of hydrophobia. Before making the emulsion, the cord was hung up to dry for a period of fourteen days. The dosage or the amount of the vaccine was gradually increased by using emulsions made from cords which had been dried for thirteen days, twelve days, and ten, on down to five or six days. This method was used in moderately severe cases. (Treatment simple.)

The drying of the spinal cord does not, according to Pasteur, influence in any manner the virulence or quality of the virus, but simply diminished the amount present in the dessicated cord. He dried the spinal cords over potassium hydroxide at an average temperature of 23° C. He soon observed that vaccine prepared in this manner was not efficient in severe cases especially, in those following wolf bites, and wounds on the face which almost invariably proved fatal. Therefore he recommended that the treatment in these cases should begin with a fourteen day cord and terminate with a two day cord so called treatment intensive.¹

A study of the statistics of the various institutes shows a higher mortality in those cases, when the injections terminate with a from four to six day cord.

I. *Odessa Institute*. (Gamaleia.) (2) 1. 14-15 day cord. Patients, 100. Mortality, seven per cent. 2. 14-2 day cord. Patients, 140. Mortality, 0 per cent.—Severe Bites. 1. 14-5 day cord. 14-5-4-3 day cord. Patients, 10. Mortality, 20 per cent. 2. 14-2-1 day cord. Patients, 39. Mortality, five per cent.

II. *Paris Institute*, 1886. (3) Severe bites on head and face. 1. 14-5 day cord. (Treatment simple.) Patients, 136. Mortality, 6.6 per cent. 2. 14-2-1 day cord. (Treatment intensive.) Patients, 50. Mortality, none.

¹According to Pasteur, complete immunity against street virus is not established until two weeks after the treatment is discontinued, making a total of twenty-five to thirty days after the patient is bitten. Consequently those patients in whom the incubation period is less than thirty days are only partially, if at all, protected by the Pasteur treatment.

Bauer's statistics showed that thirteen per cent. of all patients affected with the rabies and not treated die in about thirty days. In wolf bites (Babes) fifty per cent. die, when not treated, before thirty days. Pasteur's method is thus not so efficient as has been believed.

The results of his treatment are based on the results of Leblanc in the Seine territory from 1878 to 1883, where annually from forty-five to 150 persons are bitten, a total of 515, of whom eighty-one died of rabies, a ratio of six to one. Investigations by the Pasteur institutes have shown that these statistics are erroneous, the total number of persons bitten being from three to six times the number given by Leblanc. The number of persons bitten is hard to estimate, but the number of persons dying from hydrophobia is fairly accurate. A conservative estimate gives the number dying as one in twenty instead of one in six. Pasteur asserted that the mortality without treatment was twenty per cent.; with treatment one or 0.5 per cent., but according to the later statistics the mortality without treatment is five per cent. and with treatment one or 0.5 per cent.

III. *Warsaw Institute.* (Bujwid.) (4) 1. 14-4 day cord. Patients, 100. Mortality, one per cent. 2. 14-7-6 day cord. Patients, 195. Mortality, 4.1 per cent. 3. 14-2-1 day cord. Patients, 1,500. Mortality, 0.38 per cent.

IV. *Turin Institute.* (Bordoni-Uffreduzzi.) (5) 1. 14-4 day cord. (Treatment simple.) Patients, 81. Mortality, 2.46 per cent. 2. Same treatment of cord, but with increased dosage. Patients, 925. Mortality, 1.72 per cent. 3. 14-1 day cord. Patients, 338. Mortality, 0.29 per cent.

These statistics indicate very clearly that the safety of the immunization increases in direct proportion to the virulence of the material injected.

Gamaleia (6) in 1887 expressed the opinion that the results of the injections bore a direct relation to the amount of injected *virus fixe*. He used one to two day cords.

Babes (7) came later on to the conclusion that only the more virulent emulsions prepared from the medulla gave complete immunization. When bitten by a wolf he began injections immediately of virulent medullary emulsions. No rabies followed. He found that injections of attenuated emulsions were unnecessary, if the patient was given immediately fresh virulent *virus fixe*; the protection would be absolute and at the same time harmless. That large doses of *virus fixe* are harmless has been shown by Orłowski (8) of Wilna Institute. Since 1902 he has continually injected his patients twice daily with maximum, quantities of five grammes, including preparations made from one day old medulla. To patients who are severely bitten he gives the enormous dose of 200 grammes, during a period of three weeks, with good results, especially in deep bites on the face by wolves. He has never observed any alarming symptoms.

Animal experiments have also proved the virus to be harmless. Helman (9) inoculated subcutaneously thirty-four dogs and eight monkeys with perfectly fresh *virus fixe*, giving a total quantity of ten grammes in four days; none of the animals developed rabies. Marx (10) inoculated intramuscularly two monkeys with large doses of fresh *virus fixe* with absolutely negative results. Two other monkeys, who were inoculated with street virus, died of rabies. Marx comes to the following conclusion: "That living *virus fixe* is generally modified in its passage through rabbits, its resistance becoming so low that it is destroyed before it can gain entrance to the central nervous system of man. After the rabbit *virus fixe* is distributed through the human body a toxine is liberated, which causes the production of specific antibodies for rabies."

Ferran (11), in Barcelona, was the first to inoculate human beings with fresh *virus fixe*. Ferran, believing that *virus fixe* was attenuated in the rabbit body, asserted that human beings could be immunized by using inoculations of fresh *virus fixe*. There is no record, however, as to whether he proved the theory by animal experimentations. In 1887 he inoculated eighty-five human beings with no deaths. This method of inoculation was not given in the reference consulted.

P. Frosch (12) in his latest review of rabies states that Dr. Brausewetter has studied Ferran's

method (13) in Ferran's laboratory. The method is as follows:—0.08 grammes of virulent *virus fixe* is rubbed up in a mortar with 0.02 gramme of sterilized sand. Drop by drop 8 c.c. of solution, (formula not given), possibly salt solution or bouillon is added immediately after sedimentation of sand. The superjacent fluid is drawn, and about 6 c.c. injected subcutaneously in three doses of 2 c.c. each in different parts of the body. These injections are given for five consecutive days. Children and adults are treated alike. In severe cases it is advisable to repeat the treatment after an interval of five or ten days.

Ferran stated that small doses of unchanged *virus fixe* given subcutaneously are fatal and have no immunizing effect, while large doses are harmless and at the same time produce an absolute immunity. Experiments in our laboratory on human beings have shown conclusively that the quantity of fresh *virus fixe* injected is of no material moment and small doses do not produce rabies, as stated by Ferran.

Ferran believes that by injecting small doses of *virus fixe* its amount of toxine was insufficient to produce antibodies before the *virus fixe* reached the central nervous system; with larger doses antibodies are produced quickly and the organism is protected against general infection. Ferran's mortality is from 0.3 to 0.4 per cent.

His first communication caused a storm of indignation and he was censured severely for so recklessly dealing with human life. Bareggi (14) was the first to rake up the method of Ferran. He inoculated fresh *virus fixe*. He advised that the mortar in which the medulla and sand are rubbed up, be set aside for a while in order that the larger particles might gravitate to the bottom. Human beings should be inoculated with the upper part of the emulsion. He does not state how many persons he inoculated, but it is said that five died from experimental rabies, and the Italian government immediately closed his institute.

In contrast with the bad results of Bareggi are the results of Wysokowicz (15) in Kiew. He inoculated intravenously seventy persons with good results and with no mortality.

It is noteworthy that neither Ferran nor Wysokowicz lost a patient from rabies, and furthermore it is impossible to determine whether Bareggi's five fatalities were due to street or experimental virus, and as these are the only fatalities reported in the literature as due to experimental rabies, it is to be regretted that further investigations were not made.

At the present time probably 150,000 human beings have been immunized with *virus fixe*. It is impossible to determine by animal experimentations whether a certain virus is of the street or fixed variety.

Pasteur, also Prottopoff (16) state that street virus kills animals in two or three weeks, while *virus fixe* kills in from seven to nine days. Inoculated subdually street virus, has killed rabbits in from eight to ten days, several cases of this kind having been reported (Calabrese (17), Abba (18), Schueder (19)).

The clinical diagnosis is also uncertain, and the

street virus does not always give rise to convulsions and hydroaerophobia, but may throughout the entire disease express itself by symptoms of paralysis.

Nitsch (20) recently has stated that *virus fixe* is not dangerous even if it came in contact with a nerve, an ideal condition for the production of rabies, yet not one case had followed such inoculations. He inoculated himself subcutaneously in the neck with a piece of fresh *virus fixe* about 5 mm. long, emulsified in normal salt solution. No ill effects followed. As a control he inoculated intracerebrally with the same emulsion a rabbit, using the small dose of 0.001 c.c. The rabbit died in seven days with typical symptoms of rabies. Although he proved that *virus fixe* was harmless for human beings, yet Nitsch believes that in some cases human beings may be hypersensitive to rabies and thus it may develop in them from *virus fixe*, and it is on account of this possibility that he advises a careful general examination before injecting *virus fixe*. Just how a general examination could determine a hypersusceptibility is hard to imagine.

Experiments in the various Pasteur institutes prove very conclusively that the results of treatment vary according to the virulence of the fresh *virus fixe*. The more virulent the *virus fixe*, the better the results, yet despite this positive evidence not a single Pasteur institute in the world with the exception of Ferran in Barcelona, uses the fresh *virus fixe*.

It is generally asserted, that when fresh *virus fixe* is injected rabies toxins are also injected, which toxins are deleterious to the central nervous system. Experimental and clinical evidence should point to the existence of a rabies toxin.

Remlinger (21) has reported one case in which on the twelfth day of treatment paralytic symptoms of the upper and lower extremities developed, which improved in twelve days, and disappeared entirely in six weeks. He believes the symptoms were due to an intoxication from *virus fixe* and not to attenuated street virus.

Puscarin and Lebell (22) in 200 inoculations had seven cases of slight fever, paresis, parasthesia of the lower extremities, retention of urine, and obstipation. Under continued treatment the symptoms disappeared, yet they believed that these symptoms were due to an intoxication from too large doses of *virus fixe*.

Chmielewsky and Skschivan (23) report two cases, in which were observed after the treatment a form of myelitis in which there was an elevation of temperature, paresis of the face and eyelid muscles; sometimes with disturbances of respiration, but both patients recovered in from one and one half to eight weeks.

Babes (23) reviews all the literature and finds very few cases of neurosis and irritation of the spinal cord, bulbar paralysis, myelitis, and Landry's paralysis, and only one death in 10,000 cases of vaccination from nervous affections.

Chmielewsky and Skschivan (24) think, that all these symptoms are due, to a mild form of paralytic rabies. Babes thinks it is the effect of the rabies toxin. Whether these symptoms are due to *virus fixe* or to an attenuated street virus is still undecided, though it seems most probable that the common method of treatment with highly attenuated *virus*

fixe, permits the street virus to cause symptoms of mild rabies. This resembles the toxine effect seen in diphtheria in cases where insufficient antitoxine has been administered.

In the treatment of rabies as commonly carried on in Pasteur institutes antibodies on account of the highly attenuated *virus fixe*, which is used are produced very slowly, and thus the toxins of the street virus are only partially neutralized.

It is impossible to determine the virulence of any given street virus for the human being and likewise impossible to determine the susceptibility of any given patient, factors, which no doubt influence the expression of symptoms, following treatment with *virus fixe*.

Those portions of the street virus toxin, which have little affinity for the antibodies and are only neutralized by large amounts of rabies antibodies become fixed in the central nervous system and give rise to the different nervous phenomena (paralysis, myelitis, etc.).

The exhibition of the symptoms varies, depending on the amount of toxin fixed in the central nervous system.

The practical value of using fresh *virus fixe* for the treatment depends on a single factor, and that is, that the *virus fixe* used must be absolutely atoxic and avirulent for the human being. At the present it is impossible to determine, on account of the small dosage used, whether the *virus fixe* used in the various laboratories has these qualifications. Careful investigations and experimentations are necessary to determine the virulence for man of the street virus after passage through a single rabbit. It is not known whether the passage of the street virus through a single rabbit will render it avirulent for the human being.

The using of fresh *virus fixe* is without doubt of great practical value and for the past two years has been used exclusively in the Pasteur Department of the Allegheny General Hospital.

Before adopting this method in the treatment of rabies patients conclusive evidence was obtained by experimentations on human beings, that the *virus fixe* (Pittsburgh) was absolutely harmless for the patient. To prove the avirulence of the fresh *virus fixe*, the entire brain of a rabbit dying of hydrophobia was after proper preparation in salt solution (emulsification) injected intramuscularly between the scapula of Mr. E. P. The brain of another rabbit was similarly injected into Mr. N. N. No ill effects of any kind were noted in either case. A control rabbit injected with a 0.02 dilution of the same emulsion died in seven days with experimental rabies.

Experiments by Nitsch have shown that the brain is ten times as virulent as the spinal cord. Experiments in our laboratory have confirmed these findings. Therefore it seems absolutely certain that the *virus fixe* (Pittsburgh) is absolutely harmless.

In the last two years forty patients have been treated with fresh *virus fixe* in the Allegheny General Hospital. Some of these patients were bitten by dogs, actually proved to be mad; others by dogs, which were only suspected to be afflicted with rabies. The doses given were fifty times that given by Ferran. No patients have died from hydrophobia, and none showed any evidence of intoxication due

to *virus fixe*. The first ten patients were given two injections daily for ten days; eleven, one injection daily for ten days, and the last nineteen were given daily injections for six days only, following the teaching of Ferran, who gave injections daily for five days. He treated eighty-five patients without death.

If results by this method continue to be satisfactory during the coming year, as no doubt they will, the opinion of Ferran that one injection will give complete immunity is probably correct, and we can with safety reduce the number of injections to four.

In view of the results obtained by this method, and after carefully considering the individual case (depth, location, and character of bite) and by using a uniform *virus fixe*, we can gradually reduce the number of injections until the minimum that will produce immunity is determined and thus simplify the treatment of rabies.

It is not necessary any more to dry the spinal cord, and at the same time the more virulent brain tissue can be used, thus eliminating the tedious and difficult dissection of the spinal cord. The using of fresh *virus fixe* is very advantageous to both physician and patient as it offers greater security than the old Pasteur method due to the giving of fresh virus fix on the first day, thus losing no time in the immunization with avirulent *virus fixe*, which all authorities agree does not give any protection, but affords time for possible development of rabies. By the method described in this paper, the immunization time is shortened two thirds, and both trouble and expense are saved.

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ISOLATED FRACTURE OF THE TRANSVERSE PROCESS OF A LUMBAR VERTEBRA.

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Attention has been recently directed to arthritis deformans and "sprains" of the sacroiliac joint as common causes of pain in the sacrolumbar region. As adding another factor to the etiology of chronic pain in the lumbar region, the following cases are reported:

CASE I.—Mr. E. C. W., aged fifty years, strained his back about four months ago. While lifting a heavy tray of samples out of a trunk he felt something give way in the small of his back. He experienced great pain in this region and was compelled to cease work. Next morning while bending over a washstand he experienced excruciating pain in the same region and fell to the floor, being able to rise, however, in a few minutes. Since that time he had been unable to follow his occupation (that of traveling salesman) because of pain over the lower part of his spine, the pain being especially marked on stooping, riding on cars, and walking fast. At night, while in bed, he occasionally felt sharp twinges of pain.

On examination of the spine and sacrum nothing abnormal was found except for an area of acute tenderness to pressure of about the size of a dollar just to the left of the last lumbar vertebra in the angle between the crest of the ileum and the spine. All his pain was referred to this area. The patient had an exceptionally well developed musculature, all the muscles being prominent and very solid. He was able to do various lifting feats before the accident. The pain resisted all the usual methods of treatment, including rest in bed, strapping, salicylates, and potassium iodide. A galvanic current seemed to give some temporary relief.

An x ray examination revealed what was undoubtedly a fracture of the left transverse process of the fifth lumbar vertebra (Fig. 1). This process appeared to be tilted up at an angle, and there was an irregular fissure separating the tip of the process from its base. There was apparently some union of the fragments, although it was impossible to tell to what extent the repair had progressed.

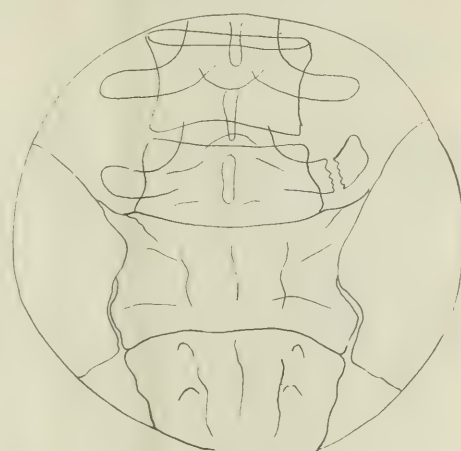


FIG. 1.

It was more than probable that there was some relation between the powerful musculature of the patient and this fracture, for the accident was apparently the result of musculature strain. There was considerable strain exerted upon the lumbar transverse processes by the strong muscles of the back (especially the erector spinæ) in standing and

stooping, and it was possible that the pull of these muscles had not only produced this fracture but had also resulted in a delayed union of the fragment, with perhaps an excessive and painful callus.

CASE II.—E. G., aged thirty-five years, was admitted to the Cincinnati Hospital complaining of severe pain in the right lumbar region. According to the patient's statement, the pain began two days before, following a sharp blow received in the small of the back by a heavy, rapidly revolving, crank handle.

Examination revealed marked rigidity of the lumbar muscles of the right side and great tenderness on pressure to the right of the first lumbar vertebra. An x ray photograph showed a distinct fracture of the right transverse process of the first lumbar vertebra with some upward displacement of the broken fragment (Fig. 2). No further injury to the vertebral column was evident.

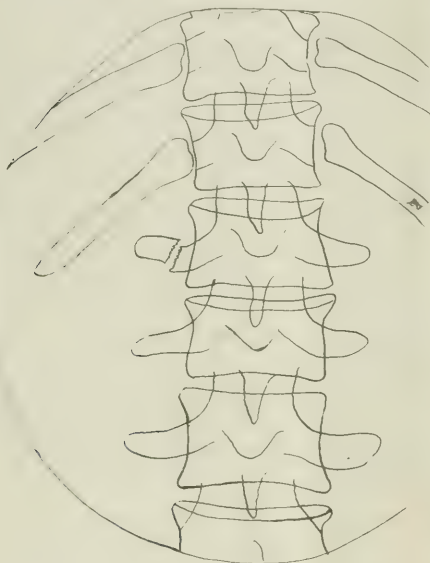


FIG. 2.

We have here two cases of isolated fracture of the transverse lumbar processes, one resulting from a strain and the other from direct violence. In either case the injury may very well have been passed over as a simple "sprained back."

This injury has been considered a very rare one. Indeed, up to something over a year ago, there were but three cases to be found in the literature, and in these cases the fracture was discovered by post mortem dissection. Ehrlich (1) in March, 1908, reported what he considered the first case of isolated fracture of the transverse lumbar processes to be discovered *intra vitam* by the x ray and the fourth case on record. Haglund (2) adds to the list by reporting seven cases of isolated fracture of the transverse lumbar processes, all verified by x ray examination, occurring in his own practice during the last six years. He further refers to six more cases in which all the evidence pointed to such a fracture although not verified by skiagraphs. In the seven verified cases of Haglund the nature of the causal trauma is especially instructive. In one case a falling coal bucket struck on the lumbar spine, in two others a sprain was received while riding a

bicycle. The fourth patient strained his back while lifting his son, the fifth fell down stairs. The sixth case was that of an athlete who had many times fallen on his back but could not determine which fall had caused the fracture.

The frequency with which the symptom, chronic sacrolumbar pain, is met with and the difficulty so often offered in the recognition of its cause lends considerable clinical importance to this type of fracture.

If the fracture is unrecognized at its inception, and many such fractures are undoubtedly passed over as "sprains," nonunion or delayed union will follow due to the fact that the loose fragment will move with every movement of the body. The pain may thus become chronic and persist for a considerable period. In some cases the patient will incline the body toward the side of the fracture. Continuance of this posture over a period of time may lay the foundation for a persistent scoliosis.

The diagnosis is based upon the history of the accident, tenderness to pressure over the fracture, slight muscular rigidity, and pain of varying severity which is increased by movements of the trunk, especially walking and stooping and relieved by lying down. If the case is seen later the x ray alone will establish a diagnosis.

Although the fracture *per se* is of minor importance, its recognition is of great prognostic moment in that the more serious conditions, such as tuberculosis and arthritis deformans of the spine and sacroiliac joints, are thus ruled out.

The recognition of this fracture has furthermore some medicolegal importance, owing to the peculiar nature of the causal trauma and the symptoms. In Case I herewith reported, the x ray examination was undertaken at the instance of an accident insurance company as malingering was suspected.

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- 22 WEST SEVENTH STREET.

TRACHEOBRONCHOSCOPY AND ITS MERITS IN A CASE OF FOREIGN BODY IN THE BRONCHUS.

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Although to Killian, the father of bronchoscopy, our debt is inestimable for revealing the possibilities in exploration of the respiratory tract, it was reserved for Chevalier Jackson, by his invention of the separable oral speculum, to place this important sphere of clinical diagnosis and treatment upon a truly feasible and practical basis. Indeed, it is my firm conviction that the time is not far remote when this simple device, probably minus the separable half of the tubular instrument, will universally supplant the time worn laryngeal mirrors in laryngological examination.

Illustrative of the possible value of the tracheo-bronchoscope in this particular field of endoscopy, permit me to quote the following case from the ser-

vice of Dr. Charles H. Frazier, to whom I am gratefully indebted for permission for this report:—

CASE.—W. E. T., a boy, six years of age, was admitted to the University Hospital, May 18, 1908, with the history of having "swallowed" a nail two weeks previously. This nail, on account of persistent cough and rise of temperature, although the child's general condition remained good, was believed to have entered the trachea.

The physical examination demonstrated a small, thin, dyspnoeic, exceedingly intractable colored child. The temperature, pulse, and respirations were 101° F., 140, and 64, respectively. Marked limitation of expansion of the left half of the chest upon respiration, together with dullness on percussion, occasional rales, but practically absent breath sounds and vocal fremitus, especially posteriorly below the spine of the scapula, indicated the existence of atelectasis of the lung, particularly the inferior lobe on that side. Aside from the exaggerated respiratory movement and breath sounds, the right lung was entirely normal. Cardiac action was rapid and weak.

A skiagraph showed very well the presence of a nail about 2.5 cm. in length, lying obliquely in the direction of the bronchus, head downward, between the fourth and fifth left costal cartilages at their sternal junctions. The shadow cast by the left lung, particularly the lower lobe, in the absence of any fluid accumulation in the pleural cavity, confirmed the diagnosis of atelectasis, although it obscured to some extent the sharp outline of the nail.

During an unavoidable delay of at least a week, while a child's tracheobronchoscope was being obtained, the temperature (see chart) after a gradual fall to the normal, began to manifest increasing fluctuations, the maximum being 102.5° F. In view of this fact, continued cough but without expectoration, and a leucocytosis of 15,000, the development of an abscess of the lung was considered to be not improbable and I performed tracheobronchoscopy nine

the accompanying drawing. The lumen contained a quantity of yellowish grayish pus. For a distance of about 3 cm. above the surface of the pus the mucous membrane, in addition to much congestion, swelling, and inflammation, displayed a pinkish brownish, grayish coloration evidently bordering on degenerative or necrotic processes. By the use of a long metallic tube inserted through the scope and suction with the air pump, supplemented by long gauze carriers, at least one half to an ounce of pus was evacuated from the left inferior lobe bronchus. A careful search in a beautifully well lighted field failed to reveal the nail, which was supposed to have become imbedded and lost to vision in the markedly swollen mucous membrane.

The father visited the hospital shortly after the anæsthetization and insisted upon removing the child to his home the same evening. Recent inquiry elicited the facts that the child enjoyed a fair health, aside from some cough, for a period of two months after his return home. In the latter part of July, he was suddenly seized at midnight with a severe coughing spell and coughed up a large carpet tack.

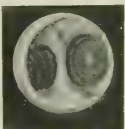


FIG. 3.—Inferior lobe bronchus.

The particularly noteworthy feature in the report and study of this case, aside from the general interest at the present time in tracheobronchoscopy relative to foreign bodies and other diagnostic indications, is the beneficial influence which may have been exerted by the removal of the comparatively large quantity of pus from the lung, in aborting or preventing abscess formation. Personally, from a study of the clinical symptoms, development of an increasing fluctuation in temperature, increasing

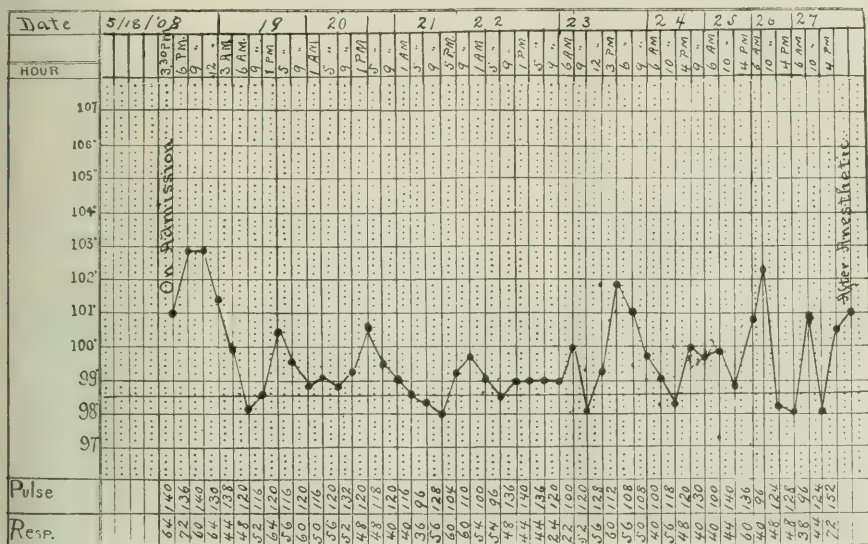


FIG. 4.—Temperature chart.

days after admission and three and a half weeks after the entrance of the foreign body.

Tracheobronchoscopic Examination: Under chloroform anesthesia, the 5 mm. Jackson tracheobronchoscope was readily introduced by direct vision through the larynx into the trachea, employing the separable speculum. The instrument was passed through the bronchial tree as far as the bifurcation of the left bronchus, displaying normal mucous membrane throughout. At that point, the superior lobe bronchus appeared entirely normal. The inferior lobe bronchus, however, presented the appearance depicted in

cough up to the time of tracheobronchoscopy, leucocytosis, and subsequent health of the child, I believe the benefit attendant upon this evacuation of pus to have been important, and it is not unreasonable to surmise that by virtue of this simple procedure a new sphere of utility awaits the bronchoscope.

ORTHODONTIA AS RELATED TO MEDICINE.*

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I was very happy to be able to accept the invitation to read this paper, as I believe both medical and dental conditions will be benefited by a more intimate knowledge of both points of view.

The time at my disposal is sufficient only to allow me, in a very brief manner, to point out some of the

for me to dwell more at length upon tooth relation and how these conditions affect the hygiene of the mouth, in regard to making it self cleansing and also affecting the facility with which a person may keep the mouth properly clean.

Let us consider for a moment a perfectly normal mouth. Unfortunately, it is so seldom met with as to make it a matter of comment when found outside of our textbooks. I feel confident to say that there cannot be found over one per cent. of such mouths existing among our civilized people, and not over twenty-five per cent. that are even practically satisfactory.

I am going to pass for your inspection the casts of one of the few such cases that I have been able to discover. You will please note that the normal arrangement of the teeth in this case is such as to present the least opportunity for the lodgment of food, and that the action of the lips, cheeks, and tongue in brushing the surface of the teeth together with their action upon the saliva comes the nearest to make them self cleansing of any possible arrangement, and also making it possible for the

brush and atomizer to produce the best results. You will notice that in this arrangement there is the least possible amount of tooth structure in contact, and that the approximal spaces are easily relieved of the food deposits. Any departure from this relation will bring a corresponding opportunity for the lodgment of food and an inability to relieve the mouth of these deposits either naturally or artificially. As illustrative of this I will pass several casts which present a fair average of such cases.

Scarcely second in importance comes the matter of mastication. We as a nation, perhaps more than any other, have acquired the habit of bolting our food. This may arise from several causes. The strenuous life that is led by many has been a factor in forming this habit, together with the questionable

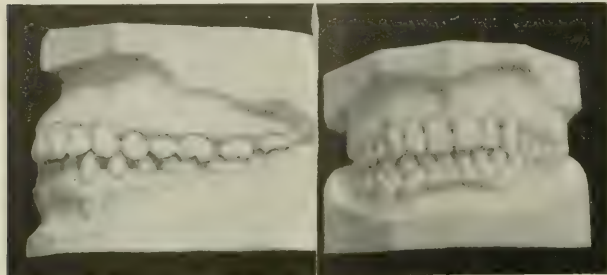


FIG. 1.—Normal occlusion.

conditions which most intimately concern us. In general, I believe that there is no case of irregularity of the teeth but that in some degree, varying with magnitude of departure from normal, has its detrimental influence upon the general physical economy. It is my purpose to direct your attention at this time to three phases of the subject, namely; first, the hygiene of the mouth as affected by the relation of the teeth; second, the value of normal teeth in normal positions in the matter of mastication and assimilation of food; and third, the relation of a certain character of irregularities to nose and throat troubles.

It would be not only unnecessary, but presumptuous for me to take your time for a consideration of the effects of unhygienic mouths, of how they are

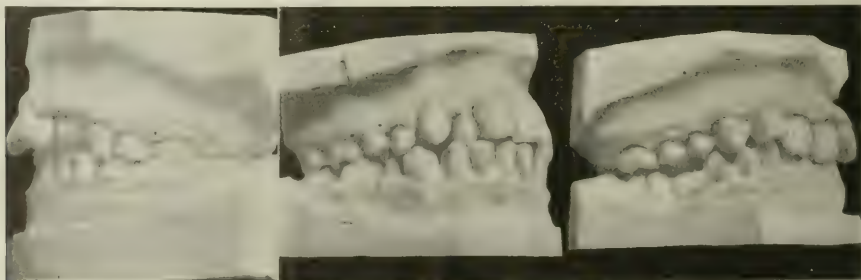


FIG. 2.—Mouths that will be unhygienic from the inability to cleanse.

the initial factors in many phases of disease, of how the unhygienic mouth is an ever present factor in all infections of the alimentary tract. Dr. Tracy has plainly brought your attention to the matter as related to his phase of work. It is, however, pertinent

custom of indulging largely in foods that have been over prepared. It is not to be expected that a person who, for lack of time, hurries through his breakfast and lunch, will take ample time to masticate and salivate his dinner even though the time factor is eliminated.

*Read before the Philadelphia County Medical Society.

Together with these conditions and influencing them detrimentally we must consider the *ability* to properly masticate the food.

Members of our profession have been too prone to the belief that if they preserve the full complement of teeth in a sound condition, they have fulfilled their duty to their clientèle—this is far from the case—for on the arrangement of the teeth depends more largely than anything else the efficiency in mastication. Not only must the cusping surfaces of the teeth be in such alignment as to allow them

ment of the dental arches. For some time I have been making a careful observation of the mouths of children relative to the failure of the teeth in their eruption to assume the proper distance above the alveolar process. I find that it is a largely prevailing custom for children to do but little real substantial work with the jaws. This, I have ascertained by inquiry and by observing that the occlusal surfaces of the teeth indicate but little or no abrasion, and also that the muscles of mastication are not at all well developed. It appears that the lack of use

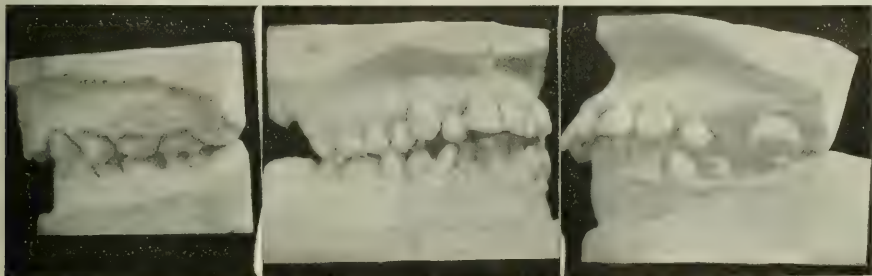


FIG. 3, showing how abnormalities of the teeth detract from the ability to masticate food.

all to be brought into contact with the teeth of the opposing arch, but the arrangement must be such as to not only allow, but encourage, the lateral and the anteroposterior motion of the jaws. A close examination of many mouths will reveal the fact that this ideal condition is met with but seldom and in the majority of cases, absent to a marked degree.

One might conclude at first thought that the inability to masticate with efficiency would engender the habit of taking a sufficient length of time to accomplish the final result satisfactorily, but I do not

does not stimulate the functions of eruption to the normal amount.

The infraeruption of the posterior teeth enters largely into many cases of irregularity and is a serious factor. I believe that you men of the medical profession can be a great help to us by impressing upon your patients who have children the great necessity for them to thoroughly masticate their food.

For the few remaining moments I shall ask you to consider with me the relations existing between a certain class of irregularities and nose and throat

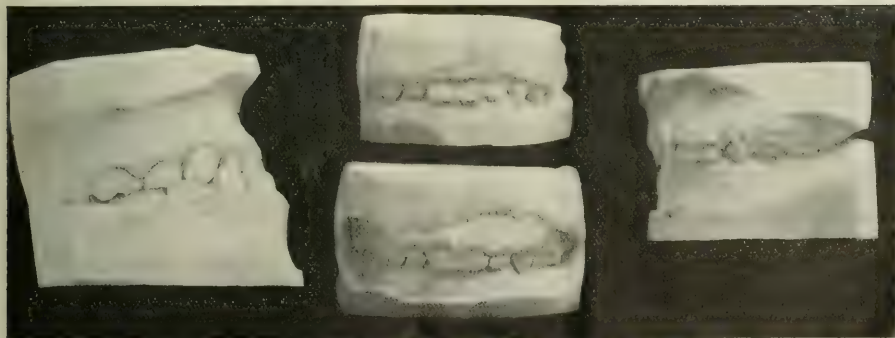


FIG. 4, showing the failure of the deciduous teeth to erupt to normal height, probably from the lack of use.

believe this is the case, but rather that it demoralizes the nervous mechanism of deglutition to the point where it allows the food to pass to the stomach unmasticated and unsalivated.

The bad effects of which, from a medical standpoint, both in disease and comparative health I need not comment upon. Furthermore, these conditions work both ways, the habit of too little mastication has a very injurious effect upon the proper develop-

ment of the dental arches. In the orthodontic vocabulary these are known as Class II, Division I. They are, or at some time have been, associated with mouth breathing. It is most usual to find them coincident from the fact that while the nose or throat difficulty may have been satisfactorily treated, the teeth have assumed such relations that make it quite impossible for normal breathing to be established because of the difficulty in closing the lips. To get a clearer under-

standing of these relations it will, perhaps, be well for me to briefly describe the typical malrelation of the teeth associated with mouth breathing. I speak of these malrelations as associated with mouth breathing because it seems to be the habitual breathing with the mouth open that causes this malrelation of the teeth rather than any individual nose or throat affliction.

While there are individual characteristics in each

lation of the teeth of the lower arch or of the mandible as a whole, as the case may be, is caused by the abnormal habit of breathing through the mouth, and this is a serious condition from the orthodontic point of view, inasmuch as it interferes with the masticating function and seriously with the normal and harmonious facial lines.

There is a considerable difference of opinion of the relations existing between the lack of develop-

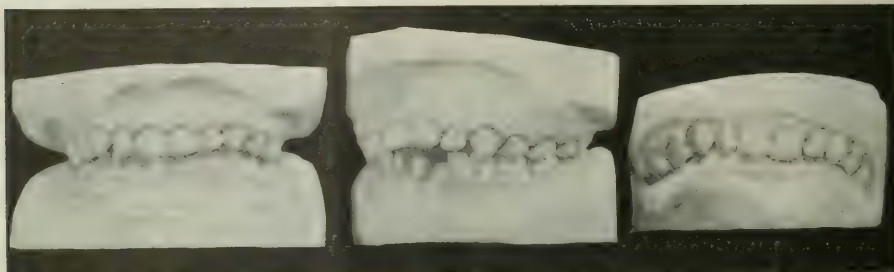


FIG. 1. showing cases developing those characteristics which are associated with abnormal breathing.

case of this class of irregularities, the fundamental features are the same in all, some of which are doubtless familiar to every physician. There are other relations which I doubt whether even rhinologists have recognized as being generally associated.

Speaking of the condition from the position of the orthodontist, I would begin with the relation of the teeth of the lower arch to those of the upper, as this is the most radical departure from normal. In this relation the teeth of the lower arch are posterior to their normal relation to the upper, i. e., the lower first molar occludes with the posterior part of the upper first molar and with the anterior portion of the upper second molar instead of with the anterior part of the upper first molar, and the distal part of the upper second premolar. This has the effect of having all of the teeth of the lower arch occluding posterior to normal the width of a premolar.

Of the lower arch the molar teeth are in infra-eruption while the anterior teeth are in supereruption. Of the upper arch you are more familiar, for there you find the typical narrow arch, either V shaped or U shaped, with the characteristic protruded anterior teeth.

I can say with a good deal of assurance that in the cases presenting these conditions we are almost sure to find a history of nose or throat troubles, and while I am not equally sure that all cases of nose or throat troubles produce these dental conditions. I think it at least probable in a large majority of cases. With this particular class of cases I feel that the work of the orthodontist and that of the medical profession, particularly the rhinologist, are very closely associated, and I am confident that much good might come if the physician would give the matter his careful consideration with the dental relations in view.

There must be many features in common: In etiology, we must determine if possible which is the cause and which the effect; they must be very closely associated. I feel confident that the posterior re-

ment of the bones related to the nasal tract, the alveolar process, the dental arch, and such nose and throat disorders as tend to close the nasal tract and establish the habit of breathing through the mouth. I should say that it might easily work both ways. Should some condition arise during the development of the dental arches to seriously interfere with their

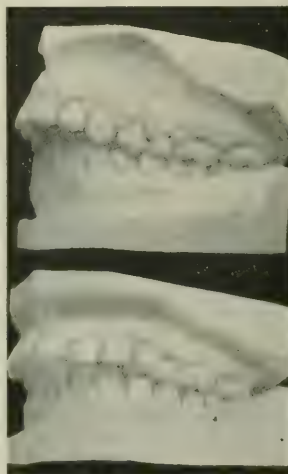


FIG. 2. showing fully developed cases associated with mouth breathing.

normal growth, it is reasonable to suppose that the bones directly associated would also be undeveloped and that this general lack of development would be a predisposing cause in the disorders met with by the rhinologist. On the other hand, chronic nose and throat troubles are undoubtedly large factors in the failure of the superior dental arch to expand to its

normal contour. In the matter of treatment also there is much in common. I am satisfied that but little good may be expected to result from the treatment of the dental abnormalities unless the nasal and throat conditions are corrected and normal breathing is established. While, from the other point of view, I am equally confident that the physician will be unable to establish normal breathing without the correction of the malrelations of the teeth to allow the lips to assume such a position as will easily and naturally close the mouth. Should normal breathing not be established I should suppose it would be a predisposing factor in causing a recurrence of the diseased condition, particularly those associated with adenoid vegetations of the nasal tract.

In those cases of well developed nasal occlusions it is doubtless a question how much benefit may be derived from an expansion of the alveolar process and the maxillary bones. However, should this be done at an early age while it might not bring about an actual expansion of the palate and nasal bones, it not unreasonable to expect a better result by stimulating a better normal development of all associated bones and in that way benefiting the final result.

By expanding the arch of a young patient, while it might not actually lower the floor of the nose and straighten a deflected septum, it would be possible to have the effect of relieving the upward pressure and prevent the further development of a deflected septum.

There are many other factors in common, but the time will not permit even a reference to them. The time has been even too short to do justice to the phases already mentioned, but I hope it has been sufficient to establish the fact that the orthodontist is doing something that will be of benefit to the individuals under abnormal conditions as well as help them to keep normal their other physical relations.

1429 SPRUCE STREET.

A PRACTICAL TEST FOR INDICAN ($C_6H_5NSO_3$; INDOXYLSULPHURIC ACID) IN URINE.

By F. C. ASKENSTEDT, M. D.,
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Professor of Physical Diagnosis in the Southwestern Homoeopathic Medical College.

Abnormal metabolism being the fundamental condition of disease, its recognition before gross pathological changes have taken place and the discovery of its cause or causes become of paramount importance in medicine. Improper digestion will sooner or later lead to a disturbed nutrition either by failing to supply the body with a sufficient amount of the normal end products of digestion or by favoring the production and absorption into the circulation of abnormal elements, the result of bacterial activity. Since it has been shown that the presence of bacteria is not essential to normal digestion, their growth in the alimentary tract and the appearance in the circulation of the products of their activities may always be considered abnormal. The pathogenic action of some of these products is quite evident in such conditions as cholera and other infective diarrhoeas; in other infections the toxic action may be more gradual and hence less apparent, as

for example in scurvy and pernicious anæmia. Clinical experience suggests that the bacteria usually found in the intestinal canal, when permitted an unusual growth, may lead to gradual intoxication. It is evident that a natural immunity to these organisms and their products exists, but that this immunity can easily be broken down is shown by the virulence occasionally manifested by the *Bacillus coli*, and a continued excessive production of absorbable decomposition products foreign to a normal metabolism will prove at least a weak point in the human economy.

The various methods employed for the determination of the extent of bacterial growth in the intestines all possess certain deficiencies, but as much may be said against almost any other clinical test, and it is, after all, its comparative value that will accord any clinical method a place in medicine. Besides, a method of scientific accuracy will lose much of its practical utility by a demand for extensive laboratory equipment and special skill not possessed by the average clinician. The estimation of the relative numbers of aerobic and anaerobic bacteria in the faeces by proper culture methods or the estimation of the extent of the intestinal putrefaction by determining the amount of ethereal sulphates in the urine has some clinical value, but such processes demand time and laboratory facilities not usually at the disposal of the practicing physician. The same may be said of the ordinary quantitative tests for urinary indican, a derivative of bacterial decomposition in the intestines of the tryptophane group of proteids with formation of indol. The qualitative tests for indican advanced by Jaffé, Obermeyer, and Rosenbach, now most in vogue, have only one feature to recommend them, their simplicity. But they are crude and unreliable and afford no means of estimation available for comparison or record. Folin's method, comparing the indigo color obtained in the urinary extract with a dilution of Fehling's blue reagent for sugar, affords but a very rough estimate.

After considerable experimentation, I have evolved from the Obermeyer test a modification which though still possessing certain imperfections, yet combines the advantages of the ordinary quantitative tests for indican with a greatly simplified technique, rendering it, to my mind, the one best adapted to the requirements and limitations of the medical practitioner.

The following defects in Jaffé's qualitative test have been avoided:

1. The addition of either too small an amount of the oxidizing substance, failing to convert all of the indican into blue indigo, or adding too much of the oxygen carrier, thus by the excess of oxygen reducing part of the indigo formed into yellow isatin. This defect I tried at first to obviate by employing a definite amount of a potassium permanganate solution according to the specific gravity of the urine, but after using various modifications of this scheme, it was found that the Obermeyer fluid, when the extraction with chloroform is instantly made, affords a higher and more reliable percentage of indigo blue.

2. The quantity of chloroform (2 to 4 c.c. to 10 c.c. of urine) generally recommended is too small

for full extraction of the indigo. Eight c.c. of chloroform to 10 c.c. of urine will be found sufficient when the percentage of indigo does not exceed 0.002.

3. The chloroform precipitate is more or less colored with air bubbles, urates, bile pigments, indigo red, etc., usually rendering impossible even an approximate estimate of the quantity of the indigo blue by its color. In making a quantitative estimate by comparing the color of the extract with a given standard, which is the only feasible method when a small quantity of the urine is tested, it is important to have the extract as free from contaminating colors as possible. To attain this, the chloroform precipitate is washed with water and dissolved in alcohol, which will largely clear the extract of undesirable shades.

The equipment consists of one graduated and one plain test tube, of equal size, with stoppers. (Two ordinary test tubes, with cork stoppers, and a small graduate may be used.) A solution of 0.4 per cent. of iron perchloride in hydrochloric acid. A solution of pure indigo blue in sulphuric acid, with dropper to which it is so adjusted that each drop will hold exactly 0.000165 mg. of indigo blue. (The color of this solution keeps quite well in an amber colored bottle.) A solution of picric acid in alcohol, 1 to about 5,000. Chloroform. Alcohol (denatured will answer).

The test is carried out as follows: To 10 c.c. of urine in a test tube add 10 c.c. of the ferric chloride solution and mix by inverting the tube once; then add quickly 8 c.c. of chloroform, and extract the indigo in formation by shaking the tube 400 times, holding it in a horizontal position. After this let the chloroform fall to the bottom of the tube, then pour off most of the supernatant fluid, fill the tube nearly full with water, invert it a few times to wash the chloroform and let this again precipitate in the tube, and pour off most of the water. Repeat twice this process of washing, taking care that no chloroform escapes with the wash water, and allowing not more than 2 or 3 c.c. of the last wash water to remain over the chloroform. Now add from 13 to 15 c.c. of alcohol and mix by shaking. A clear blue fluid should result. If hazy, add one or two c.c. more of alcohol until the fluid clears up. Compare the color of this fluid with an equal quantity of a standard solution of indigo blue in the second test tube by holding the two test tubes in front of a white surface. This standard solution is made by pouring into the empty second tube a quantity of water equal to the amount of the fluid in the first tube, and then dropping the stock solution of indigo blue into the water, inverting the tube after each drop, until both solutions have the same amount of blue color. If this requires four drops of the stock solution the percentage is 0.0004; if five drops, 0.0005; if six drops, 0.0006, etc.

The indican extract will often prove slightly greenish. By adding one or more drops of the picric acid solution to the standard solution in the test tube, this can be made to conform to the color of the extract. Albumin or bile in the urine will not

interfere with the estimation; sugar reduces it. To compensate for indican not collected by the chloroform and the small amount lost in the washings, add twenty per cent. to the final result. Urine containing 0.002 per cent. or more of indican, or giving a blackish extract, should be diluted with equal quantity of water and retested.

This test will require but one fourth of the time of the ordinary Jaffé's and Obermeyer's quantitative tests, no expensive laboratory equipment is necessary, a very slight expense of chemicals is incurred, and the result I believe to be fully as accurate. Its value can be easily ascertained by diluting a urine of high indican percentage several times with known quantities of water and testing the diluted urine each time.

The quantity of indican in the urine being very small and susceptible to chemical change, it is important that all utensils with which the urine comes in contact should be scrupulously clean. Certain gases in the laboratory, notably formaldehyde, prevent the formation of indigo, and should be excluded.

Under ordinary conditions the urine will retain its indican percentage for a number of days, even at warm temperatures. The following experiments have convinced me, however, that a microorganism may at times be present which induces rapid decomposition of indican: One bottle held a specimen of urine ten consecutive days, and later another specimen for five days, the urine being tested each day for its indican percentage. But little change in the indican was observed in these specimens. To my surprise a third fresh specimen, which when poured into the bottle contained 0.0005 per cent. of indican, was found to give no reaction for indican after the first twenty-four hours. Another fresh specimen of urine was placed in the bottle with the same result, although the same urine left in a control bottle showed no change in indican. After emptying the first bottle, rinsing it out once or twice with water, and pouring some more fresh urine into it, the indican disappeared in ten hours. The bottle was then sterilized with heat, and after this no further trouble with the bottle was experienced. Pushing my experiments a little farther, it was found that camphor failed to inhibit the destruction of indican, but corrosive sublimate proved an efficient preservative and did not in any way interfere with the indican test. I had also taken notice that all the specimens of urine brought from a certain hospital uniformly failed to give a reaction for indican, and by adding corrosive sublimate to the urine of these hospital patients immediately after the urination, positive reaction for indican was obtained.

Inasmuch as urinary indican is always derived from bacterial growth, and does not serve any useful purpose in the economy of man, its presence cannot be considered physiological. It is true that nearly all urines contain at least a trace of indican, but it would seem as rational to consider dental caries physiological because of its common occurrence. It may not be amiss, however, to adopt some arbitrary standard of average excretion, for a marked excess of indican is invariably associated with some gross pathological lesion. Depending, as it does, upon proteid decomposition, the ratio be-

The end of the pipette should hang from the rim of the opening only and not be inserted into the fluid from the outside of the pipette.

tween the output of urea and indican affords a better standard for comparison than the percentage of indican alone, although the indican excretion is always subject to relatively greater fluctuations than that of urea. In apparent health the ratio will show an average of 1 of indican to about 2,500 of urea, varying from 0, in about 5 per cent. of cases, to 1 of indican to 1,500 of urea. In pronounced disturbance of digestion it may run as low as 1 to 100. The general average excretion of indican during twenty-four hours is, in my experience, approximately 8 to 10 milligrammes. A more convenient, though only a rough estimate, of the general average may be had by dividing the last two figures of the specific gravity of the urine by three, the quotient when multiplied by 0.0001 will give the mean percentage, or slightly less. Even in apparent health the excretion of indican will show a marked variation from day to day without evident cause, hence much dependence cannot be placed upon a single estimate, but a continued high excretion points unerringly to a seriously impaired digestive function; and as a sharp knife is preferable to one that is dull, so an accurate test for indican will be found more useful than the crude methods now generally employed.

817 FOURTH AVENUE.

MENTAL HYGIENE.

Appropos of the Increase of Insanity in the United States.

By C. E. WOOD, M. D.,

New York.

United States Public Health and Marine Hospital Service.

Insanity is a more or less elastic term that has been very much abused medicolegally in recent years owing to the fact that there are certain borderline cases that are very difficult to classify. Arguments are carried so far that a large number of persons, including jurors, are led to believe that insanity is a relative term and that the state is one of unusual development along some perfectly normal state of mind. There is, however, a very marked difference between this state of mind, which is an attribute of genius or high culture, and the abnormal development in which delusions are present and judgment is so impaired that the individual is a menace to himself or to the public. The rarity of perfect judgment and the difficulty of affixing a standard of judgment for a given individual is the loophole through which many criminals have escaped justice. The newspaper expression "suddenly became insane" is seen so often that one unfamiliar with insanity is led to believe that such is the usual onset of the disease, which belief is erroneous. Such cases occur but rarely and many a victim of insanity would avoid being a victim if the changes in disposition, mood, and character were heeded and means taken to prevent the further manifestations. Sometimes the onset is so subtle and the progress so gradual that it is not recognized by constant associates, but usually the changes are long recognized. Yet the individual keeps struggling and working or repeating constantly some injurious form of excitement, using up more nerve energy continually than is accumulated. Eventually the borderline between sanity and insanity is crossed, and the experience of

the past has been that the individual will never be quite the same again mentally. The acme has been reached and passed. It is only within very recent years that the States have been turning the insane over to the directors of the clinics of medical schools for observation and study and for the instruction of the students. The increase in insanity in this country may, in part, be due to more prompt recognition through the knowledge thus gained. Realizing that insanity is on the increase and that it is difficult and even impossible to effect a recovery in the large majority of cases, it becomes of the greatest import to disseminate knowledge tending to its prevention and to make use of all the observation and study of the various types in the past to endeavor to improve the treatment and find means of cure. In the absence of sufficient knowledge to insure recovery, mental hygiene, the development and conservation of the mental faculties, becomes of most vital importance to the public health.

There is no other country in the world where the problem is so complicated as it is in America, owing to the extreme variation in the mentality of the races we have to educate and assimilate. In most other countries they merely have to deal with the universal inequality in the mentality of two individuals of the same race. It is in education that the development of power and self control lies, and upon education depends the mental stability as much as upon the amount of mentality with which the individual is endowed at birth. Even two members of the same family are not born with an equal amount of brain power and there is a marked variability in different families of the same race and a more marked variation in different races. It is manifestly impossible to educate a feeble minded child in the same class room with a gifted child at the same rate of speed and by the same methods and get equally good results in both cases. It is just as impracticable to try the same methods in the education of a child just removed from savagery or a semibarbarous life such as are led by many of our immigrants prior to their arrival. Some cases are remarkably successful, but the system is undoubtedly responsible for overcrowding on the one hand, resulting in many instances in nervous diseases and insanity and resulting on the other hand in lack of stimulus. Recognition of this has led to the success of many of the private schools of such a city as New York.

It has been observed that the sexes develop unequally after puberty and that maturity is reached very much more rapidly by girls after this age than by boys. Girls easily excel in their studies during this period and in mixed schools with a competitive system of promotion the relative failures of the boys are the cause of much introspection, moroseness, and delusions of persecution that even assume the nature of paranoia. There are many arguments outside of the field of psychiatry for and against separation of the sexes at this time of life, but the competitive system of promotion at this period of life should be abolished. Girls are very much more liable to nervous breakdowns at this period than at any other. Chorea, tics, hysteria, myotonia, epilepsy, migraine, neurasthenia, and dementia præcox manifest themselves. At this time the greatest care and judgment are needed in handling school children.

Boys become discouraged by their failure to come up to the average made by more rapidly developing girls of the same age and leave the schools unqualified to meet the requirements of the struggle for existence. The misery that follows is read daily in faces that one sees everywhere in a city. The fault is not of the individual, but of the system which discourages instead of inspires. Not only is the system of education wrong for the best development of boys, but it is equally wrong for preparing girls for the highest functions in life. Many girls are herded into the various businesses and factories, from which many of them marry without any conception whatsoever of the duties that they are assuming. The finish is only too frequently the insane asylum after the preliminary state of mismanagement, discontent, estrangement, and divorce. Let those who choose acquire a classical or academic education, but what the masses need is more trade schools for boys and more education on the part of girls as to how best to perform the duties of wife and mother. This knowledge would lead to infinitely more happiness than the memorization of any number of unintelligible ramblings of so called poets and the study of dead languages, which do not give a child any more mental exercise and are of less practical value. In still another way do our schools fall short, and that is in not being designed to meet the requirements of the backward or feebleminded child. These are forced to attend classes with children of a lesser age. Too frequently they are self conscious and aware of their difficulties, and the ridicule to which they are subjected in many instances results in their being harmed instead of benefited by their school experience, and they are not able to reach as high a state of development as would otherwise be possible. Every case observed of a child that does not learn rapidly should be investigated by a qualified practitioner. Many times it is due to easily remedied causes, such as adenoids, enlarged tonsils, malnutrition, defective vision, etc. If it is found to be due to an inherent deficiency in the brain power, the child should be placed in an institution where he can receive more careful individual instruction, to avoid subjecting the already weak brain to an unbearable strain. Less than six per cent. of feeble minded receive the benefit of special institutional education. Heredity plays an important part, inasmuch as Nature seems to show as strong a tendency to evolution in the wrong direction as she shows in the right direction; and alcoholism in one generation may be followed by functional neuroses in the next generation; and functional neuroses in one generation by insanity in the next. The line between sanity and insanity is rarely crossed in more than one direction. The road leading up to the line is often optional, and there are many signs of warning. Quite frequently a pause to rest in the life of one suffering from neurasthenia saves the State the care of a case of melancholia in the next generation. The cities of New York and Chicago have so far recognized the importance of the great necessity for a study of the individual cases that there has been employed a corps of trained nurses to aid with the work of relieving the ailments of scholars under direction of the medical school inspector in the department

of health, educating parents in hygiene and sanitation and in the care of infants.

While great attention is being paid to the proper care and rest of the school children, and while various newspapers and children's societies are sending children to the country for a rest, there is a constant stream of immigrants pouring into the country, many of whom are over the school age and with absolutely no education, who come from a quiet rural life and make up the vast multitude of laborers and factory hands. The sweat shops are full of them. Their life becomes at once the most strenuous and the most monotonous in existence. Some of them try to improve their condition by mastering the English language, studying in the night schools. Some wander about at night and become victims of the social evil. They are ill prepared for the conditions with which they meet, and the result is seen in our asylums, where in some instances more than seventy-five per cent. of inmates are of foreign birth, and have had little or no education. A large majority of them escape deportation by the laxness of our laws, and the taxpayers have to support for life one insane public charge of foreign birth for every 1,700 of population. Most of these are in State institutions, but some are cared for by the government. Census reports show 19.5 per cent. of the United States population to be foreign born and that 34.3 per cent. of all insane in hospitals in the United States are foreign born. In all there are at least 50,000 insane of foreign birth in our public institutions, and the cost of maintenance is more than \$7,000,000 annually. The causes of insanity in these people are many, but one great factor is the severe mental strain to which each individual is subjected, combined with lack of proper rest. Inasmuch as it is a problem of such economical importance, would it not be advisable to devise laws tending to build up the mental stamina by educating these individuals compulsorily and providing for a legal period of rest covering a few days at stated intervals, and thus avoid the permanent public maintenance of such a large percentage? A shorter way out of the difficulty would be to provide for the deportation of all individuals of foreign birth who are not naturalized and who have become public charges, but it would be manifestly more humane to attempt to reduce the amount of insanity among them.

Not only is there an increasing number of cases of insanity in individuals of foreign birth, but also in the native population. The conditions of city life are such that an average child grows up in an apartment with few desirable playmates and no playground but the street. The ventilation of most of the houses is inadequate. As a result the child becomes ill nourished and neurotic, and these factors lead to inaptitude for study, with the usual results. If such a child can be properly taken care of he may make a very desirable citizen, but many of them become selfish and introspective and of no value to the nation. Many of them eventually become dissipated, and some become insane.

Nervous diseases and insanity are very prevalent among the women of the upper middle classes who live a life of luxury and idleness. They soon tire of

all ordinary forms of amusement, then take to excesses of various kinds, later become blasé, then introspective, self centred, and are then attacked with the most stubborn functional nervous disorders which a neurologist is called upon to treat. It is frequently necessary to take very strenuous measures to avert threatened insanity.

The men of the laboring classes make up the greatest number of victims of insanity, probably due to the exposure and the severe mental and physical strain which they undergo, combined with the fact that they so frequently have responsibilities that they simply cannot shift until the crisis is reached and they have passed over the line from sanity to insanity. The majority of these men are aliens of little or no education.

Tuberculosis, syphilis, nutritional disorders, disorders of circulation, alcoholism, infections, and intoxications are largely preventable ætiological factors of insanity. Tumors and trauma are only partially avoidable. The former factors largely depend on ignorance or wilful carelessness, and it is frequently the case that they are found in the ancestry of individuals of unstable mental equilibrium. Proper education of such individuals sometimes results in escape from affliction of this character, but defective education resulting in lack of self control, combined with severe mental or emotional strain, results in adding another to the roll of inmates of our asylums.

Restriction of excitement, fatigue, and mental effort should be made in these individuals. Marriage of individuals of the type of their ancestry should be prohibited. Already there are State laws which prohibit the marriage of the tuberculous and those with venereal diseases. These should be extended and more rigidly enforced. Syphilis has properly been called the arch enemy of nerve tissue, but strain as a determining factor is none the less important. Perhaps it is a wise provision that nervous diseases which are so largely the result of indiscretions are so intractable and that nerve tissue once destroyed cannot be replaced. If it were not so there would be an even greater tendency to degeneracy, for many exceedingly injurious habits are exceedingly pleasant. It is also a wise provision that mild forms of nervous disorders exist and act as danger signals, warning us before it is too late.

Recovery from the milder forms of nervous diseases is a tedious and long process, but not impossible. From an economical standpoint it is far better to take an occasional prophylactic rest and give the faculties a chance to recuperate.

Mental disease is frequently precipitated in those predisposed by physical and mental privations as well as by excesses. Change of scene and recreation are essential to a healthy state of mind. Public playgrounds, especially those designed to give purposeful exercise, such as The Children's Farm School of New York, do great work in supplying necessary diversion.

From a consideration of the ætiological factors of nervous diseases and insanity, in view of the fact that the cure is difficult and oftentimes impossible, mental hygiene, the proper development and conservation of the mental faculties, becomes of the utmost importance from the standpoint of public

health. Some of the measures advocated are: 1. The establishment of more public schools for feeble minded children. 2. Continued maintenance of schools for separate races. 3. Abolition of the system of competitive examination for promotion in mixed schools. 4. Separation of girls and boys during the period of most rapid development. 5. Establishment of more trade schools for boys and girls. 6. Extension of the teaching of domestic science in public schools. 7. Extension of the park system and playgrounds. 8. Extension and more rigid enforcement of existing marriage laws. 9. Education, compulsory, of uneducated individuals, particularly immigrants, regardless of age. 10. Passage of compulsory vacation laws. 11. More concentrated effort to find further causes of insanity and to find at any cost the cure and to educate the public in the way to live in order to prevent it.

Correspondence.

LETTER FROM LONDON.

Medical Inspection of School Children and School Clinics.—The Labelling of Patent Medicines.—The Increase of Insanity.—Stage Methods in Quackery.

LONDON, September 21, 1909.

The Act for the Medical Inspection of School Children, although not very long in force, has disclosed the fact that the number of children requiring treatment for chronic ailments is very large and is in fact in excess of the estimates made by those who a few years ago were called alarmists. In London, although as yet the work is by no means complete, it is quite clear that the number of such children is very large, and the Education Committee, which recommended to the County Council the adoption of a temporizing policy, itself acknowledged that the number of children suffering from three classes of disorders alone—namely, discharging ears, bad vision, and ringworm—amounted to a total of over 43,000. In addition, there are of course a multitude of children suffering from tuberculosis, anæmia, and other debilitating disorders for whose treatment the County Council does not appear to contemplate making any provision whatever. The decision of the County Council to endeavor to enter into arrangements with voluntary hospitals to treat children suffering from the three classes of disorders is open to certain objections. It violates the principle upon which voluntary hospitals are founded, as it diverts their resources to a purpose not contemplated by those who contribute to their funds; it would swamp out patient departments with cases requiring only routine treatment, thus working counter to the modern view that out patient departments should be consultative, and would impose upon the medical profession a large increase in the unpaid work already done for the community. The British Medical Association recommend that the County Council should establish school clinics at suitable centres in the metropolis for the treatment of the very large mass of cases revealed by medical inspection to present deficiencies which could be readily and economically treated if dealt with together at suitable centres conveniently sit-

uated in regard to the schools. The *Times* in a recent issue has drawn attention to the action taken on behalf of the British Medical Association and has expressed its regret that London is not to follow the example of some German towns in establishing school clinics.

Captain Craig has been asking some further questions in Parliament with reference to quack medicines. A few days ago he asked the Home Secretary whether he would consider the advisability of issuing regulations making it compulsory on all manufacturers of medicine liable to patent medicine duty to print on the label on the bottle or other vessel in which such was sold the full ingredients of such bottles or vessels, as well as the diseases which they purported to cure, and whether he would consider the advisability of increasing the size of the lettering of the government stamp as a further precaution against ignorant people believing that the contents were guaranteed by the government. Mr. Gladstone replied: "I am in communication with the Privy Council office about the point raised in the first part of the question, but I am disposed to think that the matter may be one of sufficient importance for an inquiry by a select committee next session. As regards the second part of the question, new designs for patent medicine stamps are being adopted and these will more clearly indicate that the stamp does not imply any government guarantee." Mr. Lynch pointed out that in some foreign countries it was an obligation to print the full prescription on the outside of the bottle or the case of patent medicines.

The increase of lunacy in this country is unfortunately fully borne out by the report of the Commissioners in Lunacy for the year 1908, just issued. It shows that the total number of certified insane persons in England and Wales on January 1, 1909, was 128,787, of whom 10,393 were private patients, 117,377 pauper patients, and 1,017 criminal lunatics. On January 1, 1908, the total number of certified insane was 126,084; therefore the increase for the year was 2,703, which may be contrasted with that of 2,096 for 1907, of 2,009 for 1906, and of 2,150 for 1905. In the last ten years the certified insane have increased from one in every 303 to one in every 278 of the general population. Some of this increase is more apparent than real, and is due to two main causes—accumulation within asylums and a greater rate of flow from the considerable reserve of uncertified insane in the country into the certified class. In this relation the commissioners this year draw attention to an interesting fact, namely, that the opening of new asylum accommodation has the effect of considerably raising the admission rate of new patients by encouraging the removal from workhouse care of more than the usual output and possibly by favoring a greater freedom of certification. The part of the report dealing with the causes of insanity in the newly admitted is of considerable interest. Alcoholism was assigned as a cause in 16.9 per cent., acquired syphilis in 5.5 per cent., influenza in 3.1 per cent., critical periods in 18.5 per cent., and mental stress in 23 per cent. Epilepsy was assigned as a cause in no less than 5.8 per cent., and other nervous diseases in an additional 4.2 per cent. The compara-

tive frequency of cardiovascular degeneration in association with insanity is commented upon by the commissioners, who gave the proportion as 4.4 per cent. As to hereditary influences, an insane heredity was ascertained in 21.9 per cent., an alcoholic heredity in 5.3 per cent., and one of other neuropathies in 3.6 per cent., giving a total neuropathic heredity in 30.8 per cent. of the first attack cases. The commissioners believe that much benefit would result from the provisions of observation wards, reception houses, and mental hospitals into which the insane could be received on the first manifestation of derangement. They therefore urge the desirability of fresh legislation providing for the notification and registration of cases of "unconfirmed" insanity. These suggestions, the commissioners say, could be carried into effect by only slight modifications of the Lunacy Acts, and there can be no doubt that their adoption by the Lord Chancellor would prove of immediate value. From them would follow a considerable pecuniary saving, the formation of special hospitals and psychiatric clinics with their attendant advantages to the scientific study and treatment of insanity, and improved conditions for many thousands of insane people.

The stage of the lower class musical halls is frequently made use of by quacks in England to draw money from their dupes. One of these was recently brought to hook at Wigan. It appeared from the evidence that the defendant gave entertainments on the stage as a pistol shot and thrower of the lasso, and sometimes, under the title of the "Mighty Medicine Man," treated cases on the stage and elsewhere. In dealing with the blind he licked their eyes, maintaining that in this way he got rid of the skin which caused the blindness. He also sold bottles of lotion which on analysis proved to be a solution of permanganate of potassium, one part in 1,750. Such a solution, said the borough analyst, could be neither injurious nor beneficial. The prisoner brought forward two witnesses who said benefit had been received at his hands, one of them being the aunt of a child which had a lump on its back and was unable to walk until it came under the prisoner's treatment. The prisoner, in giving evidence, stated that he had taken to the medicine business, of which he had obtained some knowledge from the Indians, because the competition in the pistol shooting and lassoing line was so severe. He was convicted of obtaining money by false pretenses and sentenced to three months' imprisonment.

Therapeutical Notes.

The Treatment of Morphine and Cocaine Addiction.—In the *Journal of the American Medical Association* for September 25, 1909, Dr. Alexander Lambert, of New York, describes the treatment used successfully by Mr. Charles B. Towns, and made known by him to the Opium Congress at Shanghai. Dr. Lambert says he has been using the treatment in Bellevue Hospital for some time past and with gratifying results. Dr. Lambert recognizes and mentions the fact that there are many factors to be considered in treating those addicted to narcotic drugs. Often

the physician has the morally perverted to deal with, besides those who have been suffering mental or physical pain. After a few months' use of cocaine, he says, there arises a form of persecutory insanity which convinces those addicted to the drug that every one and all the world is against them, and they refuse to listen to any advice. The specific in Towns's treatment consists of a mixture of the old fifteen per cent. tincture of belladonna, fluid extract of xanthoxylum (prickly ash), and fluid extract of hyoscyamus mixed in the following proportions:

R	Tincture of belladonna,	℥ii;
	Fluid extract of prickly ash,	
	Fluid extract of hyoscyamus,	āā ℥i.

M.

The treatment of a case of either morphinomania or cocainomania as outlined by Lambert is as follows:

Before beginning the treatment give four compound cathartic pills [U. S. P.] and five grains of blue mass. An enema of soap suds is also given to clean out the rectum and sigmoid. When the pills have begun to act begin with the belladonna, prickly ash and hyoscyamus mixture, giving six to eight minims every hour, until signs of belladonna intoxication are observed. Every six hours increase the specific two minims until fourteen or sixteen minims are being taken every hour, but do not increase the dose above sixteen minims. With the first dose of the specific give from one half to two thirds of the usual total daily dose of opium, morphine, or cocaine which the patient is taking at the time of his treatment. Divide this amount of narcotic in three doses and give them at half hour intervals, by mouth or by hypodermic injection, as the patient is accustomed to take it. After the first dose of the specific, wait fourteen hours and then give four compound cathartic pills and five grains of blue mass; again, six hours later, repeat the four compound cathartic pills, or four to six of the vegetable cathartic pills of the United States Pharmacopœia. It is essential that the cathartic should act at this time, and, if the above amounts do not produce the desired action within three or four hours, they must be repeated, with five to ten grains of blue mass. Dr. Lambert says it is astonishing how difficult it sometimes is to obtain a cathartic action at this period, but cathartics must be persisted in until a movement is obtained. If this is not done, the patients are liable to begin to vomit, and the distressing symptoms of the narcotic withdrawal will come out in full force. An oxgall enema is sometimes of assistance. After the bowels have acted, but not before, one third or one half the original dose of the narcotic may be given, in order to make the patient comfortable and contented and ready for the final stage. Twelve hours after the second dose of the narcotic again give four compound cathartic pills or four to six vegetable cathartic pills, with five grains of blue mass, and six hours later give an ounce or more of castor oil disguised in coffee or orange juice, but not in whiskey. The castor oil produces a characteristic stool, which shows that the entire treatment may cease. This is a liquid green stool, composed of mucus and bile. After the patient has been under treatment for thirty hours, a cardiac stimulant, such as strychnine, 1/60 to 1/30 grain, should be given

every three hours. [The article, which is a valuable contribution to the study of means of obliterating the craving for narcotics, should be consulted in its entirety.—ABSTRACTOR.]

Medicinal Treatment of Rickets.—Colbeck gives the following medicinal treatment for rickets (*The Practitioner*, September, 1909):

R	Syrup of ferrous iodide,	℥i;
	Codliver oil,	ad ℥viii.
M.	et Sig.: Two teaspoonfuls to be taken three times a day after food.	
R	Phosphorated oil,	℥xvi;
	Codliver oil,	℥iv.
M.	et Sig.: One teaspoonful to be taken three times a day after meals.	
R	Codliver oil,	℥v;
	Syrup of calcium lactophosphate,	℥ss;
	Lime water,	℥ss.
M.	et Sig.: One teaspoonful to be taken three times a day after meals.	
R	Sodium hypophosphite,	gr. v;
	Calcium hypophosphite,	gr. v;
	Iron hypophosphite,	gr. ii;
	Sodium bicarbonate,	gr. v;
	Spirit of chloroform,	℥xv;
	Camphor water,	q. s. ad ℥i.
M.	et Sig.: One teaspoonful to one tablespoonful to be taken three times a day.	
R	Calcium hypophosphite,	gr. ii;
	Syrup of iron phosphate,	℥ss;
	Simple syrup, q. s., ad,	℥i.
M.	et Sig.: One teaspoonful to be taken three times a day.	
R	Syrup of iron phosphate,	℥i;
	Syrup of iron iodide,	℥i.
M.	et Sig.: Two teaspoonfuls to be taken three times a day.	

Care of the Mouth in Diabetes Mellitus.—Levi-son (*Detroit Medical Journal*, May, 1909, through *Therapeutic Gazette*, for September, 1909) points out that in the treatment of diabetes mellitus the care of the mouth is important. The organisms found in the buccal cavity thrive on the saccharine body fluids and a fetid breath, stomatitis, and pyorrhœa alveolaris often result. Every diabetic patient should constantly and faithfully use a mouth wash, and of these the liquor antisepticus alkalinus [of the National Formulary] answers every requirement. The following prescriptions by Ortnier are very useful:

R	Beta naphthol,	gr. v;
	Sodium borate,	℥i;
	Peppermint water,	℥v;
	Distilled water,	℥ii.
M.	et Sig.: Use several times daily as a mouth wash.	
For stomatitis and painful gums the following is prescribed:		
R	Tincture of opium,	℥i;
	Potassium chlorate,	℥iiss;
	Sodium borate,	℥iiss;
	Orange flower water,	℥i;
	Distilled water,	℥ii.
M.	et Sig.: Use as a gargle.	

The Treatment of Acute Bronchitis in Children.—For an infant four to five years of age Delearde (*Journal de médecine de Paris*, September 11, 1909) prescribes the following:

R	Sodium benzoate,	gr. xxx;
	Oxymel of quiv,	℥iiv;
	Syrup of tolu,	℥x;
	Syrup of orange flowers,	℥v;
	Tilia water, q. s., ad,	℥iv.
M.	Sig.: One teaspoonful in weak tea every three hours.	

Treatment of Acute Ulcerative Tonsillitis.—This condition is effectively treated, according to M. Brindel, whose article on the subject is cited in *La Clinique* for September 17, 1909, by swabbing the amygdaloid cavities with a solution of zinc chloride of the strength of one part of the chloride in thirty or twenty parts of water. An improvement will be observed the following day, when a gargle is employed, this being first painted over the ulcerated parts, so as to act as a sedative and assist in the cicatrization, which should be completed in from three to five days at the most. The following is the formula of the gargle:

- R Sodium borate,
Potassium bromide,*aa* 3i;
Refined glycerin,*ss*;
Decoction of coca leaves,*ss*;
Spirit of peppermint,*ss*;
M. Ft. gargarisma.

Manganese as a Tonic.—*The Practitioner* for September, 1909, cites a note by Guido Piccini in the *Revue de thérapeutique médico-chirurgicale* regarding the use of manganese in the treatment of anæmia and of chlorosis, either by itself or in combination with preparations of iron. Pills are prescribed as follows:

- R Manganese carbonate,*gr.* iss;
Sodium bicarbonate,
Extract of gentian,*aa* q. s.
Pulverized licorice,
Pro. pil. No. 1.

Sig.: Two to four to be taken at meals.

- R Ferrrous sulphate,*ss*;
Manganese sulphate,*ss*;
Sodium bicarbonate,*ss*;
Water,*ss*;
Glycerin,*ss*;
Honey,*ss*;
Pulverized acacia,*ss*;
Pulverized tragacanth,*gr.* xxx.

M. To make pills weighing four grains each.

The Treatment of Hyperchlorhydria.—Lemoine (*Le Nord Médical*, September 15, 1909) prescribes a mixture of pepsin and pancreatin, combined with sodium bicarbonate and pulverized nux vomica in the hyperchlorhydria which is frequently a painful symptom in cardiac subjects:

- R Pepsin,
Pancreatin, or papain,*aa* *gr.* 2½;
Sodium bicarbonate,*gr.* viiss;
Pulverized nux vomica,*gr.* ¼.

M. ft. Cachet No. 1.

Sig.: One to be taken two or three times a day after drinking milk.

For Chronic Constipation.—In *La Riforma Medica* a note is published in which the following powder is prescribed to be taken in doses of one teaspoonful or two teaspoonfuls at night on retiring. It will be seen that it is a modification of our old compound licorice powder:

- R Sublimed sulphur,
Pulverized senna leaves, previously washed in alcohol,*aa* 3ii;
Pulverized fennel seed,
Pulverized star anise seed,*aa* 3i;
Potassium bitartrate,*ss*;
Pulverized licorice,*ss*;
Ammoniated glycyrrhizin,*ss*;
Pulverized sugar,*ss*;
M. et Sig.: One or two teaspoonfuls at night.

Therapeutic Indications for Menthol.—*The Practitioner*, quoting from *Il Policlinico*, names the several indications for the use of menthol, as follows:

1. For uncontrollable vomiting in cholera.

- R Menthol,*gr.* iv;
Lactic acid,*ss*;
Brandy,
Chloroform water,*aa* 3iss.

M. et Sig.: One teaspoonful every quarter of an hour or every half hour.

2. In idiopathic asthma.

- R Menthol,*gr.* xii;
Sodium bromide,*gr.* xxx;
Brandy,*ss*;
Chloroform water,*ss*;
M. et Sig.: One teaspoonful to be taken every hour.

- R Menthol,*gr.* iii;
Sodium iodide,*gr.* xxx;
Brandy,
Mixture of acacia, [N. F.] }*aa* 3i.
Chloroform water,
M. et Sig.: One teaspoonful to be taken every hour.

4. In acute dysentery.

One drachm of pulverized ipecac is boiled for five minutes in seven ounces of water. To the filtered solution is then added—

- R Menthol,*gr.* iii;
Tincture of canella,
Mixture of acacia, [N. F.]*aa* 3i.

M.

The mixture acts as an antiseptic and controls vomiting.

5. In hyperchlorhydria.

- R Menthol,*gr.* iv;
Sodium phosphate,*gr.* i;
Crystallized sugar,*ss*;
M. In pulv. No. iii divide.

Sig.: One to be taken after each meal.

6. In hysteria.

- R Menthol,*gr.* xii;
Potassium bromide,*ss*;
Tincture of gentian,*ss*;
Mixture of acacia [N. F.]
Chloroform water,*aa* 3v.

M. et Sig.: One tablespoonful to be taken four times a day after meals.

Pills for the Appetite.—Orexine is, as its name implies, an appetite provoker, and is said to have been found useful in the treatment of anorexia. In the following combination it forms a tonic appetizer:

- R Orexine tannate,*ss*;
Saccharated oxide of iron,*gr.* xv;
Extract of gentian,
Pulverized marshmallow,*aa* q. s.

M. et divide in pilulas No. XX.

Sig.: One pill to be taken, followed by a glassful of water, half an hour before meals.

Treatment of Obesity.—Huchard (*Journal de médecine de Paris*, September 18, 1909) gives twice a day in the treatment of the obesity of middle aged persons, where there is no cardiac lesion, a cachet of the following composition:

- R Dry pulverized thyroid gland,*gr.* ¼;
Caffeine,*gr.* ¼;
Sparteine sulphate,*gr.* ¼;
M. ft. cachet.

It is ordered that no sugar be taken, or pastries, sauces, or butter; and very little bread, or liquids.

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AN AFTERMATH.

After each of the parades last week there was an outbreak of "colds," bronchitis, conjunctivitis, laryngitis, and other mucous membrane inflammations. These were undoubtedly due to the enormous quantity of dust raised by the tramping multitudes and especially by the thousands of motor cars that spun up and down the line of march after each procession. With a view of scrupulously locking the door after the usual equine ravishment, we may remind our readers that these phenomena are probably preventable by careful attention to the toilet of the nose and throat, night and morning. Spraying the nasal and pharyngeal membranes with some mild antiseptic solution should, in our climate, always precede or follow the brushing of the teeth.

THE HOLMES CENTENARY.

Though the late Dr. Oliver Wendell Holmes was better known to the public at large for his achievements in general literature than for his medical career, those of us who were privileged to attend his lectures in the Harvard Medical School can never forget the charm of his teaching and of his presence, and the annals of medicine will forever hold forth the memory of his early and insistent teaching in

the matter of the infectious nature of puerperal fever, teaching for which he endured persecution hardly less acrimonious than that to which Semelweis was subsequently subjected.

It is peculiarly fitting, therefore, that the Medical Society of the County of New York should have appointed a special meeting for doing honor to Holmes's memory. Though it was in August that the actual hundredth anniversary of his birth occurred, the deviation of a few weeks from the precise date will everywhere be acknowledged as not out of keeping with custom. The celebration is to be held on Saturday evening, October 9th.

THE THERAPEUTIC USES OF HORDENINE.

Hordenine was obtained from barley by Léger in 1906. Watery solutions of twenty-five per cent. or fifty per cent. (saturated) are very stable. Its toxicity varies between 0.25 and 1 gramme to the kilogramme when given subcutaneously. Poisoning from the drug is made evident by nervous disturbances, such as paralysis and hallucinations, and cessation of the respiration, which precedes the stopping of the heart's action. In the *Gazette hebdomadaire des sciences médicales de Bordeaux* for December, 1908, Sabrazès and Guérive have given a detailed account of their experience with the drug. In infantile diarrhoea it was given in daily amounts of five centigrammes, and as much for each year of the child's age. Out of sixteen children, seven recovered in from two to fourteen days; in two instances when the use of the drug was stopped the diarrhoea returned. The remaining patients were very seriously ill, and no apparent effect from the drug was manifest. In adults simple diarrhoea was quickly controlled, but in three cases of intestinal tuberculous disease there was no marked effect. Six patients out of nine with mucomembranous enteritis were benefited by the treatment; the pains stopped and strength was regained.

In six cases of typhoid fever hordenine in daily amounts of fifty centigrammes (seven grains and a half), taken for a number of weeks, caused the stools to be formed and increased the arterial tension. One of the patients had slight constipation and a mild relapse at the time the temperature was falling. Altogether, the cases of typhoid underwent their evolution without any complications. In seven cases of dysentery, six being of the tropical type, and where a daily dose of from one to three grammes of the drug was given, Joyeux obtained successful results. In ten cases of dyspepsia with stasis and a very acid excessive secretion, favorable

results were obtained. The pain disappeared, gastric retention was lessened, and the amount of hydrochloric acid was reduced, likewise the activity of the ferments, while the intestinal functions became normal and the patient's weight increased.

In hyposystolia, due to various causes, and in cardiac lesions with dyspnoea, hordenine sulphate was given subcutaneously in doses of twenty-five centigrammes twice a day for three days running; it decreased the number of respirations and the pulse rate, increased the arterial tension, and produced decided diuresis. Although this drug does not possess the power of digitalis, strophanthus, or sparteine, its tonic effect on the heart is marked. It also has the great advantage of being virtually nonpoisonous, the dangerous dose for a man being over sixty grammes. Sabrazès and Guérive recommend this medicament particularly in enteritis and gastrointestinal diseases in daily amounts of fifty centigrammes.

"FIRST AID" AND THE HUDSON-FULTON CELEBRATION.

Last week the city of New York passed through such turmoil as great centres of population are rarely called upon to endure, involving almost incalculable interference with the ordinary pursuits of its citizens, with not a few hardships consequent thereon. The strain was borne cheerfully, even enthusiastically, for it is not often that we are called upon to celebrate such significant centenaries. New York throngs are wont to be good humored, but the unusual tax on their forbearance was borne on this occasion with more than ordinary cheerfulness.

As will be seen in our news columns, the police were remarkably efficient on the whole, even if individual instances of unjustifiable severity were observed, and the ambulance service, under the management of Surgeon Pilcher, of the Army Medical Corps, was so efficient that minor injuries were promptly and satisfactorily cared for. Even hysterical and other nervous attacks received immediate attention. The government of the city is to be heartily commended on the manner in which the physical needs of the throngs were handled.

TRAVEL VIBRATION.

At present the vibratory method of treatment ranks high in popular estimation. Those who employ vibratory apparatus have found that systematic methods do bring results; the soothing effect of the rhythmic thrill calms and tranquillizes many a miserable neurasthenic. Leaving aside the *modus op-*

erandi, the parallel influence of train and trolley riding may arouse some interest. As we sit in the moving vehicle there is transmitted a distinct shock, or thrill, of a very steady and rhythmic character, which by all reasoning ought to exert some therapeutic influence if vibratory apparatus exerts any. At least the treatment should be as real, whether actually in a physician's office or upon a way of travel.

An idea here presents itself as to the relief which neurasthenics experience from travel. They have a diversion of mind with the gentle stimulus of the motion of the car. On the other hand, we are confronted with possible ill effects due to this same vibratory shock in cases for which such stimulation is unwise. It is probable that there are detrimental results from it, as well as beneficial, if it is sufficiently forceful to accomplish any positive effect. So we may find headache, tremor, dizziness, nausea, and reflexes produced whenever this vibration is contraindicated. Sudden jolts and other shocks in transit are no doubt responsible for damages, not alone to the machinery and apparatus of the train or vehicle, but to the passengers themselves. We entertain but slight alarm on that score, however. Americans will travel regardless of any vibratory shocks, and perhaps with more beneficial than injurious consequences on the whole.

OBESITY.

The interest of the physician in treating this condition is materially heightened by the difficulty of success and the delight of the patient if success is attained, for very stout persons feel such a dislike for their condition that they look upon themselves with a disgust which they fear is shared by others. Now, there are two classes of fleshy people. In the first we can place all those who are stout as a result of disease, such as myxœdema, dropsy, and Dercum's disease (*adiposis dolorosa*). Other patients are stout very commonly from some secondary chain, as in cases of hypacidity or hyperchlorhydria, in which a perverted appetite may lead to a wrong choice of foods. The second class of obese patients includes all those who overeat in some particular, very often of the farinaceous foods, and do not have a large enough amount of meat. Eggs reinforce the deposition of fat, for the liver can break up only so much of this food, and a condition of essential or secondary hepatic torpor is apt to occur in those who become stout.

French authorities, notably Calmont and Ramond (the latter in a brief paper in the *Progrès médical* for June 12th), recommend a full meat diet, with

the limitation of liquids at mealtime, although plenty of water between meals is essential to the proper equalization of proteid waste products. In this connection some study of the functions of the liver and pancreas is evidently indicated. Pancreatic disease leads to emaciation, diarrhœa, and diabetes. On the other hand, some excess in pancreatic action, combined with insufficient steatogenic function of the liver, seems the cause of fat deposition.

One rule, very ancient, is to change completely whatever habits the patients may have in regard to the use of liquids. If they drink much at meals, forbid it. But if they have been drinking more freely between meals, order cocoa or tea or some sparkling table water. The older remedies, euonymin, podophyllin, leptandrin, aloin, sulphate of atropine, berberine, tamarinds, manna, senna, rhubarb, taraxacum, to combat constipation and intestinal atony, must be kept fresh in mind. Phsyostigma is valuable, too, in stimulating peristalsis.

THE OPENING OF THE PHILADELPHIA MEDICAL SCHOOLS.

The opening exercises of the Woman's Medical College of Pennsylvania were held on Wednesday, September 22d. Twenty-one women had been matriculated in the freshman class on that day. The Medical Department of Temple University opened its doors on Thursday, September 16th, with a freshman class of twenty-eight. The Medical Department of the University of Pennsylvania and the Jefferson Medical College began their annual sessions on Friday, September 24th. The size of the freshman class of the former could not be ascertained; ninety-eight men had registered in the freshman class of the latter on the opening day. The inauguration exercises of the session of the Medico-Chirurgical College were held on Monday, September 27th. A freshman class of 122 had registered on that date.

AN ABOMINATION OF THE BARBER'S SHOP.

At best the barber's chair is not a seat which the ordinary man, to say nothing of the fastidious, can mount with entire satisfaction. Something seems to have been accomplished of late years in the direction of improved cleanliness on the part of the barber, at least as concerns his implements, but there is still one pièce of gross carelessness which is too often encountered even in shops whose patrons are men of refinement. We refer to the practice of blowing

upon a person's face to dislodge hairs that have been cut off. It is an indignity, and it must occasionally serve to convey disease.

We can hardly imagine that a decent man would pay a second visit to a shop in which the objectionable practice was tolerated, and a public spirited individual would certainly stop the procedure on the spot. Even a mild person may ask the offending barber to substitute the brush or napkin for his puffing power. Although we cannot yet feel half sure that the appliances in question are clean, we may take it for granted that they will prove less dangerous and assuredly more endurable than the spray from the barber's mouth.

We are not sure that the Sanitary Code now in force here in New York can reasonably be stretched so as to give our health officials authority to suppress the nuisance of which we have spoken; if it cannot, we would respectfully suggest that it be so amended as to cover the case. If laryngologists find it necessary to resort to the use of glass screens to protect themselves against the involuntary emanations from the throats and noses of patients under examination—and it seems that they do—certainly the general public ought to be guarded against the blasts in which the inconsiderate barbers indulge.

OXYGEN IN THE TREATMENT OF WHOOPING COUGH.

Two physicians of Lyons, Dr. E. Weill and Dr. G. Mouriquand, have had considerable experience in the treatment of grave cases of whooping cough ("*hypercoqueluche*") by means of inhalations of oxygen. It appears from an account in the *Semaine médicale* for September 15th that Dr. Weill had for several years employed the treatment in cases of infantile bronchopneumonia, and that four years ago he observed such striking effects in the mitigation of concomitant whooping cough as to lead to the trials to which he and Dr. Mouriquand have since put the gas.

It is used only in the severer cases, and the relief afforded is said to be so evident that children sometimes ask for the inhalation and even resort to it themselves. It is the severity of the paroxysms that is relieved; their frequency seems not to be affected. Consequently, if there is no pneumonic complication, the gas is administered only during the seizures, but if bronchopneumonia also is present, it is given every hour. Stress is laid on the necessity of administering the gas unsparingly, from ten to twenty quarts at a time. It may be given while the child is asleep.

News Items.

Changes of Address.—Dr. Joseph Sailer, to 1830 Spruce Street, Philadelphia, Pa.

Dr. William R. Butt, to 1701 Chestnut Street, Philadelphia, Pa.

Dr. B. Sachs, to 135 Central Park West, New York.

Dr. Martin W. Ware, to 27 East Eighty-first Street, New York.

Dr. Max Hühner, to 110 East Sixtieth Street, New York.

Dr. Egerton S. Jackson, to 293 West Eighty-third Street, New York.

Dr. William M. Leszynsky, to 145 West Seventy-seventh Street, New York.

Dr. W. A. Gillen, Jr., to 204 New York Avenue, Brooklyn, N. Y.

The Anniversary Address of the New York Academy of Medicine will be delivered on the evening of November 18th by Dr. Louis Livingston Seaman. The subject of the address will be Personal Observation of the Sleeping Sickness in Central Africa.

St. Bartholomew's Clinic, New York.—Physicians desiring to work in the medical department of this clinic should apply at once to Dr. Ralph Tousey, 43 West Eighty-third Street, New York. The medical department comprises general medicine, children's diseases, and nervous diseases.

The Wesley M. Carpenter Lecture will be delivered at the New York Academy of Medicine on Thursday evening, October 21st, by Dr. Howard T. Ricketts, professor of pathology in the University of Chicago. His subject will be Some Aspects of Rocky Mountain Spotted Fever as Shown by Recent Investigations.

Erratum.—A line was inadvertently omitted from Table IV of the article on The Persistence of the Gonococcus in the Prostate, by Dr. G. A. De Santos Saxe, in our issue of October 2d, page 632, first column. The missing line is as follows: 11, 12 to 18 months, 31 (cases); (gonococci found in) 9, (or) 29 per cent.

The Section in Pathology of the Buffalo Academy of Medicine held a regular meeting in the Academy rooms, Public Library Building, on Tuesday evening, October 5th. The programme included the following papers: Addison's Disease, by Dr. F. C. Busch; Tuberculin Reactions, by Dr. N. G. Russell; Vaccines, by Dr. N. M. McLeod.

Mental and Physical Coordination in Education was the subject of an address delivered before the Northwestern Medical Society of Philadelphia by Professor J. Liberty Todd, principal of the Industrial Art Schools of Philadelphia. The subject was demonstrated by lantern slides, and the discussion was opened by Dr. J. Madison Taylor.

The Committee on Milk and Baby Hygiene, of Boston, has added to its membership Dr. Herbert L. Burrell, president of the Massachusetts Branch of the American National Red Cross; Dr. Charles W. Townsend, president of the New England Pediatric Society; Dr. Milton J. Rosenau, the new professor of preventive medicine at Harvard University; and Mr. George S. Mumford, president of the Commonwealth Trust Company.

The Superintendency of Hudson Street Hospital, New York.—The resignation of Mr. Hyman A. Knoll, who has been superintendent of Hudson Street Hospital since 1895, has been accepted, to take effect on April 1, 1910. A leave of absence for six months, with pay, was granted him, so that his connection with the hospital ended on October 1st. Miss Susan V. Gifford, matron of the hospital, has succeeded Mr. Knoll as superintendent.

The Oliver Wendell Holmes Centenary.—The Medical Society of the County of New York will hold a special meeting at the New York Academy of Medicine on Saturday evening, October 9th, to celebrate the one hundredth anniversary of the birth of Oliver Wendell Holmes. The following programme has been arranged: Address of welcome by the president of the society, Dr. H. Seymour Houghton; Personal Reminiscences of Oliver Wendell Holmes, by Dr. H. Maurice Richardson, of Boston; Dr. Holmes's Achievements as a Physician, by Dr. Edward O. Otis, of Boston; Holmes—Author, Poet, and Man, by Dr. William Hanna Thomson. A poem on Oliver Wendell Holmes will be read by Richard Watson Gilder.

Ammonia Instead of Brandy to be Carried by Chicago Ambulances.—It is reported that the Chief of Police of Chicago has issued an order decreeing that henceforth ambulances and patrol wagons shall carry spirits of ammonia for reviving victims of accidents instead of brandy, for the reason that ammonia is cheaper and just as effective as brandy.

Physicians Arrested for Failing to File Birth Certificates Promptly.—It is reported that sixty of the most prominent physicians of Schuylkill County, Pa., were placed under arrest on October 2d, charged with having violated the act of 1905, which requires the reporting of all births within ten days. Those convicted will be declared guilty of a misdemeanor and subjected to a fine of from \$5 to \$50.

The Cook County, Ill., Civil Service Commission announces that an examination will be held in the rooms of the commission, 547 County Building, Chicago, on October 28th, from which to secure eligibles for the position of chief of the medical staff at the Dunning Institutions. The examination is open to all citizens of the United States, and applications should be sent in to the commission at once. The position carries with it a yearly salary of \$2,500, with maintenance in the institution.

The Windham County, Conn., Medical Association will hold its semiannual meeting in Danielson, Conn., on Wednesday, October 20th, under the presidency of Dr. John Weldon, of Willimantic. There will be two sessions, one at 11 a. m., and another in the afternoon. The scientific programme includes the following papers: Malignant Decidua, by Dr. Samuel Sullivan, of New London; Etiology and Treatment of Otitis Media, by Dr. M. H. Gill, of Hartford; Expert Testimony, by the Hon. Thomas J. Kelly, of Willimantic; and the Doctor in Politics, by Dr. John Weldon, of Willimantic.

"Symposium" on Gastric Ulcer.—At a stated meeting of the New York Academy of Medicine, held on Thursday evening, October 7th, the programme consisted of a "symposium" on ulcer of the stomach. The following papers were presented: The Etiology and Symptomatology of Gastric Ulcer, by Dr. Charles G. Stockton, of Buffalo; The Surgical Treatment of Ulcer of the Stomach, by Dr. John B. Murphy, of Chicago; Gastric Ulcer in Children, by Dr. A. Jacobi; The Diagnosis of Gastric Ulcer, by Dr. Max Einhorn. A general discussion of the subject followed the reading of the papers.

The American Society of Sanitary and Moral Prophylaxis will hold a regular meeting in the New York Academy of Medicine, on Thursday, October 14th, at 8:30 p. m. The general subject for discussion will be The Past and Future Work of This Movement. Papers will be read by Dr. Prince A. Morrow, president of the society; Dr. Robert N. Willson, secretary of the Pennsylvania Society for the Prevention of Social Diseases, and Dr. Daniel R. Hooker, secretary of the Maryland Society of Social Hygiene. The discussion will be participated in by prominent members of the medical profession and the laity.

The University and Bellevue Hospital Medical College began a new year on Monday, October 4th. Chancellor Henry M. MacCracken addressed the entering class, which promises to be larger than that of last year. The chancellor spoke at some length of the life and services in Beirut, Syria, of Dr. George E. Post, who died there recently, one of the most distinguished medical graduates of the university. Announcement was made that contracts had been signed for an extension to the Carnegie Laboratory, which will cost about \$100,000, and that by a will not yet probated the medical college will receive a bequest of \$25,000.

Personal.—Dr. Smith Ely Jelliffe, after spending a year in a Psychiatric Clinic in Berlin and the Salpêtrière in Paris, has returned to New York to resume practice.

Colonel Joseph K. Weaver, of the National Guard of Pennsylvania, was elected president of the Association of Military Surgeons of the United States, at the annual meeting of the association held in Washington, D. C., during the past week.

Dr. J. J. Kinyoun, professor of bacteriology and pathology at George Washington University, has been appointed bacteriologist of the Health Department of the District of Columbia.

The Medical Society of the County of Ulster, N. Y., will hold its regular meeting in Kingston on October 12th instead of on October 5th, the postponement being due to the Hudson-Fulton celebration. If the weather is fine the meeting will be held in the pavilion of the tuberculosis camp. After the transaction of certain routine business, including the election of officers for the ensuing year, the following papers will be read: Report of the Tuberculosis Camp Work, by Dr. E. E. Norwood; The Need of a Tuberculosis Hospital for Advanced Cases, by Dr. Mark O'Meara; The Care of Incipient Cases of Tuberculosis, by Dr. Henry van Hovenberg. An invitation to be present is extended to all members of the medical profession.

The Minnesota State Medical Society will meet in annual session in Winona on October 12th, 13th, and 14th. An important feature of the programme will be a "symposium" on anterior poliomyelitis, which will be held on the first day of the convention. On Wednesday afternoon, the address of the president, Dr. Cornelius Williams, of St. Paul, will be delivered, followed by an address by Surgeon General Walter Wyman, of the Public Health and Marine Hospital Service, on Administrative Problems in Relation to the Public Health. The closing day's session will open with a "symposium" on Ophthalmia Neonatorum. A large attendance is expected, and the meeting gives promise of being one of the most successful in the history of the organization.

Pennsylvania Medical Association Condemns the Use of Sodium Benzoate.—In the course of the annual meeting of the Medical Society of the State of Pennsylvania, which was held in Philadelphia during the last week of September, the House of Delegates adopted vigorous resolutions condemning the use of food preservatives of all kinds, mentioning specifically benzoic, boric and salicylic acids and their compounds. In the opinion of the society "such preservatives are unnecessary and detrimental to the public health." The resolution concluded with the following words: "This society endorses the stand taken by the American Medical Association in its fight against food adulteration and its action in appealing to Congress for immediate amendment of the National Food and Drugs Act. This society endorses the stand taken by Dr. Harvey W. Wiley, in his campaign for pure food and pure food legislation."

American Association of Obstetricians and Gynecologists held its twenty-second annual meeting in Fort Wayne, Ind., on September 21st, 22d, and 23d, under the presidency of Dr. William Henry Humiston, of Cleveland. Dr. H. A. Bruggemann, president of the Fort Wayne Medical Society, delivered an address of welcome, which was responded to by Dr. James Edgar Sadlier, of Poughkeepsie, N. Y. The papers were of unusual excellence, and the discussions were interesting and valuable. Officers for the ensuing year were elected as follows: President, Dr. A. B. Miller, of Syracuse, N. Y.; first vice-president, Dr. Charles N. Smith, of Toledo, Ohio; second vice-president, Dr. Raleigh R. Huggins, of Pittsburgh, Pa.; secretary, Dr. William Warren Potter, of Buffalo, reelected; treasurer, Dr. X. O. Werder, of Pittsburgh, Pa. The next annual meeting of the association will be held in Syracuse, N. Y., on September 20, 21, and 22, 1910.

A Medical Officer May Command.—The controversy over the assignment of a medical officer to actual command of a hospital ship, which caused the resignation of Rear Admiral Brownson from the Bureau of Navigation in 1908, has again been revived. The Secretary of the Navy has asked an opinion as to the legality of such an assignment and Attorney General Wickersham has rendered an opinion to the effect that a medical officer not below the grade of surgeon can legally be assigned to the command of a hospital ship. It is understood that the chief of the Bureau of Navigation will probably recommend that a line officer be put in command, while Surgeon General Rixey will urge the assignment of a medical officer. In the opinion rendered, the attorney general specifically refrained from any discussion of the merits of the question as to whether or not a medical officer should be put in command, but merely stated that such a detail was legal and in accordance with the regulations. The question will arise in the near future in connection with the *Solace*, which is now being fitted out at Charlestown Navy Yard as a hospital ship for the Atlantic fleet. Neither the President nor the Secretary of the Navy has given any indication of the course they will pursue in the matter.

The Health of Pittsburgh.—During the week ending September 25, 1909, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 3 cases, 0 deaths; typhoid fever, 25 cases, 2 deaths; scarlet fever, 26 cases, 1 death; diphtheria, 17 cases, 0 deaths; measles, 6 cases, 0 deaths; whooping cough, 8 cases, 0 deaths; pulmonary tuberculosis, 53 cases, 6 deaths. The total deaths for the week numbered 149, in an estimated population of 572,000, corresponding to an annual death rate of 13.54 in a thousand and of population.

Officers of the Medical Society of the State of Pennsylvania for the ensuing year were elected as follows, at the annual meeting of the organization held recently in Philadelphia: President, Dr. Theodore B. Appel, of Lancaster; first vice-president, Dr. C. A. E. Codman, of Philadelphia; secretary, Dr. C. L. Stevens, of Athens; assistant secretary, Dr. Alexander R. Craig, of Philadelphia; treasurer, Dr. George W. Wagoner, of Johnstown. Dr. Henry Beates, Jr., Dr. H. C. Wood, Jr., and Dr. Adolph Koenig were elected representatives to attend the Ninth Decennial Convention for the Revision of the United States Pharmacopoeia. Pittsburgh was chosen as the place of meeting for 1910.

Meetings of Sections of the New York Academy of Medicine.—The regular meetings of the *Section in Surgery* and the *Section in Public Health* have been postponed to November 5th and 9th respectively.

The *Section in Neurology and Psychiatry* will meet on Monday evening, October 11th. The paper of the evening will be read by Dr. A. A. Brill on Freud's Conception of the Neuroses. Dr. Adolf Meyer and Dr. Frederick Peterson will open the discussion.

The *Section in Pediatrics* will hold a clinical meeting on Thursday evening, October 14th.

A "symposium" on Bier's Congestive Treatment will be presented at a meeting of the *Section in Orthopedic Surgery* to be held on Friday evening, October 15th. Papers will be read by Dr. Edward Adams and Dr. Martin W. Ware, and among those who will participate in the discussion are Dr. Willy Meyer, Dr. Virgil P. Gibney, and Dr. Reginald H. Sayre.

American Electrotherapeutic Association.—The nineteenth annual meeting of this organization was held in the United Engineering Societies' Building, New York, on September 28th, 29th, and 30th. An excellent programme of papers was presented, and there was an exhibition of electrical and scientific apparatus by leading manufacturers which was very complete and interesting and embodied the latest as well as standard features in electrotherapeutic appliances. Officers for the ensuing year were elected as follows: President, Dr. T. D. Crothers, of Hartford, Conn.; vice-presidents, Dr. T. H. Cannon, of Baltimore, Md., and Dr. F. E. Peckham, of Providence, R. I.; secretary, Dr. J. W. Travell, of New York, reelected; treasurer, Dr. R. J. Nunn, of Savannah, Ga., reelected; board of trustees, Dr. Charles R. Dickson, of Toronto; Dr. M. W. Brinkmann, of New York; Dr. H. F. Pitcher, of Haverhill, Mass.; Dr. F. B. Bishop, of Washington, D. C.; Dr. E. C. Titus, of New York; and Dr. Frederick H. Morse, of Boston. The next annual meeting of the association will be held in Saratoga early in September, 1910.

The Hudson-Fulton Celebration, bringing together as it did a large crowd along the line of parade, involved the need of preparation for accident cases. These preparations, which were entrusted to the National Volunteer Emergency Service, were admirably planned and carried out by the chief of the service, Adjutant General Evelyn Pilcher, and Brigadier General F. Elbert Davis. Numerous field hospitals were established along the line of parade and ambulance wagons held in readiness, while surgeons mounted on motor cycles patrolled the line of march. The police arrangements included signal station boxes with telephone communication with the hospitals. In this way even minor accidents were cared for promptly and with the least possible disturbance, assistance being always immediately available. The weather being cool, there were few prostrations, and the number of calls on the service were unusually small, showing that the police arrangements had been well planned and carried out. A large number of physicians, pharmacists, and nurses had volunteered their services for the occasion, and the work was therefore done at a merely nominal outlay.

The Health of Chicago.—During the week ending September 25, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 89 cases, 6 deaths; scarlet fever, 79 cases, 4 deaths; measles, 24 cases, 3 deaths; whooping cough, 44 cases, 3 deaths; tuberculosis, 75 cases, 62 deaths; pneumonia, 5 cases, 55 deaths; typhoid fever, 47 cases, 5 deaths; chickenpox, 8 cases, 0 deaths. The deaths from other important causes were: Cancer, 43 deaths; nervous diseases, 13 deaths; heart diseases, 47 deaths; apoplexy, 7 deaths; Bright's disease, 47 deaths; diarrhoeal diseases, under two years of age, 123 deaths; diarrhoeal diseases, over two years of age, 15 deaths. There were 13 suicides, 37 deaths due to accidents, and 5 deaths from manslaughter, making a total of 55 deaths by violence. The total number of deaths during the week was 600, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.06 in a thousand of population. The infant mortality was 229; 161 under one year of age, and 68 between one and five years of age.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of the new cases and deaths reported for the week ending October 2, 1909:

	October 2—	
	Cases.	Deaths.
Tuberculosis pulmonalis	438	118
Diphtheria	181	13
Measles	28	6
Scarlet fever	97	4
Smallpox .....	..	..
Varicella	18	..
Typhoid fever	120	25
Whooping cough	82	12
Cerebrospinal meningitis	10	7
Total	1,074	175

The Health of Philadelphia.—During the week ending Saturday, September 25, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, 1 case, 0 deaths; typhoid fever, 35 cases, 1 death; scarlet fever, 22 cases, 2 deaths; chickenpox, 15 cases, 0 deaths; diphtheria, 71 cases, 6 deaths; measles, 8 cases, 1 death; whooping cough, 18 cases, 0 deaths; tuberculosis of the lungs, 86 cases, 41 deaths; pneumonia, 15 cases, 25 deaths; erysipelas, 3 cases, 0 deaths; tetanus, 1 case, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 9 deaths; diarrhoea and enteritis, under two years of age, 61 deaths; dysentery, 2 deaths; puerperal fever, 1 death. The total deaths numbered 449 in an estimated population of 1,565,560, corresponding to an annual death rate of 14.61 in a thousand of population. The total infant mortality was 145; 122 under one year of age, and 23 between one and two years of age. There were 39 stillbirths: 19 males and 20 females. There were 7 suicides and 20 deaths due to accidents. The total precipitation was 1.11 inch.

The Mortality of New Orleans.—During the month of July, 1909, 557 deaths from all causes were reported to the Department of Health, 356 white and 201 colored. The death rate in a thousand population was 16.12 in the white population; 24.86 in the colored population, and 18.46 in the total white and colored. The total infant mortality was 104; 88 under one year of age, 60 white and 28 colored; 16 between one and two years of age, 11 white and 5 colored. There were 51 stillbirths, 31 white and 20 colored. During the month of August the total deaths reported numbered 510; 333 white and 177 colored, corresponding to a death rate of 15.08 for the white population, 21.89 for the colored, and 16.91 for the total white and colored. The total infant mortality for the month was as follows: Sixty-four under one year of age, 43 white and 21 colored; 9 between one and two years of age, 5 white and 4 colored; and 12 between two and five years of age, 7 white and 5 colored. Of the total number of deaths of infants under two years of age 19 were due to diarrhoeal diseases, 15 white and 4 colored. There were 128 deaths from general diseases, including 83 from pulmonary tuberculosis; 55 deaths from diseases of the nervous system; 63 from diseases of the circulatory system, 26 from diseases of the respiratory system, 57 from diseases of the digestive system, and 59 from diseases of the genitourinary organs. There were eleven deaths from sunstroke and four suicides.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending September 25, 1909, there were 1,224 deaths from all causes reported to the department, 47 less than for the corresponding week in 1908. The annual death rate in a thousand population was 13.99 for the whole city, and for each of the five boroughs as follows: Manhattan, 13.18; the Bronx, 15.59; Brooklyn, 14.51; Queens, 13.84; Richmond, 21.41. The total infant mortality was 490; 347 under one year of age, 90 between one and two years of age, and 53 between two and five years of age. Of the total number of deaths of children under five years of age, 181 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 54; pulmonary tuberculosis, 131; diarrhoeal diseases, over five years of age, 190; organic heart diseases, 88; Bright's disease, 78; cancer, 67; pneumonia, 58; bronchopneumonia, 63; suicide, 18; accidents, 40; homicide, 4, making a total of 71 deaths by violence. There were 108 stillbirths. Five hundred and three marriages and 2,403 births were reported during the week.

Society Meetings for the Coming Week:

MONDAY, October 12th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Society of Alumni of St. Mary's Hospital, Brooklyn; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, October 13th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

WEDNESDAY, October 13th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

THURSDAY, October 14th.—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, October 15th.—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society; Brooklyn Medical Society.

Gifts and Bequests to Charity.—By the will of Colonel R. L. Fox, who was killed in an automobile accident at Newburgh, N. Y., recently, the Fox Memorial Hospital at Oneonta will receive \$30,000 and one half the income from \$300,000.

By the will of Mrs. Mary A. Bertram, the Salem, Mass., Hospital will receive \$120,000, and the Old Ladies' Home \$60,000.

By the will of Adolph Sheftel, who died in New York on September 13th, Jewish charities in New York receive bequests as follows: The Hebrew Benevolent Orphan Asylum, \$3,000; Home for Aged and Infirm Hebrews, \$1,000; Hebrew Sheltering Guardian Society, \$1,000; Mount Sinai Hospital, \$2,500; Montefiore Home for Chronic Invalids, \$2,500; United Hebrew Charities, \$2,000, and the Educational Alliance, \$1,000.

By the will of Abraham Bernheimer, who died in Saratoga, N. Y., on September 13th, the Hebrew Benevolent and Orphan Asylum, Mount Sinai Hospital, and the Home for Aged and Infirm Hebrews, New York, receive \$1,000 each.

The following bequests are included in the will of Adolf Krebs, who died recently in New York: To the German Hospital, \$5,000; to Mount Sinai Hospital, \$5,000; to the Hebrew Orphan Asylum, \$5,000; to the Home for Aged and Infirm Hebrews, \$2,000; to the Montefiore Home for Chronic Invalids, \$2,000; to St. John's Guild, \$500; and to the Five Points Mission, \$500.

By the will of Phoebe Anna Thorne, late of New York, many charitable bequests were made. The following New York institutions were included: The Home for Incurables, the Woman's Hospital, the Hospital for the Relief of the Ruptured and Crippled, the General Memorial Hospital, and the Children's Aid Society.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 23, 1909.

1. Practical Suggestions for the Life Insurance Examiner, By WILLIAM EVELYN PORTER.
2. The Responsibility of the General Practitioner for Freedom of Medical Research, By W. B. CANNON.
3. The Serum Diagnosis of Syphilis, By FREDERICK P. GAY.
4. Laboratory Work by the Country Physician, By M. A. CUMMINGS.
5. Suppurative Pericystitis, By ARTHUR L. CHUTE.

1. **Practical Suggestions for the Life Insurance Examiner.**—Porter, from his experience as medical director of one of our leading life insurance companies, gives practical advices as to the duties of the insurance examiner. The viewpoint of the examiner is diametrically opposite to that of the attending physician. The examiner needs the strongest field glass to detect the flaws which are most carefully concealed by the applicant, whereas the attending physician, to arrive at correct conclusions, should reverse the glass in order to reduce the highly exaggerated and magnified condition presented by the patient. The examiner must take into consideration the questions of longevity, race, environment, occupation, morals, and habits. Medical history and physical condition of the applicants are, however, the vital points.

3. **The Serum Diagnosis of Syphilis.**—Gay speaks of the Wassermann reaction and comes to the conclusion that we have in the Wassermann serum test for syphilis a biological reaction which is at least as accurate in point of view of diagnosis as is the Widal test for typhoid fever, and which may in the future prove to be of far greater value in prognosis and as an indication for treatment.

5. **Suppurative Pericystitis.**—Chute remarks that suppurative pericystitis is a somewhat uncommon condition in which suppuration takes place in the zone of loose tissue above the bladder, and in which either a part or the whole of the space of Retzius becomes a veritable abscess cavity. In a large proportion of cases the infection is secondary to some disease of the lower urinary tract. The infection of the prevesical space takes place by direct extension, or through the lymphatics. In a considerable number of cases of suppurative pericystitis the infection is through the blood stream and may come from a focus existing in practically any part of the body. In some instances the disease is an extension from a neighboring intraabdominal or intrapelvic lesion. The characteristic thing diagnostically is the presence of a mass above the pubes that more or less closely resembles a full bladder, but that is unaffected by passing a catheter. The disease is one that will probably always have a considerable mortality. The disease is of a secondary character, and its mortality will depend largely upon the nature of the disease that it is secondary to. The treatment should be free drainage of the pus collection.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 2, 1909.

1. Mental Alienation in Women and Abdominal Pelvic Disease, By W. P. MANTON.
2. The Choice of Operations for Retrodisplacements of the Uterus, By A. E. BENJAMIN.
3. The Present Status of Irrigation and Drainage in Obstetric and Gynecological Operations, By HORACE G. WETHERILL.
4. A Study of the Traumatic Insanities, By ARTHUR CONKLIN BRUSH.
5. Pellagra in Virginia, By J. H. HEWITT.
6. Pellagra in Cook County Institutions, By LEWIS J. POLLOCK.
7. Lake Michigan Water for Drinking Purposes, By W. A. EVANS.
8. The Economic Value of Protection to the Water Supplies, By HAROLD B. WOOD.

1. **Mental Disorders in Women.**—Manton reviews the historical development of our knowledge regarding the relationship existing between mind and body. He states that, while mind may exert a remarkable influence over the functions of the various internal organs, the converse is also true, morbid state of any viscus often aggravating the existing mental malady or even leading to the ultimate downfall of the greatest intellect. Head, in his Goulstonian Lectures for 1901, has shown that physical pain from visceral disease is productive of decided psychic manifestations, and others have demonstrated that relief from suffering brings about a mental palliation often otherwise unattainable. The frequency with which abdominopelvic disorders exist in insane women has been determined and has led to a more careful and systematic examination of the female patients in our institutions for those conditions which the mental malady may overshadow in its manifestations. Our author's investigations show that about eighty-one per cent. of insane women suffer from some form of pelvic or abdominal disorder, and these statistics do not differ materially from those of most other observers. Hobbs and Isabella Davenport alone reporting so large a percentage as ninety-three. The frequency with which postoperative insanity of a more or less permanent form is likely to occur following surgical intervention in, particularly, diseased abdominal and pelvic viscera, and the relationship and frequency of abnormal mentation to pregnancy, eclampsia, and the puerperium has been shown. Postoperative insanity is of rare occurrence and satisfactory statistics can be obtained only from asylum records. From a careful investigation Dewey concludes that the ratio of cases of mental alienation from this cause going to public institutions is less than 1 per 1,000, and our author's observations quite accord with this. As regards insanity following following eclampsia, Manton's investigations published in 1895 indicate that, for this country at least, it is probably such an infrequent sequel that eclampsia hardly deserves consideration as an aetiological factor. Of 1,271 insane patients, the puerperal condition, aside from eclampsia, was ascribed as the existing cause of the mental disorder in 108 instances. According to Kraepelin, childbed is responsible for the insanity of 6.8 per cent. of all women admitted to our institutions, while Peterson says that in about ten per cent. of insane women the mental disturbance has its origin at the epoch of

reproduction. In this connection Hobbs has pointed out that in the majority of these mental states septic infection, immediate or remote, is the responsible agent. It has been more clearly shown that the hallucinations and delusions of the insane are not always the figment of a disordered brain but are frequently dependent on intraabdominal or pelvic lesions. Hallucinations from such causes may even develop in the sane. As to the end results and the curability of insanity through operative measures, Manton remarks that it has always been a popular notion, fostered by indiscreet and thoughtless observations on the part of the profession, that insanity in women is most frequently the direct result of a diseased condition or perverted functions of the organs of generation, and hence, it has been believed, that the restoration of these parts to a normal state, either by repair of defects or the removal of pathological structures, would lead to renewed mental health. To those who have had the largest opportunity to study these questions, however, experience has shown that this is not altogether true. After persistent and patient investigation of cases in private, hospital, and asylum practice, and the study of the reports of others, Manton says that he is still unconvinced that local disorders, exclusive of septic or toxic conditions, ever result *per se* in mental derangement.

2. Retroversions of Uterus.—Benjamin remarks that retrodisplacements of the uterus often cause much discomfort. The anatomical arrangement of the pelvic tissue invites a retrodisplacement which causes more discomfort than other forms of displacement. The round ligaments and their coverings act as restraining bands, lessening the possibility of permanent retrodisplacement. The harmonious action of all the supports is essential to the uterus for its normal position. When the round ligaments become elongated by frequent repeated retrodisplacements the intraabdominal force is misapplied and the displacement becomes permanent. The operation which interferes with the laws governing the normally placed uterus is not to be advocated. The operation which produces unnecessary intraabdominal traumatism should not be chosen in the ordinary case. Operations which could possibly interfere with the enlargement of the uterus during labor should be used in selected cases only, but operations which leave an additional suture line within the abdomen may cause subsequent trouble, while operations which do not give as strong a support as possible consistent with the normal functions of the uterus may result in failure in some cases. The operation which utilizes the normal ligaments with little or no traumatism is less troublesome and more scientific. The advantages of the modified Gilliam operation as Benjamin performed it are the following: 1. It employs only normal tissue for support. 2. The direction of the pull for that support is in a natural line. 3. It eliminates the weak portion of the ligaments in Nature's plan for the normal position. 4. It does not interfere with normal pregnancy or the uterine functions. 5. No additional suture line is present within the abdomen. 6. No traumatism to the pelvic tissue is produced and consequently adhesions do not follow. 7. It puts the uterus at right angles to the vagina and it

elevates and tightens the broad ligaments and lifts up the ovaries. 8. It does not interfere with bowel or bladder functions. 9. It takes the strain off the uterosacral ligaments and favors their return to normal tone. 10. The ligaments are tightened sufficiently to prevent the temporary retrodisplacement; consequently the intraabdominal pressure is properly distributed. 11. It allows the operator to investigate thoroughly the pelvic and abdominal organs. 12. When the harmonious action of all the uterine supports is restored this operation gives positive and permanent results.

4. Traumatic Insanities.—Brush speaks of traumatic hypochondria; acute primary traumatic insanity; organic dementia; idiocy and imbecility; dementia præcox, manic depressive insanity, melancholia, acute dementia, and paranoia; and general paresis.

MEDICAL RECORD.

October 2, 1909.

1. The Adverse Influence of Diabetes in Certain Operations on the Eye, By CHARLES STEDMAN BULL.
2. Joint Tuberculosis; with Special Reference to its Pathology (Preliminary Study of Forty-five Cases), By LEONARD W. ELY.
3. Tuberculin for the Diagnosis and Therapy of Renal Tuberculosis, By Dr. WILHELM KARO.
4. The Traumatic Neurosis and Babinski's Conception of Hysteria, By TOM A. WILLIAMS.
5. The First American Hospital, By JAMES J. WALSH.
6. A Note on the Staining of Blood Films, By JESSIE WESTON FISHER.
7. Stenosis of the Vesical Outlet Following Prostatectomy, By J. BENTLEY SQUIER.

1. The Adverse Influence of Diabetes in Certain Operations on the Eye.—Bull says that it is well known that operations on the eyes of patients with advanced diabetes have been followed by fatal results, the patients dying in coma. During the coma the urine is usually free from sugar, even if it has been abundant prior to the attack. The coma may set in within twenty-four hours after the operation, or it may be postponed for several days. In some of the cases which were followed by unfortunate complications, the diabetes was accompanied by gastrointestinal symptoms and by enlargement of the liver, but the latter gradually subsided. It is probable that the pancreas was also diseased in these cases, as chronic pancreatitis is of very frequent occurrence in chronic diabetes. A prolonged and close observation of the cases under his care, which were followed by various complications, seemed to offer evidence of a greater deficiency of fermentative action than in other cases free from these complications. Whether psychic, nervous, or organic influences were originally at fault in these cases, it was evident that the prognosis for operation was more unfavorable, the more marked was the defective metabolism of the carbohydrates. Whether this failure of fermentative action in these cases occurs through the blood current and tissues of the body, or in the digestive tract, we do not yet know. It is not wise to introduce a strict antidiabetic regimen in a patient immediately before operating, especially if the patient has not been accustomed to it. On the other hand, such a regimen, to which the patient has for a considerable time become accustomed, should not be interrupted at the time of operation. In other words, any

change from the general routine of nutrition should not be made in any patient immediately before the operation. The complications which have occurred in his experience after operations on diabetics, have been mainly either iritis, hæmorrhages into the anterior chamber, or an infection of the wound as manifested by slow healing. In the cases of iritis there was a marked maceration of the pigment epithelium of the iris, a fact long since pointed out by Snellen. He has also noticed a rather marked tendency to infection by microorganisms after operations on diabetics, and it is known that this has been observed in other branches of surgery. In view of these facts it would seem wise to have tests made of the bactericidal power of the blood serum in diabetes. Bull gives an analysis of 115 cases, and concludes that we must carefully distinguish those diseases which are directly due to diabetes as a cause from those which may occur independently of the disease. The abnormal products of metabolism, acetone, diacetic acid, and oxybutyric acid seriously complicate the prognosis, and must, as far as possible, be eliminated before any operation is undertaken. Arteriosclerosis plays an important rôle in the ætiology of the disease and its complications. The prognosis does not depend on the percentage of glucose in the urine, but on the degree of acid intoxication. The possible connection between diabetes and tuberculosis needs more searching investigation before any positive opinion can be formulated.

2. **Joint Tuberculosis.**—Ely suggests that the best way to cure a tuberculous joint is to deprive it of motion. One of the first things to attract attention in specimens of joint tuberculosis is the effort of Nature, as soon as tuberculosis appears in or near a joint, whether in the bone or in the synovial membrane, to deprive it of motion, to destroy it, in other words, as a joint, and to convert it into a synostosis. When this has been accomplished the disease dies out. In a resection we can never be sure of having removed every vestige of tuberculosis; indeed, the chances are strongly against our doing it, yet if we get union of the wound by first intention, we expect to cure the disease in that locality. In other words, when we destroy the joint, the disease dies out. In none of his specimens had a complete synovectomy been done. They, therefore, cannot indicate whether this operation will have the same effect in the synovial type. We know that the disease often spreads in under the cartilage, often ceases to be purely synovial; but nothing in his collection helps us to tell whether an early removal of the synovial membrane will cause the disease to die out in the bone, as the removal of the bones causes it to die out in the remnants of the soft parts. Possibly, hereafter, in treating tuberculous joints, less effort will be expended in preserving motion, and more in obtaining ankylosis. We shall not dread the wearing away of the joint cartilages, but shall rather encourage it. He has observed under the microscope how Nature attempts to destroy the affected joint. He has thought for a long time that the crowding of the bone ends together by muscular spasm tended to the same thing, and has expended all his efforts to overcome it, instead of regarding it as one of Nature's efforts at cure.

6. **Staining of Blood Films.**—Fisher describes a slight modification of Jenner's stain: Take 200 c.c. of a 1.25 per cent. solution of yellow aqueous eosin in distilled water and mix with 200 c.c. of a 1 per cent. solution of methylene blue, medicinally pure, Grübler, in distilled water. Allow this mixture to stand in an uncovered, shallow, porcelain evaporating dish for twenty-four to thirty-six hours protected from dust. At the end of that time, filter through a fine grained filter paper. The residue on the filter is dried in the incubator or oven at 55° to 60° C. This powder is shaken up with cold distilled water, filtered through fine paper, and washed with distilled water until the washings are a thin, dirty purplish color. Dry the precipitate on the paper, either in the air or in the oven not above 60° C., then scrape off the powder and store in a bottle. This gives enough powder for about 300 to 400 c.c. of stain. Any of the commercial houses could easily prepare this stain, thus making the actual office work trifling. Of this powder take 0.2 gramme, and of methyl alcohol (acetone free), 100 c.c. Rub up in a mortar, adding the alcohol to the powder, a drop at a time, allow to stand for three or four days in a bottle, then filter and add 25 c.c. of methyl alcohol. The addition of the methyl alcohol is for the purpose of thoroughly dissolving all the stain and diluting it sufficiently. The bottle should be corked tightly to avoid evaporation and consequent concentration of the stain, but the solution may be diluted later with another 25 c.c. of methyl alcohol if necessary. The solution is purplish blue in color and is without sediment or precipitate. The fluid is now ready for use and will keep indefinitely. Our author has kept some for years in a clear glass bottle on an open shelf in the laboratory.

BRITISH MEDICAL JOURNAL

September 18, 1909.

1. Remarks on Syringomyelia (Sacrolumbar Type), Occurring in a Brother and Sister.
By J. MICHELL CLARKE and E. W. HEY GROVES.
2. A Case of Oral Sepsis with Peculiar General Symptoms,
By C. W. SMITH and A. E. BARNES.
3. A Case of Apparently Acute Simple Febrile Erythema Associated with the Occurrence of Two Subsequent Cases of Smallpox,
By D. S. DAVIES.
4. Facial Wrinkles and Character Expression, with Special Reference to the Nasobuccal Angle,
By W. AINSLIE HOLLIS.
5. Unusual Case of Facial Paralysis,
By H. H. B. CUNNINGHAM.
6. A Case of Multiple Plexiform Neuroma Associated with Brown Pigmentation of the Overlying Skin,
By CECIL E. REYNOLDS.
7. A Case of So Called Delayed Chloroform Poisoning,
By CONRAD DE L. CAREY.
8. Treatment of the Small Intestine in Operations for Intestinal Obstruction,
By C. HAMILTON WHITEFORD.

1. **Syringomyelia (Sacrolumbar Type) Occurring in a Brother and Sister.**—Clarke and Groves describe two such cases occurring in a brother and sister. The bones show a peculiarity which is described by Tedesco: (1) A general transparency of the bone shadows as a whole; (2) diminution and softening of the cortical layer of the diaphyses; and (3) rarefaction of the spongy bone while its gross structural form is retained, so that the external contour or form of the bone is preserved. When the process of atrophy is far advanced, however, the bone gradually disappears, as the skiagrams show. The increased brittleness which accompanies this

process of osteoporosis accounts for the occurrence of fractures. Spontaneous fractures, however, do not occur very frequently in syringomyelia—not so much so as one would expect. At the same time, a certain amount of hypertrophy of bone, with liping of and outgrowths from the ends of the bones, together with periosteal thickenings, go on side by side with atrophy; and similarly in the cartilages processes of absorption and new formation take place. Effusion of fluid into the joints is frequent; there seems little tendency to ankylosis. According to Kienbock, the x ray appearances are against the view which has been brought forward that the bone changes in syringomyelia depend on disappearance of calcium salts. As to causation, little support is given by these cases to the theory which makes traumatism play an important part in the production of bone and joint lesions in this disease. In the bone and joint lesions of syringomyelia, the joints most frequently affected are the elbow and shoulder joints. It is possible that the cases under discussion are representative of a distinct but rare group of the disease, in which the sacrolumbar region of the cord is alone involved, and in which bone lesions are the predominant feature. Lastly, with regard to the distribution of the disturbance of sensation; in each case this was similar, in its upper limit passed circularly round the limbs at right angles to their long axis. Catola and Lewandowsky remark on this point that this form of sensory disturbance is not infrequent in syringomyelia, as well as the customary root arrangement, and they attribute it to a partial interruption of the long tracts in the spinal cord, which they think occurs in this disease, and, as cases of tumor of the cord show, can produce a sensory loss with this distribution.

5. **Unusual Case of Facial Paralysis.**—Cunningham remarks that the facial nerve, while in the aqueduct of Fallopius, bears a close relation to the middle ear. After leaving the chamber situated behind the hiatus Fallopii, wherein the genu is placed, it passes backward and downward at right angles to its previous direction in the upper and posterior part of the inner wall of the tympanum; here it is in relation to the fenestra ovalis below, the ampullary ends of the external and superior semicircular canals above, and the vestibule to its inner side. The main etiological factors of facial paralysis may be grouped under three headings: 1. Central. (a) Tumors in and at the base of the brain. (b) Meningitis. (c) Nuclear degeneration, as in labioglossal paralysis. 2. Osseous (in the Fallopiian canal): (a) Inflammation extending to the osseous walls, thence to the sheath and to the nerve itself. (b) Caries and necrosis of the aqueduct, the destruction extending to the nerve itself. (c) Injury to the nerve during operations on the accessory cavities of the middle ear. 3. Terminal (after exit from the stylomastoid foramen): (a) Injuries to the nerve. (b) Implication in cellulitis and growths in the neck. (c) Influenza, diphtheria, and syphilis, giving rise to neuritis. (d) And, finally, the rheumatic type, frequently met with, and usually ascribed to a cold or draught on the face, and for which sometimes no cause can be assigned. The terminations of this condition may be briefly

summarized as follows: 1. Return to normal function. 2. Persistent paresis of the whole or of part of the nerve. 3. Complete permanent paralysis.

8. **Treatment of the Small Intestine in Operation for Intestinal Obstruction.**—Whiteford observes that excluding those cases which are nearly moribund and in which an enterostomy is all that is justifiable, it is essential that the operation, in addition to relieving the obstruction, should empty the distended small intestines of their poisonous contents. The most efficient and rapid method of emptying the small intestine is to adopt Moynihan's plan of threading them on a straight tube.

THE LANCET

September 18, 1909.

1. Abscess of the Brain in Association with Pulmonary Disease, By SCHORSTEIN.
2. The Temperature as a Guide to the Treatment and Prognosis of Phthisis, By S. VEE PEARSON.
3. Clinical and Pathological Aspects of a Series of "Doubtful" Tumors of the Breast, By T. BONHOTE HENDERSON.
4. *Peau d'Orange* in Acute Mammary Carcinoma: Its Cause and Diagnostic Value, By ARCHIBALD LEITCH.

1. **Abscess of the Brain in Association with Pulmonary Disease.**—Schorstein reports nineteen cases of cerebral abscess in association with pulmonary disease. He finds that bronchiectasis is the most frequent pulmonary antecedent of cerebral abscess, and cerebral abscess is the second most common cause of death in bronchiectasis. The author reports fourteen such cases. Empyema is second to bronchiectasis in the causation of cerebral abscess (three cases); abscess of the lung, one case; emphysema and bronchitis, one case. The author then remarks that, although it has always been stated that these abscesses are produced by the action of tiny thrombi dislodged from small branches of pulmonary veins, carried to the left auricle and ventricle direct, and then to the aorta, there is very little proof for this theory. Even in the case of sudden death after epileptiform seizure when the pleura has been irrigated no thrombi in the arteries of the brain have been found. The fact that the left side of the brain is affected more than the right, in the proportion of at least two to one, at once suggests the similar fact that in cerebral embolism from cardiac valvular disease the embolus occurs much more often on the left than on the right side of the brain. But though this is almost certain, the pathological obscurity surrounding this association of abscess of the brain with disease of the lung (where no abscess is found anywhere else in the body) remains unsolved. In cerebral embolism from cardiac valvular disease there are infarcts in many other organs—spleen, kidney, etc. In cerebral abscess from pulmonary disease, in the very great majority of cases, there are infarcts and abscess nowhere else. To say that the brain has a special predisposition to suppuration is pathologically inaccurate, for it is well recognized that in general pyæmia, from whatever cause, the brain is by no means the organ most frequently affected. Possibly, though it is merely a surmise, events may prove that, though not specially liable to suppuration, the brain is not so fully protected in these chronic cases of suppuration by

antitoxic substances formed in the body as are other organs, and therefore does not resist the septic embolus from the lung so efficiently. For if these cerebral abscesses are embolic, as appears certain, it is impossible to doubt that some similar thrombus emboli are carried to other organs, though they do not produce suppuration there. An analysis of these nineteen cases gives the very first sign of the abscess as headache and vomiting in five, headache in four, epileptiform seizures in four, dulness and drowsiness in two, paralysis in one, paræsthesia in one, depression and melancholia in one, and vomiting and incoordination in one. Headache, vomiting, local or general convulsions, drowsiness, paralysis, coma, is the usual march of signs and symptoms, not varying in any essential way from cerebral abscess due to any other cause. It is rarely that one finds the typical subnormal temperature, infrequent pulse, and respiration of the uncomplicated cerebral abscess. The pulmonary conditions profoundly modify all three, so that somewhat high temperatures, frequent pulse and respiration, occur not uncommonly in cerebral abscess associated with pulmonary disease. Localization is even more difficult in this group of cerebral abscesses than in cerebral abscess generally. There may be absolutely no localizing signs, and that whether there be one or more abscesses present. Occasionally the signs are so definite that in a case of multiple abscesses, first one and then a second abscess may make its presence clear. Operation for the evacuation of the abscess, in cases where localization is possible, is clearly indicated, but the chances of effectively relieving the patient are very small. The general ill health precludes any real possibility of success. So far no actual recovery is on record.

4. **Peau d'Orange in Acute Mammary Carcinoma.**—Leitch says that the usually accepted opinion of the cause of *peau d'orange* is that the pitting is caused by the contraction of the fibrous tissue in the tumor acting through the suspensory ligaments of Astley Cooper. Against this view there are many objections. The Astley Cooper ligaments are not so uniform in their arrangement, nor are they so closely set in relation to each other as to produce by their contraction such regular pitting. Again, any contraction from below would not produce depressions, the depth of which is as great as, if not greater than, their breadth. We should expect when we free the skin by dissecting under it that there would be diminution in the depth of the pits, if they were due to contraction from below. But the chief argument against accepting the general view is that the condition is found only in very rapidly growing, rapidly expanding tumors, in which the fibrous tissue is at a minimum. Contraction in less acute tumors produces a much rougher puckering. A very suggestive clue to the real cause is given by the appearance of the identical condition in the skin of the arm in the "brawny arm of breast cancer." Here there are no "ligaments of Astley Cooper" nor any contraction due to growth. The lymph stasis of "brawny arm" is due, not to the compression of the axillary veins, but to the blockage of the lymphatics by the permeating growth. If any further proof is required for

this it is supplied by the success of Sampson Handley's very ingenious operation of lymphangioplasty, which, by establishing artificial lymphatics incapable of blockage, restores the lymph drainage of the arm. It might be permissible to conclude from the identity of the two conditions that they were of similar causation—lymph stasis; but microscopical examination alone can settle the question. Sections taken from the tumor show large areas of spheroidal cells closely packed together and generally well preserved, though sometimes exhibiting central disintegrations. The appearance is sometimes called "medullary" carcinoma. The stroma is usually relatively small in amount. Portions may be chosen from the growth which show only proliferation within the ducts and acini, but this proliferation is always a marked feature and differs from that of mastitis, in that there is no loss of nuclear staining, whilst the cells tend to form numerous daughter lumina. At parts such as these, the elastic tissue sheath of the ducts is sometimes intact, at other parts it seems to be undergoing solution. This proliferation is found everywhere throughout the gland; the epithelium of the whole organ seems to be malignant. In addition, as we get nearer the edge of the growth, we find extensive lymphatic blocking by masses of cancer cells. When the skin is cut through it appears to be enormously thickened—from the normal 0.5—1 millimetre over the breast to 8 millimetres or more. It is dense and white and appears like ordinary squamous epithelium much thickened, and it retains this appearance in alcohol. But the microscope shows that the epithelium itself is thinner than usual. The normal papillæ are to a great extent obliterated or are only irregularly maintained. At some parts the papillary layers of elastic tissue are quite absent, at others they are dense, while intermediate conditions are found. Where they are absent the change seems to be associated with the presence of collections of lymphocytes and some plasma cells directly under the epithelium. The whole apparent thickening of the skin is due to the condition of the corium. The depressions of the surface that give the appearance of orange skin are the exaggerated pits of the hair follicles. The erector pilæ has its fibres separated like the rest of the corium. To sum up, concludes the author, the thickening of the skin is due to changes in the corium. These changes are the result of lymphatic permeation and consequent lymph stasis. The corium is expanded and the overlying epithelium is raised above its normal level by the pressure except at those places where it is bound down by the insertion of a hair follicle deep in the corium, where it is moored, as it were. Taking into consideration the already known cause of the pitting in brawny arm and this same explanation advanced for the similar condition, *peau d'orange*, in the breast, it seems reasonable to argue that where we get the condition it must be due to lymph stasis caused by blockage of the lymphatics. There is no disease of the breast at all likely to produce this appearance other than cancer. Thus even in the absence of other signs a diagnosis of acute mammary cancer from this alone would be practically certain.

LA PRESSE MEDICALE

July 31, 1909.

1. An Epidemic of Beriberi in Casablanca,
By SALET and LEGRAND.
2. Sporotrichosis of the Palpebral Conjunctiva,
By A. CANTONNET.
3. The Time and Reason for Administering Colchicum,
By G. MARTINET.

3. Administration of Colchicum.—Martinet says that during an attack of acute gout colchicum is of great value, as digitalis is in certain affections of the heart. It is this action of colchicum which has made it a specific medication in gout. In the interval between attacks, when the premonitory signs of an attack appear, colchicum should be given to abort the attack. In chronic gout colchicum is not of such great service.

August 4, 1909.

1. The Use of Calcium and Magnesium Salts in Thyroidectomized Animals,
By ALBERT FROUIN.
2. Malta Fever at Constantinople,
By EUTHYULE and GABRIÉLIDES.
3. A Case of Tarsalgia,
By AUGUST BROIA.

1. The Use of Calcium and Magnesium Salts in Thyroidectomized Animals.—Frouin has made experiments on thyroidectomized animals to save their lives. He found that calcium and magnesium salts added to the food of these animals will offset the fatal effect of complete thyroidectomy. He concludes that these salts should be employed in the treatment of thyroid insufficiency.

August 7, 1909.

1. Study in the Hydatid Antibodies,
By HECTOR Y. BOSSELLO.
2. Internal Transmigration of the Fecundated Ovulum,
By SCHWARTZ and BOYER.

LA SEMAINE MEDICALE.

August 4, 1909.

- Indication for the Use of Electricity in Ileus,
By F. LEJARS.

August 11, 1909.

- The New Health Regulations for Field Service in the French Army,
By F. MOTY.

MEDIZINISCHE KLINIK

August 8, 1909.

1. Erysipelas in Old Age, By HERMANN SCHLESINGER.
2. Special Forms of Local Reaction in the Eye after Subcutaneous Injection of Old Tuberculin,
By J. RUPPRECHT.
3. Polyneuritis and Korsakoff's Psychosis with Colipylitis in Pregnancy,
By M. SEMON.
4. Constitutional Obesity,
By CURT PARISEK.
5. A New (Electrical) Treatment for Bronchial Asthma,
By OTTO GÜNZEL.
6. A Case of Infectio in Utero,
By E. KOHN.
7. The Pulse Tension in Arteriosclerosis,
By FRANZ KISCH, JR.
8. The Condition of the Blood in its Relation to Digestion,
By MARCUS.
9. The So Called Potato or Solanin Poisoning,
By VON HASELBERG.
10. Death from Powerful Electrical Currents,
By E. RUDENWALDT.
11. The Pathogenesis of the Laminar Lesion of the Brain,
By J. LOE.

2. Local Reactions in the Eye after Subcutaneous Injection of Old Tuberculin.—Rupprecht reports two cases in one of which isolated fairly fresh choroidal patches in both eyes developed a fresh, very diffuse choroidal infiltration extending to the papilla in each eye after a subcutaneous in-

jection of 10 mg. of old tuberculin. This forms an important clinical evidence that tuberculosis is a true aetiological factor in inflammatory chorioidal diseases. The other case was one of serous cyclitis in which after a subcutaneous injection of 5 mg. of old tuberculin a little hyphæma appeared in the anterior chamber, associated with circumscribed ciliary injection and an increased number of deposits on Descemet's membrane. By this the uncertain clinical distinctive diagnosis between sympathetic and tuberculous cyclitis was decided in favor of the tuberculous.

5. Treatment of Bronchial Asthma.—Günzel says that bronchial asthma is a disease caused by irritation of the hyperæsthetic nervous system of respiration. Its cause is to be sought not in, but outside of the lungs. The mucous membrane of the nose is the portion of the respiratory tract most exposed to injuries from without, and anomalies of the mucous membrane and of development are caused which produce points of pressure that often excite bronchial asthma in persons of nervous disposition, and in such cases operative treatment of such points of pressure are indicated. In every asthmatic the application of the high frequency interrupted current to the vagus, accessorius, phrenic, and sympathetic nerves produces an anæsthetic effect, relieve the breathing after a few minutes, and after several sittings often permanently terminate the asthma. The positive electrode should be placed on the lateral triangle of the neck or in the nose. He also finds the use of electricity in this manner useful in other pains or diseases of the nerves, such as migraine, intercostal neuralgia, angina pectoris, lumbago, sciatica, and pain in the larynx.

7. Pulse Tension in Arteriosclerosis.—Kisch concludes that the pulse tension, taking into account the maximum tension when the body is at rest and comparing it with that during the performance of a certain work, furnishes a measure of the degree of resistance present in the arterial system in arteriosclerosis and of the reserve energy as well as the functional capacity of the heart.

9. Solanin Poisoning.—Von Haselberg states that the potato never develops a sufficient quantity of solanin to produce poisoning, but that different kinds of bacteria, particularly of the coli group, as well as the proteus and other bacteria of putrefaction, may increase enormously in the course of a few hours in warm potatoes and create toxins which may induce serious symptoms of poisoning, no case of which has as yet proved fatal.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

August 10, 1909.

1. Neuroses of the Internal Organs and Diseases of Their Nerves,
By SCHMIDT.
2. Local Treatment of Slight Traumatic Inflammations of the Glands,
By VON HERKE.
3. Treatment of Hematocele after Ectopic Gestation,
By ESCH.
4. Suture of the Heart,
By FLÖRCKEN.
5. The Extension of Ulcus Ventriculi in Munich and in the Bavarian Mountains,
By CRÄMER.
6. The Frequency of the Ulcus Rotundum Ventriculi in Munich,
By OBERNDORFER.
7. The Anæmia of Infants and Its Prevention,
By KATZENSTEIN.
8. Treatment of Circumscribed Diseases of the Skin, with
By ZWEIFEL.

9. Hyperkeratosis Unguinalis (Unna) the Effect of X Rays. By WEHRSIG.
10. A Simple Method by Means of which to Determine the Depth of the Position of Foreign Bodies with the X Rays. By MÜLLER.
11. Determination of the True Size of Organs, etc., from the Size of the Shadow in X Ray Pictures. By GEIGEL.
12. The Mother's Breast and Carcinoma. By GROTH.
13. Practical Experience with Scabies. By RAFF.
14. The Seventieth Birthday of Dr. Carl, Duke of Bavaria. By EVERSBUCH.

1. **Neuroses of the Internal Organs and Diseases of Their Nerves.**—Schmidt tabulates these conditions as follows:—1, Central (psychogenous) neuroses of organs, all as local phenomena of psychoses or psychoneuroses, or as apparently isolated indications of commencing organ neuroses. 2, Peripheral neuroses of organs and diseases of their nerves; a, disturbances coming from the organ nerves (the vagus and the sympathetic), examples, tabetic crises, cases of the Adams-Stokes symptom complex coming from the vagus, certain cases of paroxysmal tachycardia; b, disturbances coming from the nervous elements of the organs themselves, examples, cases of Adams-Stokes symptom complex caused by disease of Hiss's bundle, asthma (?), spasm of the pylorus (?). 3, Toxoneuroses of organs, examples, lead colic, goitrous heart, the gastrointestinal symptoms of Addison's disease, etc.

3. **Hæmatocele after Ectopic Gestation.**—Esch reports two cases of hæmatocele after ectopic gestation. The first was one of incomplete rupture of a tubal gestation which caused a hæmatocele ante-uterine. In spite of the hæmatocele a very serious secondary hæmorrhage took place which necessitated immediate operation. The second was one of a putrid hæmatocele in which vaginal incision with drainage proved insufficient and abdominal laparotomy with drainage had to be performed. Esch urges every hæmatocele should be operated on as early as possible, the same as freshly ruptured tubal gestation, because, aside from the evident advantages of this active treatment, we can never know what the future course of the hæmatocele may be.

4. **Suture of the Heart.**—Flörcken reports the successful suture of a stab wound of the right ventricle, 2 cm. long, situated just below the junction of the auricle and ventricle in a man, twenty-two years old. Convalescence was good and the patient was about in sixteen days.

5. **Ulcus Ventriculi.**—Crämer states that the ulcer ventriculi is not so rare a disease in Munich as it has been supposed to be, that it is met with frequently in the Bavarian mountains, and that the theory vegetable diet confers a sort of immunity against the ulcer cannot be substantiated. As the ulcer ventriculi causes no pain the number of gastric ulcers which run a latent course must be at any rate much larger than it is usually thought.

8. **Use of Carbonic Acid Snow.**—Zweig reports twenty-five cases of skin disease in which he has employed this form of treatment. The cases were divided into five classes: 1, Nævi of various kinds; 2, angiocavernomata and teleangiectases; 3, lupus erythematoses; 4, lupus vulgaris and tuberculosis verrucosa of mountaineers; 5, epitheliomata of various kinds. The results seemed to be good

and the method has the advantages of simplicity, ease of management, cheapness, and absence of danger, which cause the writer to recommend it for use in circumscribed disease of the skin.

RIFORMA MEDICA

August 2, 1909.

1. Immunity and Immunization against Tuberculosis. By E. MARAGLIANO.
2. The Transformation of the *Staphylococcus Pyogenes Aureus* into the *Albus* after Endovenous Inoculations. By FRANCESCO SPINELLI.
3. The Various Methods for the Experimental Study of the Effects of Tobacco Smoke. By ALESSANDRO BOSI.
4. Arteriosclerosis and Heart Disease due to Occupation (Concluded). By PIERO BOVERI.

1. **Immunity and Immunization in Tuberculosis.**—Maragliano, in this lecture, speaks of the results obtained by his attempts to immunize animals against tuberculosis. After reviewing his own work of immunization, begun in 1895, and summing up the results of the researches of his own pupils, as well as those conducted by French and German observers, Maragliano considers the question of vaccine treatment of tuberculosis. Since 1902 he has been employing methods of vaccination against tuberculosis. The first method used was a progressive immunization by the injection of the serum of immunized animals, then of the serum of immunized animals mixed with tuberculous protein in increasing doses, and finally, of tuberculous proteins alone. A second method used by Maragliano was the inoculation of tuberculous material into the skin, exactly as is done in smallpox vaccination. He injected into the skin of a rabbit the dead bodies of tubercle bacilli which had been deprived of fat and kept at 120° C. for an hour. A pustule formed at the point of inoculation which contained a puslike material. This pus was inoculated into a second rabbit and thence into a third, until the poison had passed through ten animals. This material was found to be possessed of a varying degree of immunizing properties and was tested upon the human subject. The results were published by Maragliano's assistant, Ghedini. Still another material for human inoculation was studied with the assistance of Barlocco. It consisted of the dead bodies of virulent tubercle bacilli that had been deprived of fat, kept for an hour at 120° C., finely powdered in a mortar, and made into a paste with glycerin. This material, when inoculated subcutaneously into rabbits, gave rise to a circumscribed inflammation and to the appearance of immunizing substances in the blood. The same substances appeared in human blood after these inoculations. All these three methods of vaccination are devoid of danger. The question is, how efficient are they? The vaccinations performed with these substances included a number of persons, especially children and young people, of tuberculous families. Some of them were made seven years ago, yet thus far none of the vaccinated persons have contracted tuberculosis. The vaccine can be prepared by any laboratory and is easy to use. While judgment must be reserved, as yet, as to the final outcome, of these prophylactic measures, there is no doubt in the author's mind that time will show their true efficiency.

EDINBURGH MEDICAL JOURNAL
September, 1909.

1. Pellagra, By R. DODS BROWN and R. CRANSTON LOW.
2. Hirschsprung's Disease (Idiopathic Dilatation of the Colon), By D. T. D. WILKIE.
3. A Clinical Investigation of Lumbar Puncture, By PETER MARSHALL.

1. **Pellagra.**—Brown and Low follow Nicholas and Jambon in dividing the cases with pellagra into two groups: 1. True pellagra, which is undoubtedly due to the ingestion of damaged maize, and which is endemic in certain parts of Italy, Spain, the Tyrol, Roumania, Egypt, and the United States. 2. Sporadic or pseudopellagra, in which maize forms no part of the dietary, but where the condition is due to general debility from poverty, insufficient nourishment, bad hygienic surroundings, alcoholism, and cachexia, *i. e.*, advanced tuberculosis, etc. In both the true pellagra and the pseudopellagra the clinical picture is identical. Both forms of the disease occur only in the very poorest classes, where the food taken is either inferior in quality or quantity. In the cases which are due to eating bad maize most authorities are agreed that the disease is due to the growth of a fungus or fungi belonging to the group of aspergilli or penicillia, which by their growth on the maize produce toxic bodies, which by their absorption cause the symptoms. These toxins have been extracted by Lombroso and others, and when administered to animals they have produced skin changes, gastrointestinal symptoms, and paresis, with convulsions ending in death. Administered to man, they produce nausea, loss of appetite, diarrhea, asthenia, and erythematous eruptions on the skin. The gastrointestinal symptoms in pellagra are said to be due to the effect of the toxine on the spinal and sympathetic nervous systems, and not to any direct action on the intestinal mucous membrane. Our authors report a case which belongs to the group of pseudopellagra. The patient had never eaten maize, but the fact that she was in the habit of eating raw oatmeal and rice is important.

3. **Lumbar Puncture.**—Marshall remarks that note should always be made in lumbar puncture of the pressure under which the fluid is ejected. The naked eye character, the microscopical, chemical, and bacteriological properties of the fluid should be determined. Lumbar puncture should be repeated at intervals, especially when no fluid is obtained at first. If a case is suspected to be one of meningitis, but the cerebrospinal fluid continues normal, the disease may be ruled out. When the fluid gives constant negative results on examination, syphilitic affections of the brain may be ruled out. A lymphocytosis is a constant and early sign in general paralysis of the insane and in tabes. The lymphocytosis in secondary and tertiary syphilitic conditions is not so marked. A lymphocytosis is present in tabes, general paralysis of the insane, cerebrospinal syphilis, tuberculous meningitis, epidemic meningitis (late); and is absent in functional neurosis, epilepsy, multiple neuritis, alcoholism, poliomyelitis, syringomyelia. When the fluid is clear and free from organisms in purulent otitis media and in brain abscess, the prospects of operative treatment are more hopeful.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
October, 1909.

1. Exophthalmos and Other Eye Signs in Chronic Nephritis, By LLEWELYN F. BARKER and FREDERICK M. HANES.
2. The Nature of the Arteriosclerotic Process, By GEORGE ADAMI.
3. Some Conditions Affecting the Discharge of Food from the Stomach, By CARL A. HEDBLUM and WALTER B. CANNON.
4. The Relation of the Foodstuffs to Alimentary Functions, By LAFAYETTE B. MENDEL.
5. Diet and the Care of the Bowels in Typhoid Fever, By M. H. FUSSELL.
6. The Etiology of Loose Bowel Movements, By A. D. BLACKADER.
7. Chronic Constipation Clinically Considered, By LOUIS M. GOMPERTZ.
8. The Location of the Cardiac Apex Beat, By HUGHES DAYTON.
9. Orthodiagraphy in the Study of the Heart and Great Vessels, By THOMAS A. CLAYTON and WALTER H. MERRILL.
10. Observations on Acute Leuchæmia, with Special Reference to Auer's Bodies, By REUBEN OTTENBERG.
11. Volkmann's Contracture, By NATE GINSBERG.
12. A Case of Appendicitis in which *Oxyuris Vermicularis* was Found in the Appendix, By ASLEY PASTON COOPER ASHURST.

1. **Exophthalmos and Other Eye Signs in Chronic Nephritis.**—Barker and Hanes direct the attention to the frequent occurrence of exophthalmos in chronic nephritis and advance the view that the exophthalmos of chronic nephritis is very analogous to that of exophthalmic goitre, being but one of a number of evidences of a chronic systemic intoxication. They do not think that exophthalmos is due to chronic hypertension, but are of the opinion that the arterial hypertension and the eye signs are but evidences of poisoning by perhaps separate toxins. It is well known, they remark, that uræmia may develop in a patient whose blood pressure is not increased, and it seems very probable that in chronic renal insufficiency several toxins are present in the blood manifesting themselves in various ways. Among the total admissions of thirty-three cases of chronic nephritis during the first four months of 1909 at Johns Hopkins University sixteen (48.4 per cent.) showed exophthalmos. The exophthalmos varied greatly in degree, as did the gravity of the nephritic process in the various individuals; those cases presenting evidences of serious intoxication (suburæmic or uræmic symptoms) most frequently showed exophthalmos and one or more of the allied ocular signs—anisocoria, von Graefe's, Moebius's, or Stellwag's sign. Exophthalmos has been an obvious sign in all of the patients with chronic nephritis which have died in the Johns Hopkins Hospital since January 1, 1909, seven in number. The authors also observed that the patients with chronic nephritis showing albuminuric retinitis during this period showed invariably exophthalmos, with one or more of the other ocular signs. They emphasize that exophthalmos is but one of several ocular signs which are frequently present in chronic nephritis.

2. **The Nature of the Arteriosclerotic Process.**—Adami arrives at the following conclusions regarding the effects of syphilis upon the aorta: (1) The primary disturbance is a granulomatous, in-

flammatory degeneration of the media. (2) This leads to a local giving way of the aorta. (3) If this is moderate it results in a strain hypertrophy of the intima and of the adventitia, with the development of a nodose intimal sclerosis. (4) If it is extreme, there results on the contrary an overstrain atrophy of the intima and aneurysm formation. (5) The intimal nodosities are here not of inflammatory type and are nonvascular, although, with the progressive laying down of layer upon layer of connective tissue on the more internal aspect of the intima, the earlier and deeper placed layers of new tissue gain less and less nourishment, and so are liable to exhibit fatty degeneration and necrosis. (6) These products of necrosis exert a chemiotactic influence upon the nearby vessels of the medial granulation tissue, with, as a result, (a) a secondary and late entrance of new vessels into the early and deeply placed atheromatous area; (b) absorption of the necrotic products; (c) replacement by granulation tissue; (d) contraction of the granulation tissue; and (e) depression and scarring of the sclerotic nodules so characteristic of syphilitic sclerosis. These deductions he also applies to the ordinary, nonsyphilitic, nodose arteriosclerosis, and to the Moenckeberg type. In the syphilitic and nodose forms we find weakening of the media as the primary disturbance; in both, if this is above a certain grade, there is pronounced giving way without intimal compensation; in both, if below this grade, a strain hypertrophy of the intima is manifested, leading to the production of intimal thickening. Only in syphilis the giving way of the media is the more extreme, and so we more frequently encounter advanced aneurysmal formations as contrasted with the shallower sacculations of the Moenckeberg type, and in this, also, occurring as a rule earlier in life, there is a more exuberant regenerative power exhibited by the intima. This view demands that strain or pressure is the cause of the intimal overgrowth in both orders of disturbance; it demands also that the giving way of the media in the first place is due to a local weakening sufficient to render the arterial wall unable to resist the outward thrust of the column of blood. Thus, like results may ensue when, on the one hand, the artery has undergone weakening and the blood pressure is normal, and when, on the other hand, the artery has no preliminary degeneration of its media and the blood pressure is above normal. Adami concludes that the dominant primary event in the arteriosclerotic process—syphilitic, senile, or functional—is a localized or it may be a diffuse weakening of the arterial wall and especially of the media. This induces increased strain upon the remaining coats; and if this is not excessive, that strain leads more especially to connective tissue overgrowth and the development of the characteristic lesions of arteriosclerosis.

3. Discharge of Food from Stomach.—Hedblom and Cannon observe that if carbohydrate food is thinned by adding water, there is, within limits, very little change in the rate of exit from the stomach; but adding water to protein food tends to make the discharge more rapid. When hard particles are present in the food the rate of outgo from

the stomach is notably retarded. Coarse, branny food leaves the stomach slightly faster than similar foods of finer texture. The presence of gas in the stomach delays gastric discharge, an effect due to the gas preventing the walls of the stomach from exerting the normal mixing and propelling action of the food. No considerable variation from the normal rate of exit from the stomach is observed when the food is fed very hot or very cold. Food with approximately normal acidity leaves the stomach much faster than food which is excessively acid (one per cent.), a result in harmony with other observations on the acid control of the pylorus. Feeding acid food is followed by deep and rapid peristalsis. Massage of the stomach, even when extensive, has very slight influence on the passage of food through the pylorus. Irritation of the colon (with croton oil) notably retards gastric discharge and delays the movements of food through the small intestine.

8. Location of the Cardiac Apex Beat.—Dayton remarks that the object of locating the clinical apex beat of the heart is to determine the size and position of that organ. The point of maximum impulse frequently does not define the site of the cardiac apex. The point of maximum impulse either visible or palpable, may be produced by a portion of the heart wall at some distance from the apex. Except in cases in which the visible and palpable impulses coincide, as they usually do with a normal heart, it is better to state simply that pulsation is visible in certain interspaces at a given distance from the median line. It is frequently impossible to determine the left border of the heart by percussion, on account of changes in the resonance of the adjoining area due to large breasts or intrathoracic conditions, or when the apex is carried so far toward the left by hypertrophy or by displacement of the heart, as a whole, that percussion, unless extremely light, tends to bring out dullness of the lateral surface of the heart. Auscultation, as a means of locating the apex, is at best a makeshift in the event of the failure of other methods. The most valuable clinical method of locating the cardiac apex is the palpation of its impulse when this can be detected in an interspace. The apex beat should be considered as the point farthest downward and to the left at which a distinct forward thrust of the heart can be felt. The clinical apex so located, being close to the anatomical apex, is of real value in estimating the size or relative position of the heart. Because of the influence of posture upon the area of relative cardiac dullness, and the situation of the apex beat, it is advisable, for comparison with subsequent observations, to record whether the patient was examined in the erect or in the dorsal recumbent position.

10. Acute Leuchæmia.—Ottenberg says that while the rods described by Auer can be found in many cases of acute leuchæmia, they have never been found in any other disease. There is no evidence that they are parasites. The attempted inoculation of human leuchæmia into monkeys was unsuccessful. Leuchæmia (like tumors) can probably only be successfully inoculated, if at all, into animals of the same species.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of February 15, 1909.

The President, Dr. ROBERT T. MORRIS, in the Chair.

The Medical Importance of the Study of Anthropology.—This paper, which was illustrated with lantern slides, was read by Major CHARELS E. WOODRUFF, of the Army Medical Corps. Our expansion to tropical climates, he said, had created an entirely new subject for sanitary investigation, the relation of races and climates. While it was quite likely that the vast majority of physicians believed that the preservation of the health of white men in the tropics was exclusively a matter of avoiding the infections, there was another field which had scarcely been cultivated at all, that curious reduction of resistance which made all infections far worse than in the normal environment. Colonization by northern people who would not require a trip north for recuperation every two years, or who could raise their children in the tropics, and thus propagate their kind, was still an impossibility. If our troops were to be kept healthy, we must discover the reason for this loss of resistance and vigor, and the new investigations in this line were also of vital importance to Americans in general, for in every part of the land there were migrant types, some of whom might be injured by climatic factors. While biologists had for half a century been talking about adaptation to environments, the medical profession had completely ignored this, and the opinion was widespread that the differences between types of men were of no significance whatever. Such an opinion was all the more remarkable because there did not seem to be any dissent from the theory that in the lower animals specific characters had a survival value; that is, the origin of species was merely the survival of the individuals which had so varied as to be the best adjusted to the environment.

Unfortunately, all races had generally been considered to constitute one species, but there was now a vigorous reaction apparent. If the opinion held by eminent scientists that, if any groups of living things showed differences of the degree found between men, those groups were invariably to be considered to be species, we must arrive at the conclusion that all racial characteristics were so beneficial in some way that they had led to survival in the appropriate environment. Professor Ridgeway, of Cambridge, had recently protested against the old idea of man's isolation from the rest of creation, and had pleaded for the view that we were governed by all the natural laws which modified other animals. One of the greatest obstacles to the determination of characters due to the selection of variations was the fact that a modification might appear for generation after generation, so long as the cause existed, though such acquirements were never hereditary. This was very decidedly the case with man, who, like bacteria, promptly reverted to the normal upon restoration of the normal environment. Another disturbing element was the effect of use

or disuse, as of certain members of the body in the occupation pursued. On the other hand, pigmentation was a result of the survival of favorable variations, from causes at present unknown, for sunburn was never transmitted.

It behooved us, therefore, to take up each character and determine why it existed. If it was shown to be of survival value, it would be easy to decide whether that character was a disadvantage if the man migrated to a very different environment, or whether it was merely neutral. Why was it, for instance, that there was such a general tendency to shortness of stature in the tropics and great tallness and bulk toward the colder climates? It was true that there were some remarkable exceptions to this, but exceptions were often due to migration, and, even if the character was a disadvantage, it might take many generations to kill off the unfit. It had been found that lack of proper nourishment was the cause of low stature here and there, but this did not explain the differences in the well nourished. Indeed, there was no explanation of tallness as an advantage in survival. The only thing about which we were certain was the reverse proposition as to weight, for heavy northern men did not stand the tropics so well as the little ones. So there was something about tallness and bulk which made them an advantage in cold places and a decided disadvantage in hot climates. Consequently, we found either that in America the tall men so common in the north had been killed off in the south or that something else had prevented the children of the south from reaching the stature of their ancestors. The disadvantage of overweight in America had recently been clearly shown from a study of life insurance statistics, and it was to be remembered that the United States was much nearer the tropics than we generally realized, our northern parallel passing through the vicinity of Paris and Vienna, while Texas extended as far south as the Sahara Desert, and Florida had the latitude of the Ganges. With all allowances made, it was evident that bulky man here suffered from the identical conditions so marked among them in the tropics. We were still no nearer knowing the cause of this, because we had no comparative data from places in the northwest corner of Europe, where the average height was decidedly greater than here and where these overweights would be nearer the normal. Until the medical profession had collected sufficient data for a scientific theory we could only go upon the hypothesis long ago advanced that surface varied as the square, and weight as the cube, of length. Heavy men, therefore, had less radiating surface than thin men of equal height, and while bulkiness or stockiness was a decided advantage in retaining bodily heat in cold climates, it prevented sufficient radiation in the tropics; so that the disturbances of bodily temperature broke down the nervous system in the course of some years. This was a serious practical matter. We must find out why heavy men were killed prematurely in America, if they were long lived elsewhere. A discovery of the cause and avoidance of it would prolong the lives. What a flood of light we should have on the causes of longevity if physicians would only report on the types which survived. We were frequently bombarded with statistics showing the

increase of arteriosclerosis in America and the alleged lessened length of life as compared with the same types in their native lands (Germans, for instance), but no one had ever stated which types of Germans were thus afflicted. Here was a typical instance where preventive medicine was waiting for an acceptable theory from anthropology, and anthropology was waiting for pathological facts upon which to form a judgment.

Having referred to the nasal index, or width of nose divided by the length, which had long been noted as varying with the climate, and pointed out the significance of this as bearing upon the susceptibility to various forms of disease, Major Woodruff went on to say that his personal observations had been exclusively in regard to the use of the pigments of the skin, hair, and eyes. So far as could now be determined, it would appear that for the greatest efficiency we were dependent upon the stimulation of a small amount of light, and, though mere health was possible with very little, total deprivation, as in the arctic winters, was decidedly depressing. Light in large amounts, however, was invariably lethal, and even in smaller doses it might be unduly stimulating; so that the limit of safety was far below the point generally accepted by the medical profession. Consequently, Nature was always at work removing the specimens insufficiently protected, and in the course of time the people in any region became pigmented in proportion to the maximum intensity of the light, irrespective of the temperature. The negro's skin did not keep out all the light of the tropical sun, but, so far as we knew, it transmitted about as much as passed through the skin of a blond in the feeble light of cloudy days in Europe. Each type excluded practically all the ultra violet rays and was sufficiently protected from harm, while it received the stimulus it needed from the rays of greater frequency, which penetrated in amounts proportionate to the wave length, red penetrating most and violet least. Curiously enough, it had been found that the Finsen light did not penetrate in sufficient amounts to kill the bacilli; so that the cures must be explained in some other way.

Anthropologists had repeatedly called attention to the increasing pigmentation of our American population, even before the present flood of brunet immigration. Luckily, we had positive evidence as far North as the St. Lawrence Valley, which was largely peopled by blonds from the more cloudy northern part of France. This region, however, was as light as southern France, and the population was now largely brunet, as in that section. The same phenomenon had occurred among the New England colonial families. Blonds promptly disappeared from the Creole population of New Orleans, which had the climate of Cairo, Egypt, while they were surviving in health and vigor under the almost perpetual clouds of the southern end of the Appalachian ranges in Tennessee and Kentucky.

Here the medical profession could be of immense value to anthropology by simply recording the complexion of the patients in each group of diseases. By a study of cases which had been under identical influences we could quickly determine what diseases most affected the brunets and which the

blonds, and then we could evolve therapeutic and preventive measures. At present we had to guide us only the general law that men who migrated to a climate where the native was heavily pigmented were in some way damaged by him. In other words, pigmentation was of survival value, and, the world over, men instinctively hid from the light or protected themselves from it. Symonds's statistics, as to bulk showed that what we formerly considered the best conditions were really the worst for this climate, and the same was true in regard to complexions. A careful investigation of several regiments in the Philippines some years ago showed that even in the short period of two years the blonds had a higher morbidity and a much higher mortality rate than the brunets. There had not been sufficient time to tell what the final result would be in those who remained for a long period; all we could now say was that, if a man could hide from the sun and escape the infections, his health might not break for many years.

If a type were injured in any way, it ought to show less resistance to practically every infection than the uninjured type; but it would be necessary to eliminate all other factors except the one under investigation. Making all proper allowances, the statistics already available (*New York Medical Journal*, September 12, 1908) showed that in America blonds furnished more cases of tuberculosis, with quicker mortality of the infected, than the brunets. The rapidity and malignancy of the disease among blond immigrants from Scandinavia and Ireland and among blond Jews was now a matter of record, and the same was true as regarded white people in the tropics. The susceptibility of blonds had also been observed in central France and Bohemia, while, so far as was known, there was little or no difference between the two types in such cloudy places as Scotland.

These facts opened up an entirely new field of study. It was well known, for instance, that some patients did not improve in our northern mountains. What types were they? Were the unimproved cases, types which came from the Mediterranean basin and were unadjusted to cold, cases which were known to do better in southern California or lower Egypt? It was also known that there was a deplorable mortality among patients sent to the southwest, such as Arizona, for instance. Why were we not informed as to what types were so promptly destroyed? There was a little evidence that the blonds were the worst sufferers, and it was sufficient to justify us in advising bright blonds not to go to such a climate, or at least, if they did go, to avoid the sun.

A few years ago we were all convinced that light in unstinted amounts was essential in the treatment of tuberculosis, but a very considerable number of men whose opinion was worth something were now convinced that it was of very minor importance, and a still larger number were discovering facts which proved that in large amounts it was harmful. In endeavoring to find out why tuberculosis was so rapidly fatal in the Philippines the data collected showed that, in spite of the textbooks, excessive sunshine interfered with recovery, while in very cloudy places the disease was quite curable. The

amazing part of this new investigation was that no one had ever published any proof that sunlight in any dose was of the slightest benefit—proof absolutely uncontaminated by other factors. Of course, it was more than probable, on general principles, that a little light was beneficial, but what modern medicine required was proof of every assertion. Otherwise we were liable to be as foolish as the physicians of the past generation, who kept tuberculous patients indoors.

In conclusion, Major Woodruff said that the few illustrations he had given would serve to show that the different characters of the races might be of survival value and probably injurious in an environment which had selected the opposite characters. There was no perfect climate for any disease except the one by which the patient's physique was evolved. In sending invalids away in search of health we ought to consider the individual himself far more than had hitherto been the case, or we might be sending him to his death. In regard to the effect of climate on unadjusted types, we had the grandest field in the world, for we had all kinds of climates and in each one had specimens from every region of the globe. We needed first of all an anthropological survey, something like that made by Virchow for Prussia; next, we must know what diseases were the more frequent in each characteristic. Ophthalmologists and dermatologists were particularly fortunate in the material at their command, and would discover that many diseases fastened on one type more than on another. Hyde, of Chicago, for instance had found that pigmentation was a decided preventive of skin cancers and other pathological conditions. The prevalent idea that here in America we were producing a new type by mixture was simply a delusion. Nature had been mixing Europeans for some hundreds of thousands of years, and yet had been unable to produce a type fitted to live everywhere from Scotland to Sicily, and she would be equally unsuccessful here. So far, she had been solely occupied in killing off some and selecting others for survival. Hybrids were especially vulnerable. There was no climate on earth to which they were adjusted, and amalgamation was a biological absurdity. We must wake up to the fact that the reasons for Nature's selections must be found by careful investigation, and that the study of anthropology was of vast practical therapeutic importance. The value of the science of climatology should be recognized, so that we might select that climate best fitted to the individual. Thus, neurasthenia was so bad in the tropics as to leave no doubt that it was partly due to the excessive stimulation of light, and it had been found that patients promptly recovered as a rule if sent to a darker climate. It was true that we occasionally heard of neurasthenics who derived remarkable benefit from a short stay in sunny places, but it was very likely that their cases were sluggish, autotoxic, needing stimulation, and not exhausted ones needing the reverse.

Dr. LIVINGSTON FAIRAND said that in the field of anthropology there was no line in which there was data sufficient to base definite conclusions upon. The observations in regard to light described in the paper were certainly of the greatest interest, and

it was to be hoped that the subject would be fully investigated. The term "race" was now in hopeless disrepute, for at present we did not know whether there was any such thing as a race. Anthropologists could not even agree as to what were called the great races. It had been supposed that there were three of these, the white, the yellow, and the black, but now the tendency was to speak of only two types, the mongoloid and the negroid. The white was merely a modification of the first of these, and in the negroid there was every possible modification. Every modern type of man was the product of a long course of mixture. Nervous derangements were supposed to be due particularly to the burdens of civilization, but it was a fact that savage tribes were much more subject to these. They were often extremely hysterical, and they quickly broke down under any nervous strain.

Dr. WOODS HUTCHINSON said that it was certainly true that we should be very cautious in formulating any generalization. The type of a race was often really the exception to the vast majority. Thus, of the so called blond races, only ten per cent. were strictly of this class. The predominance of the white race among all others was attributable especially to the adaptability of the white man. In the matter of racial immunity from disease the prominent element was the time for which the race had been exposed to infection. In the course of long periods the susceptibility to this gradually grew less and less, so that the oldest races were the least apt to suffer, while among the newest ones the greatest havoc was made by infectious diseases.

Major WOODRUFF exhibited two skulls from the collection of the American Museum of Natural History. One of these illustrated the wide nasal index of the south and the other the narrow nasal index of the north. He was not certain whether the latter was the skull of an Indian or of an Eskimo.

The PRESIDENT thought this skull was so decidedly mongoloid in type that it was most probably that of an Eskimo. As the Indians, however, were now held to be mongoloids also, he said, it might be possible to trace the varying nasal cavities from the arctic region to the tropics through different Indian tribes, and thus eliminate what might be just an Eskimo peculiarity. He asked if the reader of the paper, in speaking of hybrids, had referred to those between varieties of *Homo sapiens* or to hybrids between species under certain genera. It was a well known fact that in many cases hybrids between species of the dog and of the horse were notably hardy.

Major WOODRUFF said that he had referred to hybrids of widely different races. As to hybrids between similar species, as mentioned by Dr. MORRIS, he had not collected data bearing upon the point.

The Value of the Mixed Toxines of Erysipelas and Bacillus Prodigiosus in Inoperable Sarcoma, Based upon a Study of Cases Treated during the Past Sixteen Years.—Dr. WILLIAM B. COLEY, who read this paper, said that, while the results thus far obtained by this treatment had not been so satisfactory as one seeking for perfection could wish, they had been sufficiently real and tangible to be, in his opinion, entitled to more careful consideration than they had as yet received. Fur-

thermore, they might have an important bearing upon the whole cancer problem, since, if by the administration of certain bacterial toxins we could cause the degeneration, death, and absorption of the living tumor cells of one variety of cancer, sarcoma, it was not unreasonable to suppose that by the use of some other forms of bacterial toxins we might succeed in destroying or inhibiting the growth of the other and more common variety, carcinoma. He emphasized the point that the method rested upon a solid foundation of indisputable facts, for in a considerable number of cases of inoperable cancer of all varieties, and especially sarcoma, such tumors had been known to disappear under accidental attacks of erysipelas, and the patients had remained well for many years thereafter. For the benefit of those who refused to accept clinical results unless confirmed by laboratory experiments, he said that the latter had now been supplied, since during the last two years Dr. Tracy and Dr. Beebe, of the Huntington Cancer Research, had shown that large multiple sarcomata in dogs rapidly disappeared under local or systemic injections with the mixed toxins of erysipelas and *Bacillus prodigiosus*.

In giving the history of the several stages of the toxine treatment the speaker stated that little change had been made in the preparation of the toxins until Dr. Tracy's experiments, two years ago, proved the truth of the opinion previously expressed by himself, on the basis of clinical observation, that *Bacillus prodigiosus* had itself a curative effect upon tumors, independently of any action it might have in intensifying the virulence of erysipelas. Dr. Tracy then proceeded to grow the two organisms separately, and, by adding a certain definite quantity of the sterilized prodigiosus proteid to each ounce of the streptococcus broth, was able to secure what had never been possible before, a definite standardization of doses. The changes produced in sarcomatous tumors by these mixed toxins were precisely the same whether the toxins had been injected directly into the tumor or made in remote parts of the body, proving that the action of the toxins was systemic rather than local.

In a certain number of cases (a little over ten per cent. in Dr. Coley's own experience) the degenerative process excited by the toxins had continued until complete absorption of the tumors had taken place, but in the others the improvement caused had been only temporary. The reason why a cure resulted in some cases was, he believed, that in these the antagonistic action of the toxins was sufficient to destroy the cancer cell completely or render the soil unfavorable for further growth, while in other instances the tumor cells, by reason of greater vigor or better nourishment, were more resisting, and, although receiving a temporary setback in consequence of the blood changes produced by the toxins, so accommodated themselves to the new environment and continued to grow as before. Repeated blood examinations had shown a fairly constant leucocytosis as a result of the mixed toxins.

As to the indications for the use of these toxins, Dr. Coley believed they should be employed (1) in all cases of inoperable sarcoma, except the melanotic, which were probably of epithelial origin; (2) in cases of sarcoma originating in the long bones in

which an operation meant the sacrifice of the limb; (3) immediately after an operation (within a week or two) in all cases of primary operable cases, as a prophylactic against recurrence; (4) after primary operations for carcinoma, as a prophylactic against recurrence. The use of toxins as a prophylactic after an operation offered by far the most important field of all, the proportion of recurrences in his own experience being less than twenty-five per cent., whereas in cases in which the toxins were not so employed the proportion of recurrences had been fully seventy-five per cent. The toxins, like morphine and strychnine, were very dangerous when improperly used, and they should certainly never be resorted to by any one who would not take the trouble to learn their proper doses.

In all, Dr. Coley had had fifty-one cases of inoperable sarcoma successfully treated with the mixed toxins. Of these patients, thirty-five had remained well from $3\frac{1}{4}$ to sixteen years, fourteen from ten to sixteen years, and twenty-eight from five to sixteen years. To the thirty-six successful cases published in March, 1906, he had added fifteen others. When he began to use this method, sixteen years ago, he did not expect the profession to adopt it. He fully expected to wait until its great objection of novelty had given way to time, and his own results had been duplicated and confirmed by other observers. No one, however, could see the results which he saw and lose faith in the method. The fact that only a small proportion, instead of the majority, of the patients recovered did not cause him to abandon it, but only stimulated him to seek further improvements in its application, and his results during the last year had been better than ever before.

Dr. VIRGIL P. GIBNEY said that, owing to Dr. Coley's achievement, he had for the past sixteen years been able to regard these cases of sarcoma with hope, while previously they had been for the most part hopeless. Under the influence of the mixed toxins he had seen patients recover and he had seen limbs saved which would formerly have been amputated.

Dr. HOWARD LILIENTHAL also said he had seen patients get well under this treatment who certainly would otherwise have died. He mentioned particularly the case of a man upon whom he had operated for supposed tuberculosis of the ribs. He resected two ribs and removed a section of the pleura, when it was found that the disease was still more extensive and was sarcomatous in character. A fatal prognosis was given, but as a last resource it was determined to try the effect of the mixed toxins. At first the tumor increased in spite of this treatment, but after a time it began to show signs of yielding, and eventually it disappeared entirely. The patient had then remained perfectly well until a few weeks ago, when there was apparently a slight recurrence; but this had been promptly dissipated by a renewal of the injections. One of the great benefits of this treatment was in the way of prophylaxis, as there were now many instances on record in which there had been no return of the tumor. Having cited cases in point, he said that it seemed to him a great injustice that the method had not received more attention on the part of the

profession. He would like to ask Dr. Coley if the mixed toxines had been tried as a prophylactic in cases of carcinoma.

Dr. COLEY replied that he had employed the method in several cases of this kind, after operation, for its inhibitory action. In inoperable cases of carcinoma also it appeared to exercise such an inhibitory action, though this did not seem to be powerful enough to effect a permanent cure. He referred to two instances of this kind. In one the patient died after ten years, and in the other after two years and a half, from abdominal metastases.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-third Annual Meeting, held in Cape May on June 23, 24, and 25, 1909.

The President, Dr. DAVID ST. JOHN, of Hackensack, in the Chair.

(Concluded from page 676.)

The Sterilization of Confirmed Criminals, Idiots, and Other Defectives by Vasectomy.—Dr. WILLIAM J. CHANDLER, of South Orange, said that students in sociology had called attention to the fact that the birth rate of the criminal and defective classes was increasing much more rapidly than that of intelligent and law abiding citizens. This was probably because these defectives had no sense of responsibility, and sought only the gratification of their animal natures. He referred to the famous Jukes family of criminals, prostitutes, vagabonds, and paupers, to support the view that crime was hereditary. Society had sought to protect itself against the increasing numbers of criminals and defectives by passing punitive laws and by maintaining institutions for such persons. This had entailed considerable expense upon the community, and had not been particularly successful. Some States forbade the marriage of persons that were epileptic, imbecile, feeble minded, or afflicted with insanity; but, unfortunately, the race could be propagated without marriage. Segregation or colonization was costly, and deprived many otherwise useful citizens of their liberty. Castration unsexed the individual, and, while advisable as an additional punishment for a limited number of criminals, was objectionable as a general measure. Vasectomy, however, was simple, safe, and thoroughly efficient. It would prevent propagation without unsexing the individual. Dr. Henry C. Sharp, of Indianapolis, for a long time chief physician of the Indiana State Reformatory, had done many hundreds of these operations, and stated that it in no manner limited the marital relations, except in the prevention of procreation. Indiana and several other States had passed laws making it compulsory for unimprovable defectives to submit to this operation. Dr. Chandler finished by offering a resolution that a committee be named to prepare a bill on the lines of the Indiana law, and to present it at the next meeting of the legislature.

Dr. GEORGE H. BALLERAY, of Paterson, said that we were what we were in consequence of our heredity and our environment. Therefore, the propagation of the human race should not be left entirely to chance. In the breeding of the lower animals great

precautions were taken to improve the stock and to prevent crossing with inferior animals. This was not so with humanity, and the result was often a progeny that was a disgrace. One of the measures that Dr. Balleray thought would be beneficial in this respect was the control of immigration. There were laws in existence supposed to do this, but they were not enforced. In regard to the control of marriage, at present there were no special means of preventing the marriage of the unfit. He thought that a law regulating this should be passed in every State, and that the applicant for matrimony should be made to pass an examination as severe as that required now of an applicant for life insurance. He thought that it should not be vasectomy, but castration, that should be performed.

Dr. PROUT said that the procedure should be undertaken with some trepidation, because not much was yet known concerning the ultimate effects of vasectomy. He thought that the performance of the operation on criminals would place them in a position of absolute irresponsibility, and that to allow them their liberty would cause a good deal of trouble.

Dr. CORNELL did not think that the law in Kansas prohibiting the marriage of degenerate and unfit persons could have a fair trial until other surrounding States passed similar laws, as people who wished to be married need only step across the border. The fact that some criminals had stated that they felt better after the operation of vasectomy did not prove it to be a good thing. He considered that the results given by Dr. Chandler lacked the accuracy of scientific verification.

Dr. D. C. ENGLISH made a motion that a special committee, consisting of Dr. Chandler, Dr. Balleray, and Dr. Prout, be appointed, and that the recommendation contained in Dr. Chandler's paper be referred to this committee, with power to prepare a bill and have it introduced at the next session of the legislature. His motion was seconded and carried, and the committee was appointed. He did not think that the procedure should be regarded entirely as a punitive measure, as many of these persons were not criminals. If they could be put into a safer and better condition by vasectomy, he thought it was well to employ it. These people were not more irresponsible after the operation than before; and were better able to restrain themselves.

Dr. BALLERAY was willing that vasectomy should be performed on the feeble minded, but felt that to remove the testicles of criminals would have a great deterrent effect.

Dr. CHANDLER said that he had recommended castration for a certain class of criminals.

Mental Hygiene and Prophylaxis.—Dr. HENRY A. COTTON, of Trenton, reviewed the recent advances in the study of psychiatry and in the care and treatment of patients in insane hospitals, and said that not only in prophylaxis, but also in the after treatment of patients who left the hospital, the physician had an important field. There were a great many preventable forms of insanity, alcoholics making twenty per cent. of the admissions, and ten per cent. more being cases of general paralysis due to syphilis. These, with other indirect causes of insanity, would run the estimate up to fifty per cent.

of cases of insanity that were entirely preventable. He regretted that the New Jersey law did not provide for voluntary commitment, and hoped that this defect would be remedied at the next session of the legislature. He thought that the care of the acute insane should not be entrusted to a layman, no matter how good. He believed that the counsel of the family physician would often be of value in so directing the life of his patient as to prevent the development of insanity.

Dr. PROUT wished to emphasize the bringing up of children as an element in the prophylaxis. He thought that obedience and imagination were both parts of the character sadly neglected in the training of children in the United States. This he considered a serious defect, and one that would lay the foundation for an unstable equilibrium in the mind of the individual.

Dr. ALEXANDER MARCY, JR., of Riverton, thought that institutions for the insane should be under the care of men thoroughly trained in this particular specialty. He thought that Dr. Cotton would not have gone far wrong if he had said that seventy-five per cent. of the cases of insanity were indirectly due to alcohol. He believed in a sharp distinction between the acute and curable insane and the chronic and incurable. He thought that the county institutions should take care of the latter, but that the State should take charge of the former, separating them from the chronic cases. He thought that the acute cases needed the most careful, painstaking, and thorough investigation. He believed that the stigmata of insanity were often implanted in the offspring of the degenerate, and considered the two questions closely allied.

Dr. PARSONS said that the county asylum did care for the acute cases, and that chronic cases required much more care than the acute. He thought Dr. Marcy was discriminating too much in favor of one class at the expense of the other.

Dr. LUTHER M. HALSEY, of Williamstown, said that at the present day institutions for the insane were no longer regarded as asylums, but were looked upon as hospitals. Daily staff consultations were held, and the management of the different cases was discussed. He thought it almost impossible to get a lay superintendent capable of managing a county insane institution properly, and thought that politics was very likely to creep into the matter. He was in favor of a closer relation between the hospital physician and the general practitioner.

Dr. COTTON did not think that every patient that had been in the State hospital for five years should be sent back to the county institution, as a good many of the chronic insane were violent and hard to manage. When they reached a stage of quiet dementia, they could be taught farming and house work. He thought that the physicians in county asylums worked under a great disadvantage, as they could not always get the superintendent to do what they wished.

The Supernutritive Properties of Milk.—Dr. ALEXANDER McALISTER, of Camden, said that cows' milk was ideal only for calves, although there was less danger in feeding the child with cows' milk than with that of any other animals. The fœtus was nourished before birth by the blood, and afterward by milk, which was the nearest thing to blood. Milk

was now regarded as a collection of living cells suspended in serum. These cells were nearly related to the white blood corpuscles. The valuable supernutritive properties were found only in whole milk. Milk that was not definitely known to be good and new should not be endorsed by physicians for nursery or clinical use. It was almost always possible in this country to get perfectly good milk. The place that could not command good milk for its infants and invalids should be held up to ridicule.

At What Age Should a Child be Admitted to our Public Schools?—Dr. JOSEPH FUNK, of Elizabeth, said that the law of New Jersey permitted children to be sent to school at the age of five years. He considered this far too young, as mental development could not be expected until the child had laid the foundation for a good physical development. They were too young to concentrate their minds, and even tired of play very quickly. He thought no child should be sent to school until it was seven years old, and that during the first two years after this the school hours should be short. A great deal of the school time should be spent in the open air.

Dr. MARCY said that he wished to emphasize the points of shortening the school year, limiting the hours of confinement, attending more thoroughly to the physical and moral development, and allowing the mental development largely to take care of itself.

Dr. ELIAS J. MARSH, of Paterson, said that classes often had to be put on half time because school accommodations were insufficient. He suggested that the financial problem could be solved by having the children spend a large part of their time out of doors during school hours, using the ground around school houses for the purpose of conducting their exercises for part of the day.

Dr. HENRY L. COIT, of Newark, considered it a mistake to send a child to school before the age of eight years, the period between five and eight being that in which the nervous system underwent its most critical development and gained its greatest strength.

Dr. LIVENGOD said that there were too many studies in the public schools, and that the subjects were often too abstract for the minds of the children. Even if the school hours were shorter, it would take all the pupils' spare time to prepare their lessons. If the schools could be taken out of politics, he thought that radical changes in the right direction could be made.

Dr. CHAVANNE did not approve of the manner in which children were stuffed with information at the present time, and said that much of the knowledge thus acquired was of no subsequent use.

Dr. LINN EMERSON, of Orange, said that children would readily acquire, in a short time, and without much waste of energy, what it would have required tremendous efforts on the part of the teacher to pound into their heads between the ages of five and seven. He thought that the child who began to go to school at the age of eight years would be better grounded at the age of twelve than the child who had gone to school since the age of five years.

Dr. CORNELL said that the teachers were powerless to change the course, unless backed up by the medical profession. They had to be governed by those higher in authority. He thought that if the society would take some action regarding the matter, other State societies would follow its lead.

Dr. MARCY offered a resolution that a committee of three be appointed to consider the subject of the school life of children, to report at the next meeting, and to make monthly reports of progress in the *Journal* of the society. The motion was seconded and carried.

Some Points in Infant Feeding.—Dr. D. E. ENGLISH, of Milburn, was the author of this paper, but, he having been called home, the paper was read by Dr. D. C. English. It said that efforts should be directed, not to making a perfect imitation of mothers' milk, but to obtaining a food that suited the infant. No exact rules as to quantity could be laid down. Rules were based upon the supposed capacity of the infant's stomach at different ages and this was a most uncertain and variable criterion. If the child showed a normal increase in length and weight, it must be getting a proper amount of food. Lack of this increase was more often due to the quality than to the quantity of the food. In hot weather one should be content if the child kept well, and not insist on an increase in weight and length up to the full amount. The child required a larger quantity of cows' milk than of breast milk. Dr. English thought it wrong to wake a child and insist on its swallowing a certain amount of food at a particular time. An infant should never be fed when it was not hungry. The child should be allowed to worry a while before each feeding. Occasional crying was the only form of physical exercise that a young infant could get. One should try to make the baby continue feeding until its stomach was full and distended. It was this distention that developed the stomach. It would not produce dilatation, which was caused by feeding the child too frequently and not allowing the stomach to become entirely empty. After feeding, the baby should sleep. In regulating the time of feeding, one should not pay attention to the clock, but should watch the baby. The intervals would then tend to approximate those given in the textbooks, but would be more irregular. By the age of eighteen to twenty months, the feeding could be reduced to three good meals a day with something between meals.

Dr. FRANCIS E. TODD, of Paterson, believed in putting the normal baby with a normal mother to the breast as soon as convenient after delivery. He was accustomed to allow the infant to nurse every six hours in the interval between delivery and that of free lactation. He considered the first secretions from the breast necessary to the child, clearing out its intestinal tract and leaving it in condition to take the pure milk of lactation. He thought the child could get almost enough water from the breast, but said that any water given it should be sterile. He preferred to have this given after nursing, instead of before. Breast fed babies required less attention to their mouths than bottle fed babies. He thought that regular nursing brought about regular habits and made the child easier to take care of. In mixed feeding, he would allow the child to get all the milk it could from the breast before giving it the bottle. Strong efforts should be made to secure certified or pure milk. He doubted whether the removal of a little of the cream from the top of the bottle would remove enough bacteria to make the procedure worth while. He thought that Dr. English gave the fruit juices a little earlier than necessary, and said

that six or seven months was early enough for this. He thought milk formulas too weak as a rule.

Dr. LIVENGOOD said that the child's toys should be sterilized and that, when it was placed on the floor, a sterile sheet should be put over the carpet.

Ophthalmia Neonatorum.—Dr. T. R. PAGNELLI, of Hoboken, divided the disease into two forms, gonorrhoeal and nongonorrhoeal, and said that the prognosis was better in the latter than in the former, but that the treatment was similar. Infection usually took place just before or just after the head passed the vagina. If the disease developed later than the fifth day, it must have been contracted from outside sources. The diagnosis should present no great difficulty. The prognosis depended upon the bacterial cause, the size of the palpebral fissure, the stage of the disease, and the nutrition of the infant. Various silver preparations were used in the treatment, and several different acids. The best method was that of Credé, which consisted in instilling a solution of silver nitrate into the eyes of the new born child after the lids have been cleaned.

Dr. NORTON L. WILSON, of Elizabeth, had seen a great many fewer cases in the last eight years than formerly, and believed this to be due to the use of the Credé method of treatment, particularly in institutions. He did not, however, recommend that this method should be employed in every case in private practice. He thought that nonspecific cases would get well in most instances, whether any treatment was employed or not, provided the eyes were kept clean. Even specific cases would do much better if the eyes were frequently and thoroughly flushed. He did not favor the application of continuous cold to the eyes, as he had seen much harm result from it. He preferred silver nitrate to either argyrol or protargol.

Dr. PAGNELLI said, in regard to the application of cold, that if the patient was under the constant observation of the physician, the latter would be pretty well guided regarding any complications arising in the case.

Officers for the Ensuing Year were elected as follows: President, Dr. B. A. Waddington, of Salem; vice presidents, Dr. Thomas E. MacKenzie, of Trenton, Dr. Daniel Strock, of Camden, and Dr. Norton L. Wilson, of Elizabeth; corresponding secretary, Dr. Harry A. Stout, of Wenonah; recording secretary, Dr. William J. Chandler, of South Orange; treasurer, Dr. Archibald Mercer, of Newark. The next meeting will be held in Atlantic City.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Bibliographia Gymnastica Medica. Von Dr. EDGAR F. CYRIAX. London: Wörishofen, 1909. Pp. xxiii-161. (Price, 4 s.)

This is a very interesting book, not only on account of its subject, but also because it demonstrates the necessity of an international language for medicine. The introduction and contents are printed in three languages, English, French, and German. A

hundred, even fifty, years ago this would have been avoided by using the Latin tongue. It is, indeed, a great step backward, and it is very much to be regretted that the study of Latin has been so neglected. Its use would greatly facilitate the internationality of medicine, as the artificial languages, Volapük, Esperanto, Ilo, etc., will always remain artificial and will never take the place of any natural language, whether dead or alive.

Dr. Cyriax gives a full list of books published on Swedish medical gymnastics, especially Ling's system, a method which until comparatively recent times was confined to but a few practitioners, but has lately been accepted universally. The catalogue will be of great help to every physician who wishes to instruct himself or to write on the subject.

Sanidad y Beneficencia. Boletín Oficial de la Secretaría. Publicación Mensual. Director, El Secretario de Sanidad y Beneficencia, Dr. MATÍAS DUGUE. Sub-directores, El Director de Sanidad, Dr. JUAN GUITERAS, El Director de Beneficencia, Dr. JUAN M. PLA. Jefe de Redacción, Dr. ENRIQUE B. BARNET. Tomo I. Habana, Mayo de 1909. Núm. 2. Redacción en la Secretaría de Sanidad y Beneficencia. Pp. 339.

The second issue of *Sanidad y Beneficencia* contains, besides an interesting editorial by Dr. Mario G. Lebreo, on the study and investigation of infectious diseases, original articles by Dr. J. Guiteras, Symptomatology and Diagnosis of Yellow Fever; by Dr. M. G. Lebreo, Special Diagnosis of Yellow Fever with Reference to Mild Cases; by Dr. W. W. Dimock, Tetanus Equinus, Popular Instructions; and by Dr. C. E. Finlay and Dr. J. Cartaya, Preliminary Note on the Agent of Trachoma.

The journal appears every month, and the most important original papers are printed in Spanish, English, and French. As the title designates, the journal will contain especially articles on sanitation and charities.

Myomata of the Uterus. By HOWARD A. KELLY, Professor of Gynecology in the Johns Hopkins University; Gynecologist in Chief to the Johns Hopkins Hospital; and THOMAS S. CULLEN, Associate Professor of Gynecology, Johns Hopkins University; Associate Gynecologist to the Johns Hopkins Hospital. Illustrated by August Horn and Hermann Becker. Philadelphia and London: W. B. Saunders Company, 1909.

There will be no lack of interest in this new volume from Johns Hopkins Hospital, even though it is, in the main, but a vast case book. We think, however, that the result justifies the authors' stand that a recital of personal experiences, with the lessons to be deduced therefrom, is preferable to a mere compilation or review of the enormous literature on the subject of uterine myomata. Within the covers of this monograph every form, size, variety, and complication of uterine fibroids is discussed. There are, it is true, some things lacking, such as the technics of surgical treatment of this growth, for which Kelly and Cullen refer to others of their publications; but it would seem to us that in a superbly illustrated monograph of over 700 pages the authors might be expected to include a thorough consideration of the surgery of the disease. The surgical procedures described are thoroughly and magnificently illustrated, but the student, the young surgeon, and the man who has to rely on books for his surgical training will miss this phase of the subject.

There is no further unfavorable criticism to make. There may be objection expressed to this manner of dealing with a subject—of taking only one's own cases and writing a textbook about them; but this is a matter for the authors to decide, and they have chosen this method. They have had the advantage of studying nearly 1,700 cases, and these have given them more than ample material.

The manner of presentation of the subject makes a review of the work very difficult. The attitude of the authors that uterine myomata are always serious is justified by their having found in 1,400 cases seventeen sarcomatous and seventeen other suspicious changes. The chapters on tubal and ovarian changes are most interesting, for the diagnosis of lesions in the tubes and ovaries accompanying fibroids of the uterus, and themselves calling for an operation, is often very difficult or impossible. The authors have found tubal gestation with tuberculous disease of the tubes, for example, and, as they point out, "in only one of the fourteen cases would the physician have suspected tuberculosis prior to operation, the symptoms of the myoma in each case overshadowing those of the tuberculosis." The same thing holds true of the six cases of tubal gestation here reported, as well as of many of the ovarian changes, some of them of a malignant character.

The authors have no theory as to the causes of myomata, but the pathological side of their cases has been most exhaustively studied. This is particularly true of the malignant degenerations.

As we have intimated, every phase of the subject has been scrutinized, owing to the great wealth of material, and to the specialist no less than to the practitioner the monograph should strongly appeal. To the former we particularly commend the page and a half beginning with General Hints in Operations for the Removal of Uterine Myomata. There is a world of experience behind these paragraphs.

The illustrations of Horn and Becker—and a few by Brödel—are of that sumptuous nature with which we have grown familiar in Johns Hopkins publications, but which have set so high a standard that we have not "become cloyed with the luscious figs of Dalmanutha."

The book making is rich and handsome. Altogether, the monograph is a delight to the eye and to the head, and is most worthy of its authors. It is a splendid example of the rapid progress of American professional thought.

Suture of Arteries. An Experimental Research. By E. ARCHIBALD SMITH, M. B., Ch. B., Victoria University, F. R. C. S., England. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. viii-70.

This is a very welcome book as there are very few publications in the English language on the subject of suture of arteries, which procedure was first proposed in 1761 by Lambert, a surgeon of Newcastle-upon-Tyne. The author speaks of the history of different forms of sutures of wounds in arteries and of end to end union of divided arteries, and then describes his own method, with a summary of results of experimental operations on rabbits and dogs—in all, twenty-seven experiments.

As an immediate result of the sutures, says our

author, necrosis occurs in the circumscribed portions of the wall which are subject to the immediate pressure of the suture. This affects all elements of the vessel wall; and by the necrosed area is inclosed a microscopically small and narrow cleft which opens into the lumen of the vessel. In the region of this cleft there occurs some clotting of blood of trifling extent. It is assumed that this thrombus acts as a preventive of hæmorrhage. From the end of the first week onward granulation tissue is already present around the vessel in the neighborhood of the operation. Eventually there appears a new formation of elastic and muscular elements in the fresh scar, which in three or four months after the operation present the same formation of layers as in the old vessel wall.

Transactions of the American Pædiatric Society. Twentieth Session. Held at the Water Gap House, Delaware Water Gap, Pa., on May 25, 26, and 27, 1908. Edited by LINNEUS EFFORD LA FÉTRA, M. D. Volume xx. Reprinted from *Archives of Pediatrics*, 1908-1909. New York: E. B. Treat & Co., 1909. Pp. vii-238.

The twentieth volume of these excellent *Transactions* well maintains the standard of previous years. The work of the American Pædiatric Society has always been of a high character. During the last two or three years it has been of special merit. The present volume is notable for presenting the subject of cerebrospinal meningitis in an authoritative manner. The paper by Simon Flexner reporting 400 cases of epidemic meningitis treated by antimeningitis serum is a notable one. It is followed by papers on meningitis, especially its serum treatment, by Churchill, of Chicago; Dunn, of Boston; Knox, of Baltimore; Hand, of Philadelphia; and Koplik, of New York. Another excellent paper is that of Holt, who reports upon a thousand tuberculin tests in young children. The volume contains about twenty other papers, many of them of great excellence.

Common Disorders and Diseases of Childhood. By GEORGE FREDERIC STILL, M. A., M. D. (Cantab.), F. R. C. P. (Lond.), Professor of Diseases of Children, King's College, London, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xii-731. (Price, \$5.50.)

This excellent book is based upon a series of lectures by Dr. Still at King's College Hospital and the Hospital for Sick Children, London. It is supplemented by numerous articles appearing in other places and by much original matter. It is not a systematic treatise upon pædiatrics, and is not so designed by the author. He has chosen rather to be selective and discursive as it suited his bent. He has intentionally disregarded that sense of proportion which is the very essence of a scientific textbook. His theme consists of merely the everyday and common disorders which occur in children, chiefly in private practice. The title of the book is therefore descriptive of its intent. The clinical and practical aspects of diseases, particularly diagnosis and treatment, are the points chiefly considered.

Based upon this design, therefore, the author with his vast experience and sound judgment has produced a truly valuable book. It is a strongly personal book being based upon personal experience. The author has presented many subjects in a valu-

able and practical manner which it would not have been possible to do had he been under the necessity of treating each subject systematically and completely. It is a book which every physician interested in children, either as a specialist or as a general practitioner, may read with profit. The author quotes the remark of Oliver Wendell Holmes that "a man's opinions are generally worth more than his arguments." While it would not be safe in scientific matters to rely upon opinions without arguments, still there are many points in practice upon which the experience of a thoughtful observer is of great value, even though he may not be able to defend all his conclusions by scientific arguments. Certain it is that a work of this character by a practitioner like Dr. Still may prove to be one of very great practical value.

Diet in Health and Disease. By JULIUS FRIEDENWALD, M. D., Professor of Gastroenterology in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRÄH, M. D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Third Edition, Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 765. (Price, \$4.)

Both authors are well known, and when their book appeared, in 1904, it was so well received that the writers now publish, after five years, a third edition. Quite a number of changes and alterations have been made, new material has been added to the articles on tuberculosis, the salt free diet, and rectal feeding, and the chapters on milk and alcohol have been rewritten. Both these discussions are very valuable, especially the one on alcohol, which is an unbiased statement of our present knowledge. We find there the following remarks: "The use of alcohol is of undoubted value in medicine, and the sweeping condemnation that it has received from many quarters in recent years is not merited. The use and abuse have been confounded. . . . It is contraindicated in individuals who have previously been victims of the alcohol habit and are liable to acquire it again. . . . Small, repeated doses, well diluted with water, give better results than larger and more concentrated doses. The best indication that the alcohol is well borne is a change for the better in the general appearance and condition. . . . In severe toxic conditions from one half to one ounce of whiskey and, in some instances, more may be given every one, two, or three hours, according to the effect produced." The authors give a very valuable review of the consumption of alcohol, of the composition of malt liquors, of the variety and composition of wines, and of the action and therapeutic use of malt liquors and wines.

Another very valuable article is the one on milk and infant feeding, and the paragraph on sterilization and pasteurization covers the subject entirely. We find on page 72 the following sentence: "The disadvantages of pasteurized milk are that it is usually done a long way from the place of production, the milk may be spoiled before it is pasteurized, and, while the bacteria are for the most part killed, the toxins which may have been formed are not destroyed, and so dangerous milk may be sold for good milk. This is, however, counterbalanced by the real lessening of infantile diarrhoea. Another disadvantage is that the milk producer is apt to be-

come careless and trust to pasteurization to kill off the bacteria instead of using cold and cleanliness. Pasteurized milk is popularly supposed to be less digestible than unheated milk, especially for infants. The difference in digestibility of pasteurized and unheated milk is certainly slight, but the best results in infant feeding are obtained by the use of unheated milk. We are of the decided opinion that unheated milk is far superior in the long run, where it can be obtained of sufficient purity to permit of its use. There are other objections sometimes urged against heated milk, such as that it favors the development of scurvy. This is evidently true, but is a lesser evil than diarrhoea." Friedenwald and Rührh's textbook can be well recommended.

Der Einfluss der Mineralwässer auf Verdauungs- und Stoffwechsel-Krankheiten. Von Dr. ROBERT BAUMSTARK in Homburg v. d. H. Halle a. S.: Carl Marhold, 1909. Pp. 62. (Price, Mk. 1.40.)

The author demonstrates in the book before us that for every disease of the digestive tract and metabolism there are one or more mineral waters which can be used and will be helpful. The selection of the respective spa depends not only upon the diagnosis, but also upon other circumstances. Thus, complications have to be considered, and the general health and the financial condition of the patient play also an important rôle. The author is of the opinion that the drinking of the mineral water at the spa is more effective than using bottled water at home, not only because the water coming directly from the well is much better than the best bottled water, but the rest at the spa, the climate, the dietetic régime, the absence of business cares, etc., are all to be considered.

Diagnose und Therapie chronischer Diarrhöen. Von Professor Dr. ADOLF SCHMIDT, Halle a. S. Halle a. S.: Carl Marhold, 1909. Pp. 39. (Price, Mk. 1.)

The therapeutics of chronic diarrhoea is the most important part of the subjects treated of in this booklet. Professor Schmidt states it as his belief that we should allow in chronic diarrhoeas only food which is well warmed, easily soluble, carefully reduced by mechanical means, and chemically nonirritating. Raw, half cooked, and smoked meat should be absolutely forbidden, as the intestine can digest only well cooked connective tissue, and to prepare meat which does not contain connective tissue is practically impossible. Besides, it will be necessary to assist the intestine or to relieve it of part of its work. Food containing cellulose must also be avoided. The patient's food should be as free as possible from decomposing microbes or from material in which certain microbes, especially the *Bacillus coli*, will grow. Upon this foundation is built the author's therapeutics, and he has carried it out well.

Treatment of the Diseases of Children. By CHARLES GILMORE KERLEY, Professor of Diseases of Children in the New York Polyclinic Medical School and Hospital, etc. Second Edition, Revised. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 629. (Price, \$5.)

The second edition of this excellent work, following so soon upon the first, evinces the cordial reception given it by the medical public. The work is not a scientific treatise on the diseases of children, but, as its title indicates, deals solely with treatment and

management. The present edition is enlarged and extended and is a more complete work than the first. It is designed for the general practitioner alone and not for the specialist in pædiatrics or for the medical student. The possibilities of therapeutic measures have increased during recent years in pædiatrics as well as in other departments of medicine. The present work presents the most modern methods of management and treatment. It describes measures in greater detail than is to be found in any other book with which we are familiar. It is a personal book, being based largely upon the author's experience, and is in no sense a compilation from literature. It is eminently practical and describes methods of treatment and management which are not met with in other works. It is by no means limited to drug treatment. The book occupies a valuable place in pædiatric literature and the second edition is a pronounced improvement over the first.

The American Illustrated Medical Dictionary. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, and Kindred Branches, with the Pronunciation, Derivation, and Definition, etc. By W. A. NEWMAN DORLAND, A. M., M. D., Assistant Obstetrician to the University of Pennsylvania Hospital, etc. Fifth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 876.

Dr. Dorland's dictionary is now well known to the profession, and the appearance of successive editions indicates its popularity. It has always been liked for its terse and readily intelligible definitions, but its spelling and pronunciation do not seem to us equally commendable.

Vorlesungen über Diätbehandlung innerer Krankheiten vor reiferen Studierenden und Aerzten. Von Professor Dr. H. STRAUSS in Berlin. Mit einem Anhang "Winke für die diätetische Küche," von ELISE HANNEMANN, Vorsterherin des Haushaltungs-Lehrerinnen-Seminars und der Kochschule des Lette-Vereins in Berlin. Zweite, vermehrte und verbesserte Auflage. Berlin: S. Karger, 1909. Pp. viii-382. (Price, Mk. 7.80.)

It must have been very satisfactory to the author to be called upon, after not quite a year, to issue a second edition of his book. The alterations are only minor, and we need but refer to our review of the first edition, in our issue for June 13, 1908.

Hydrotherapy. A Brief Summary of the Practical Value of Water in Disease. For Students and Practitioners of Medicine. By WILLIAM H. DIEFFENBACH, M. D., United States Delegate and Vice-President of the First International Congress on Radiology and Ionization at Liège, Belgium, etc. New York: Rebman Company, 1909. Pp. xvi+267. (Price, \$3.)

Dr. Dieffenbach gives in his first two chapters an introduction to the subject. He treats of the principles of cure involved and the technique in Chapters III to XVIII, while the practical applications of hydrotherapy are dealt with in Chapters XVII to XXXVI. In his introduction to the practical part of the book the author says: "Although convinced of the almost universality of these applications, we do not desire to be classed among those who in their zeal announce hydrothermotherapy as a panacea, or cureall. There are few abnormal conditions where some modality of hydrothermotherapeutics is not called on to do yeoman service. The triumphs of hydrotherapy in fevers, especially in typhoid fever, where hydrotherapy has succeeded

in penetrating the citadel of conservatism and of traditional medicine which has hampered the progress of the art of healing for ages, are alone sufficient to convince the most skeptical among physicians of the virtues of water in disease."

The book is written by an expert in hydrotherapy, it makes good reading, and is very instructive, but it must not be forgotten that Dr. Dieffenbach is an enthusiastic hydrotherapist. The text is clear, the illustrations are well selected and executed, and the typography is good. The book can be well recommended.

MEDICOLITERARY NOTES.

An interesting suggestion in *Box Furniture*, a book by Louise Brigham, is that the stand for medicine bottles and bandages in an invalid's room also hold pots of flowers and climbing plants.

Tom Hood, in an essay, *Life in the Sick Room*, wrote as follows: "Of all the know nothing persons in this world, commend us to the man who has 'never known a day's illness.' He is a moral dunce; one who has lost the greatest lesson in life. . . . he is one of those gentlemen whose education has been neglected. For all his college acquirements, how inferior is he in wholesome knowledge to the mortal who has had but a quarter's gout or half a year of ague—how infinitely below the fellow creature who has been soundly taught his *tic douloureux*, thoroughly grounded in the rheumatism, and deeply red in the scarlet fever!" Hood also pays this tribute: "Woman, who endures the severest trials with a meekness and submission unheard of amongst men, the Quaker excepted, who merely said, when his throat was being cut rather roughly—'Friend, thee dost haggle!'"

A widely advertised patent medicine affords, in its circular, the following novel physiological information: "While mineral ingredients exist to some degree in the body, by far the greatest portion are vegetable and animal, and of these the vegetable are the most important!" It is indeed interesting to learn that so large a proportion is animal. Some light is thrown on this statement when we recollect that to many people, and not the least intelligent, the hair is a vegetable growth.

Hereward Carrington, who acknowledges in the October *McClure's* that he is one of the greatest living detectors of mediumistic imposture, opens his article, *Eusapia Paladino the Despair of Science*, with a list of distinguished scientists who have been convinced that this particular lady possesses occult powers. We do not acknowledge any of them as experts in spiritualistic fakery, nor because a man is a good conjuror is he thereby qualified as an expert. The antics of the furniture detailed in this article as baffling Mr. Carrington and his colleagues look like the performances of a clever trained monkey and are every whit as valuable from a scientific viewpoint. If we ever had time (and money) to visit the notorious Neapolitan medium, we might spend an hour or so looking up any manufacturer of conjuring apparatus who might be a native of Naples. The real experts are the inventors and manufacturers of apparatus; it is not a month since we saw the best known stage conjuror in the country completely mystified by a simple but

newly invented card trick exhibited by the inventor. After a careful perusal of this new tribute to Paladino's cleverness, we felt Science's pulse and advised that lady to shake off the nympholepsy of her divine despair, wipe her eyes, and sit up to-morrow to take a little solid food.

The Vampire of the South, by Marion Hamilton Carter, in the October *McClure's*, is a review of the economic damage done to the South by the hookworm and the story of the discovery of the offending animal, with a synopsis of the usual treatment. *Ankylostoma* is as usual, misspelled with a "ch." We do not know who has named the worm *Necator americanus*, but why not use good classical words when they are to be had? *Sicarius* is older and better than *necator*, which is late and dubious. The hookworm history is a typical example of what science is doing to banish evils once supposed to be purely moral and the despair of every exhorter, clerical and lay.

The October *Red Book* has several clever and entertaining stories, notably Suretogo, an utterly charming account of the doings of a naughty little girl, by Leslie Adams. We shudder to think what would have happened to Betty had she been born fifty years ago.

NEW PUBLICATIONS.

Brecher, George Emerson.—A Textbook of Surgery. For Students and Practitioners. Illustrated with 415 Engravings in the Text and 14 Plates in Colors and Monochrome. Second Edition, Thoroughly Revised and Much Enlarged. New York and Philadelphia: Lea & Febiger, 1909. Pp. 915.

Martin, Edward.—Surgical Diagnosis. Illustrated with 445 Engravings and 18 Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1909. Pp. viii-772.

Proceedings of the Pathological Society of Philadelphia, 1909. Pp. 308.

Sommer, Robert.—Klinik für psychische und nervöse Krankheiten. IV. Band. 2 Hft. Halle a. S.: Carl Marhold, 1909. Pp. 194.

Imhof, R.—Fünfzig Jahre laryngologischer Arbeit auf dem Gebiete der Kehlkopftuberkulose. Halle a. S.: Carl Marhold, 1909. Pp. 102.

Winkler, Carl.—Die Gewächse der Nebennieren. Mit 26 Abbildungen auf 4 Tafeln. Jena: Gustav Fischer, 1909. Pp. iv-192.

Blumenfeld, Felix.—Verhandlungen des Vereins deutscher Laryngologen. Würzburg: A. Stuber, 1909. Pp. 248.

Hübner.—Blindheit und Blindenwesen. Halle a. S.: Carl Marhold, 1909. Pp. 38.

Scheff, Julius.—Die Extraktion der Zähne für Aerzte und Studierende der Medizin. Zweite, vollständig umgearbeitete und vermehrte Auflage. Wien und Leipzig: Alfred Hölder, 1909. Pp. vi-161.

Thoenen, Emil F., and Weiner, Richard.—Das Wesen der bösartigen Geschwülste. Eine biologische Studie. Leipzig: Akademische Verlagsgesellschaft m. b. H., 1907. Pp. 157.

Nitz, M., and Jacoby, S.—Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenitalapparates. Redigiert von Professor Dr. A. Kollmann und S. Jacoby. IV. Jahrgang. Bericht über das Jahr 1908. Berlin: S. Karger, 1909. Pp. iv-455.

Blumenfeld, Felix.—Spezielle Diätetik und Hygiene des Lungen- und Kehlkopf-Schwindsüchtigen. Zweite vermehrte und verbesserte Auflage. Berlin: August Hirschwald, 1909. Pp. viii-108.

Jelét, Franz.—Meine Behandlungsmethode der Ischias. Erweiterter Vortrag, gehalten am 24. Februar 1909 in der Sitzung der Gesellschaft für physikalische und diätetische Therapie in Wien. Wien: Josef Sáfár, 1909. Pp. 27.

Feuillié, Emile.—Leucopathies, métastases, albuminuries et icères leucopathiques. Paris: G. Steinheil, 1909. Pp. 191.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending October 1, 1909:

Places.	Smallpox.	United States.	Cases.	Deaths.
District of Columbia—Washington.	Sept. 11-18.	1	2	
Illinois—Danville.	Sept. 11-18.	1	1	
Massachusetts—Boston.	Sept. 11-18.	1	1	
Missouri—St. Louis.	Sept. 11-18.	1	1	
Ohio—Columbus.	Sept. 11-18.	1	1	
Roumania (8 counties).	July 18-23.	61		
North Carolina (8 counties).	July 1-31.	50	2	
Smallpox—Foreign.				
Brazil—Bahia.	Aug. 6-27.	18	9	
Brazil—Rio de Janeiro.	Aug. 15-22.	3		
India—Bombay.	Aug. 10-17.	2		
India—Rangoon.	Aug. 7-14.	1		
Italy—General.	Aug. 8-Sept. 5.	18		
Italy—Naples.	Aug. 29-Sept. 5.	9	5	
Java—Batavia.	Aug. 7-14.	2		
Mexico—Guadalajara.	Sept. 3-9.	1		
Mexico—Mexico City.	Aug. 14-28.	7		
Portugal—Lisbon.	Aug. 28-Sept. 4.	12		
Russia—Moscow.	Aug. 21-28.	4	4	
Russia—Odessa.	Aug. 21-28.	11		
Russia—Riga.	Aug. 28-Sept. 4.	6		
Spain—Valencia.	Aug. 21-28.	1		
Spain—Vigo.	Aug. 28-Sept. 4.	1		
Tripoli—Tripoli.	Aug. 7-28.	26	5	
Yellow Fever—Foreign.				
Brazil—Bahia.	Aug. 6-27.	3	2	
Mexico—Merida.	Sept. 9-16.	1		
Mexico—Yacruiz.	Sept. 24.	1	1	
Cholera—Foreign.				
China—Amoy.	Aug. 7-14.	12		
China—Chefoo.	Aug. 28.	5		
India—Bombay.	Aug. 10-17.	43		
India—Rangoon.	Aug. 7-14.	2		
Japan—Amagasaki.	Aug. 14-21.	2		
Netherlands—Rotterdam.	Sept. 4-11.	5		
Russia—General.	Aug. 28-Sept. 3.	520	229	
Russia—Moscow.	Aug. 21-28.	1		
Russia—Riga.	Aug. 28-Sept. 4.	49	19	
Russia—St. Petersburg.	Aug. 28-Sept. 4.	171	82	
Sumatra—Djambi.	July 15-31.	170	78	
Plague—United States.				
California—Alameda County.	Sept. 24.	1		
Plague—Foreign.				
Brazil—Bahia.	Aug. 6-27.	8	4	
China—Amoy.	Aug. 7-14.	52		
China—Canton.	July 24-Aug. 7.	15	12	
China—Hongkong.	July 31-Aug. 7.	3	13	
Ecuador—Guayaquil.	Aug. 21-28.	4		
Egypt—General.	Aug. 19-Sept. 3.	17	6	
Egypt—Alexandria.	Aug. 21-28.	1	1	
Egypt—Port Said.	Aug. 20-24.	1	2	
India—General.	Aug. 7-14.	1,659	1,251	
India—Bombay.	Aug. 10-17.	35		
India—Rangoon.	Aug. 7-14.	27		
Japan—Kobe.	Aug. 14-21.	1	1	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 29, 1909:

BAILLACHE, P. H., Surgeon. (On leave). Detailed for duty on Revenue Cutter *Seminole* September 25 and 29, and October 1, 1909, in connection with the Hudson-Fulton Celebration.

BOGESS, J. S., Passed Assistant Surgeon. Granted seven days' leave of absence from September 24, 1909, under paragraph 191, Service Regulations.

BREADY, J. E., Acting Assistant Surgeon. Granted seven days' leave of absence from October 5, 1909.

COLLINS, G. L., Passed Assistant Surgeon. Detailed for duty on Revenue Cutter *Androscoggin* September 25 and 29, and October 1, 1909, in connection with the Hudson-Fulton Celebration.

CROLEY, T. A., Pharmacist. Directed to proceed to Vineyard Haven, Mass., and report to the medical officer in command for temporary duty.

ELDRIDGE, M. B., Pharmacist. Granted three days' leave of absence from September 24, 1909, under paragraph 210, Service Regulations.

GOCHICOA, A. E., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 12, 1909, twenty-five days with pay, and five days without pay.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted one day's leave of absence, September 30, 1909, without pay.

HERRING, R. A., Assistant Surgeon. Detailed for duty on Revenue Cutter *Mohawk* September 25 and 29, and October 1, 1909, in connection with the Hudson-Fulton Celebration.

HOLT, E. M., Pharmacist. Granted twenty-eight days' leave of absence from October 8, 1909.

HOLT, JOHN M., Passed Assistant Surgeon. Granted one month's leave of absence from August 16, 1909.

HORNING, HENRY, Acting Assistant Surgeon. Granted fifteen days' leave of absence from October 4, 1909.

KRULIX, E., Assistant Surgeon. Detailed for duty on Revenue Cutter *Gresham* September 25 and 29, and October 1, 1909, in connection with the Hudson-Fulton Celebration.

LAVINDER, C. H., Passed Assistant Surgeon. Detailed to represent the Service at the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., October 12 to 14, 1909.

MASON, M. R., Pharmacist. Leave of absence for twenty days from August 27, 1909, amended to read sixteen days from August 27, 1909.

MILLER, CHARLES, Pharmacist. Granted thirty days' leave of absence from September 30, 1909.

MOORE, DUNLOP, Passed Assistant Surgeon. Bureau order of August 7, 1909, revoked; directed to proceed to San Francisco, Cal., September 22, 1909.

NAULTY, C. W., Jr., Acting Assistant Surgeon. Granted one day's leave of absence, September 25, 1909.

OSBORN, J. L., Pharmacist. Upon the arrival of Pharmacist G. W. Iltis, directed to proceed to Portland, Me., and report to the medical officer in command for temporary duty.

SPRAGUE, EZRA K., Surgeon. Granted sixteen days' leave of absence from October 8, 1909.

STILES, CHARLES W., Chief, Division Zoology, Hygienic Laboratory. Detailed to attend the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., October 12 to 14, 1909.

TERRY, M. C., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from October 1, 1909, with pay, and nine days' from October 22, 1909, without pay.

UNDERWOOD, F. R., Acting Assistant Surgeon. Granted twenty-two days' extension of annual leave from August 23, 1909, on account of sickness.

WARREN, B. S., Passed Assistant Surgeon. Detailed to represent the Service at the annual meeting of the Mississippi Valley Medical Association, to be held in St. Louis, Mo., October 12 to 14, 1909.

WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from September 22, 1909, on account of sickness.

WHITE, J. H., Surgeon. Granted fourteen days' leave of absence from September 25, 1909.

WILLE, C. W., Passed Assistant Surgeon. Granted seven days' leave of absence from September 26, 1909.

WOOD, C. E., Assistant Surgeon. Granted seven days' leave of absence from September 28, 1909, under paragraph 191, Service Regulations.

Promotions.

Assistant Surgeon Hugh de Valin commissioned a passed assistant surgeon (recess), to rank as such from September 21, 1909.

Assistant Surgeon Marshall C. Guthrie commissioned a passed assistant surgeon (recess), to rank as such from September 9, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 2, 1909:

BAILEY, EDWARD, First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th, for Philippine service.

BEVANS, J. L., Captain, Medical Corps. Granted leave of absence for ten days.

BOWEN, A. G., First Lieutenant, Medical Reserve Corps. Ordered to active duty and to proceed to Washington, D. C., for a course of instruction at the Army Medical School.

BUCK, C. D., Captain, Medical Corps. Relieved from duty in the Philippines Division, and will sail December 15th for San Francisco, Cal.

BUNDESEN, H. N., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort D. A. Russell, Wyo., for duty.

COWLES, C. D., JR., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division, and ordered to duty on the transport *Logan*.

CRUM, W. H., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Washington, D. C., for a course of instruction at the Army Medical School.

DAVIDSON, W. T., Captain, Medical Corps. Relieved from duty on the transport *Buford* and ordered to Columbus Barracks, Ohio, for duty.

DE LOFFRE, S. M., Captain, Medical Corps. When relieved from duty at Columbus Barracks, Ohio, ordered to Fort Bliss, Texas, for duty.

DRAKE, P. G., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

FLETCHER, J. P., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6 for Philippine service.

FOLEY, T. M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Moultrie, S. C., and ordered to Henry Barracks, P. R., for duty.

FRICK, E. B., Major, Medical Corps. Granted leave of absence for fifteen days.

FRONK, C. E., First Lieutenant, Medical Corps. Relieved from duty at his present station and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

HENRY, Z. L., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

HOLMES, R. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Washington, D. C., for a course of instruction at the Army Medical School.

KING, G. V., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division, and will sail December 15th for San Francisco, Cal.

McLELLAN, G. H., First Lieutenant, Medical Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

MANLY, C. J., Major, Medical Corps. When relieved from duty at Fort Bliss, Texas, ordered to Fort Douglas, Utah, for duty.

MUELLER, ARMIN, First Lieutenant, Medical Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

RAYMOND, T. U., First Lieutenant, Medical Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

RICKKE, G. V., First Lieutenant, Medical Corps. Relieved from duty in the Philippine Division, and will sail December 15th for San Francisco, Cal.

SIMPSON, J. A., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to the Presidio of Monterey, Cal., for duty.

STEPHENSON, WILLIAM, First Lieutenant, Medical Corps. Ordered to Fort Leavenworth, Kans., for duty, upon expiration of his present leave of absence.

TASKER, A. N., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division, and ordered to duty on the transport *Sherridan*.

WIGGIN, D. C., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail December 6th for Philippine service.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 2, 1909:

DAVIDSON, A. B., Acting Assistant Surgeon. Appointed an acting assistant surgeon, with rank of lieutenant (junior grade) from September 27, 1909; ordered to instruction at the Naval Medical School, Washington, D. C.

DIEHL, O., Medical Inspector. Ordered to duty on board the *Charleston* as fleet surgeon, third squadron, Pacific Fleet.

MINTER, J. M., Assistant Surgeon. Detached from the Naval Recruiting Station, Pittsburgh, Pa., and ordered to the Naval Hospital, Norfolk, Va.

SCHMIDT, L. M., Assistant Surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to the Navy Yard, Charleston, S. C.

SHIPPEN, L. P., Assistant Surgeon. Detached from the Navy Yard, Mare Island, Cal.; ordered to Washington, D. C., and to report at the Bureau of Medicine and Surgery, Navy Department.

STRAETEN, R. J., Assistant Surgeon. Detached from the Naval Hospital, Guam, M. I., and ordered to the *Supply*.

TOULON, A. J., Assistant Surgeon. Detached from the *Supply* and ordered to the Naval Station, Guam, M. I.

VON WEDEKIND, L. L., Surgeon. Ordered to the Naval Recruiting Station, Chicago, Ill.

Births, Marriages, and Deaths.

Married.

BRODERICK—GUILLOZ.—In Toledo, Ohio, on Thursday, September 23d, Dr. Frank B. Broderick, of Cleveland, Ohio, and Miss Blanche Guilloz.

CASSEBEER—PEAKE.—In London, England, on Wednesday, September 29th, Dr. H. A. Cassebeer, of New York, and Mrs. Elinor Genevieve Peka.

FREEZE—HUME.—In Portland, Oregon, on Wednesday, September 22d, Dr. Harvey W. Freeze and Miss Anna Ione Hume.

SPRAGUE—FITTER.—In Far Rockaway, New York, on Saturday, October 2d, Dr. Newman J. Sprague and Miss Laura K. Fitter.

THOMSON—WANNAMAKER.—In Philadelphia, on Wednesday, September 29th, Dr. Archibald G. Thomson and Mrs. Mary Lowber Welsh Wannamaker.

Died.

BABINGTON.—In Brooklyn, N. Y., on Monday, September 27th, Dr. John James Babington, aged fifty-one years.

BAKER.—In Jersey City, N. J., on Sunday, September 26th, Dr. E. Mills Baker, aged forty-eight years.

BLACK.—In New Castle, Delaware, on Monday, September 27th, Dr. John Janvier Black, aged seventy-two years.

FELTON.—In Cartersville, Georgia, on Friday, September 24th, Dr. W. H. Felton.

FULTON.—In New London, Pennsylvania, on Monday, September 27th, Dr. James Fulton, aged seventy-seven years.

HARLAN.—In Philadelphia, on Saturday, September 25th, Dr. George Cuvier Harlan, aged seventy-four years.

HUME.—In Kansas City, Missouri, on Monday, September 20th, Dr. Joseph F. Hume, aged eighty-seven years.

KAY.—In New York, on Sunday, October 3d, Dr. Ludwig Kolb.

LEWIS.—In Apalachin, New York, on Sunday, September 19th, Dr. Isaac W. Lewis, aged eighty-eight years.

POST.—In Beirut, Asia Minor, recently, Dr. George Edward Post, aged seventy years.

SCOTT.—In Cleveland, Ohio, on Thursday, September 30th, Dr. Xenophon Christmas Scott, aged sixty-eight years.

VINAL.—In Hamilton, Maryland, on Monday, September 27th, Dr. Walter N. Vinal, aged thirty-five years.

New York Medical Journal

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WHOLE NO. 1611.

Original Communications.

EPILEPSY IN ITS RELATION TO MENSTRUAL PERIODS.

*A Study of Twenty-Three Cases.**

By ALFRED GORDON, M. D.,
Philadelphia.

Neurologist to Mount Sinai, Northwestern General, and Douglass Memorial Hospitals.

The pathogenesis of essential epilepsy is at present still a matter of conjecture in spite of numerous clinical and experimental investigations carried on by competent observers. It is as yet impossible to find a mathematically precise relationship between epilepsy and various factors immediately preceding it or coinciding with it. Epilepsy may suddenly originate in apparently perfectly healthy individuals. It may set in at various ages without an evident cause. When it follows a trauma, an infectious disease, a localized or generalized meningitis, syphilis, alcoholism,—there is no difficulty in explaining the development of epilepsy. But when convulsions with loss of consciousness appear suddenly and without any direct cause, in the midst of perfect health in a young child, in an adult, or at the age of puberty,—one is then confronted with a difficult problem from a diagnostic, prognostic, and therapeutic standpoint.

A comparative study of the metabolic processes in epileptics and in individuals free from epilepsy leads logically to the conclusion that a faulty chemistry is probably the direct cause of cortical irritation, viz.: of epileptic seizures. This view finds its confirmation in the practical experience with cases in which neglect in the alimentation and in proper elimination is invariably followed by increase in the number and intensity of epileptic seizures.

A faulty metabolism may originate from various causes. Among the latter the gastrointestinal tract occupies the first place. The history of the physiological function and of pathological disturbances of the thyroid gland and the recent researches on other ductless glands show conclusively that the organism may suffer from other sources. When the thyroid, for example, is extirpated, together with the parathyroids, the operation is frequently followed by peculiar nervous symptoms, such as muscular twitchings, tremors, spasms, and even tetanic convulsions. It seems that the absence of the organ disturbs the normal chemical processes of the body

by failing to neutralize certain poisons circulating in the body. On the other hand, when after experimental removal of the gland injections of thyroid extract, grafting, or transplantation of the thyroid is done, these symptoms disappear. When the thyroid gland is diseased, various nervous affections follow, as for example myxedema, exophthalmic goitre. Acromegaly is another illustration of the effect of the disturbed function of a ductless gland, viz.: pituitary body. When the suprarenal glands are diseased, Addison's disease is the consequence. A functional disorder or removal of testicles in male and ovaries in female are followed by some disturbances of the organism. While the study of the latter glands from this standpoint has not been as exhaustive as that of the thyroid gland, nevertheless sufficient clinical material has accumulated to show the importance of the subject. Castration before puberty in the male influences considerably the growth of the individual. The physical condition and the character of eunuchs are proofs. I shall not dwell upon it. As to the effect of castration in females before puberty, our knowledge is as yet very meagre, but castration after puberty has certainly an undoubted effect on the nervous system.

The latter subject has received by me special attention. During a period of six or seven years I have been especially observing women with removed ovaries. It is their various nervous manifestations that brought me in contact with them. Almost constantly those who are at an age of full genital activity present flushes of heat, sensations of choking, of oppression; their faces become red, the body is covered with perspiration, while a vague anxiety overwhelms them and vertigo is a frequent accompaniment. Such attacks may occur several times a day, sometimes only once in two or three days, and in some cases once a month at the times corresponding to the previous menses. Generally speaking this symptom group makes its appearance shortly after the removal of the ovaries. In some cases it lasts months, while in others years. As a rule they eventually disappear.

The symptoms mentioned are the most frequent. In a smaller group of cases I have observed modifications in the psychic sphere. Such patients are very nervous, irritable, cannot stand contradictions, have attacks of anger and even violence upon the least provocation. This state of nervous derangement is usually very persistent and not easily amenable to treatment. As to its characteristics, it is not classifiable among the well known functional nervous diseases, like hysteria or neurasthenia. It is a

*Read at the meeting of the Pennsylvania State Medical Society, September 27 to 30, 1909.

condition *per se* and remarkable for its constancy in the clinical manifestations. It has received insufficient attention in the literature. What is striking is the great similarity, if not identity, with disturbances observed not infrequently at the onset and during menopause, viz.: at a period of suppression of ovarian function. This circumstance naturally leads to the conclusion that there must be a certain correlation between the ovary and the function of the nervous system. The latter is thrown into a state of undue irritability when the organism becomes deprived of the normal function of the ovaries. Whatever the explanation of the phenomena may be, the clinical observation is nevertheless correct, and the fact is well established that the ovarian function being disturbed or suppressed produces certain phenomena referable to the nervous system.

I wish now to call special attention to a manifestation occurring in connection with apparently normal and abnormal menstruation. Epilepsy, as we all know, is one of the most obstinate nervous affections. Our investigations in the field of physiological chemistry of various secretions of epileptic individuals, our accurate observations with regard to individual phenomena of an epileptic seizure—all our endeavors, briefly speaking, are done with the object of finding the true cause and the nature of this dreadful malady. Indeed, only accurate and most minute and continuous observations will perhaps lead in time to the recognition of the true factor causing epilepsy.

During the past several years I have given the subject of therapy of epilepsy special attention. (See my publications in *Therapeutic Gazette*, December, 1907, and *New York Medical Journal*, October 20, 1906.) Among the large number of epileptics gathered in my clinics at various hospitals and in private practice I have succeeded in isolating twenty-three in whom the seizures coincided with the periods of menstruation. They were totally free from attacks and enjoyed good health in the intervals between the menses, but at the first appearance (five cases) or during the course (two cases) or at the termination (two cases) or else a day or two preceding the latter (fourteen cases) the convulsions made their appearance. The regularity, uniformity, and persistence of the condition was so striking to the patients that they were able every time at the approaching menstrual flow to take the proper precautions, remain at the house awaiting the epileptic attacks, and thus avoid accidents which otherwise could occur had they been unaware of sudden seizures.

The majority of the patients have been sufferers from epilepsy for several years before they came under my observation. In the majority of them, viz.: fourteen, the attacks occurred with an extraordinary precision a day or two before the menstrual periods. In view of this accuracy in the occurrence of the seizures, a thought naturally suggested itself, that there must be a relationship, as cause and effect, between the function of the ovaries and a cerebral irritation causing epilepsy. That ovulation is capable to produce cerebral irritation in predisposed individuals is admitted. Delirious and confusional states occurring periodically during the menses with normal mentality in the intervals are not infrequent. Examples can be found in the works

of Magnan (*Recherches sur les centres nerveux*), Trénel (*Annales de gynécologie*, v. 49, p. 225), Schlesinger (*Wiener medizinische Jahrbücher*, 1874, f. 1). Moreover, that aggravation of preexisting psychic disturbances coincides with menstruation has been observed. Krafft-Ebing (*Archiv für Psychiatrie*, viii) describing, "das menstruale Irresein" says that the normal irritation of the ovaries produces a reflex afflux of the brain, whose vasomotor centres are put in motion and produce psychic disturbances.

Cerebral irritation in its connection with ovulation may manifest itself not only in purely psychic, but also in psychomotor disturbances, such as epileptic seizures. Cases of this kind have been observed and recorded. Precocious menstruation was in some instances reported as being the cause of epilepsy. The fact of premature ripening of follicles has been considered as the aetiological factor of the seizures (see statistics of forty-three cases discussed by Gebhard in the *Veitsches Handbuch der Gynäkologie*). The same author cites a case of Diamant (*Internationale klinische Rundschau*, 1888, No. 40), whose patient was a girl of six. Her menses appeared at the age of two; at six they ceased and became replaced by epilepsy.

In my study of the twenty-three cases I have endeavored to determine whether any irregularity of menstruation, or a diseased state of the ovaries, have any relation to the epileptic seizures. Only five women presented dysmenorrhœic symptoms, but without apparent disease of the ovaries. A course of treatment by the gynecologist improved the condition, but not totally removed it. As the epilepsy continued in spite of the improvement, the presumption was in favor of the fact that the irregularity and abnormality of the menstruation have not much to do with the seizures. This is only a presumption, but no certainty, as the five patients have not totally recovered from the dysmenorrhœa. On the other hand, if we take into consideration the fact that the remaining eighteen patients did not present dysmenorrhœic symptoms, it is evident that disturbed menstruation has no bearing upon the causation of epilepsy. Analyzing further my cases I wish to state that their epilepsy consists only of one or two monthly attacks, but the latter are as typical as in any other form of epilepsy. There is loss of consciousness, frothing at the mouth, biting of the tongue, tonic followed by clonic convulsions, involuntary micturition, subsequent stupor. At no time during their illness the patients had seizures outside of the menstrual periods. Like in any other variety of epilepsy, some of my patients began to present mental sluggishness and hebetude, and at the time they first came under my observation they presented the mental aptitude and general appearance frequently observed in many inveterate epileptics.

These pathogenetic considerations, viz.: those concerning the evident relationship between the epilepsy and the ovarian function of my patients led me naturally to a certain therapeutic conduct. It was evident that the ovarian secretions or metabolism were at fault. It was evident that some toxine reached the cerebral circulation at the time of menstruation. Whether the poison was elaborated within the ovarian substance or some other chemical perturbation took place, it is impossible to tell. Our

knowledge of the ovarian internal secretion is very limited. At all events, artificially supplied ovarian extract taken from an animal was indicated. A test in that direction for a period of four months failed to relieve the condition. The usual bromide treatment kept up continuously with perseverance succeeded in some of the cases to remove the attacks for one or two months, but the latter eventually returned with the same regularity as before in spite of the bromide treatment. In view of the failure of ovarian extract to improve the condition of my patients in spite of the evident influence of menstruation, viz.: ovulation, on the epilepsy; in view of our meagre knowledge of the ovarian internal secretion which, should it be thoroughly known, could probably throw much light upon our subject; in view of the clinical observations in diseases of the pituitary body, adrenals, and thyroid gland, showing that the morbid symptoms produced by an involvement of one of these bodies are relieved by administration of another, otherwise speaking these three ductless glands are functionally united; finally in view of the fact that the thyroid gland has been the best studied among all ductless glands from a physiological, clinical, and experimental standpoint,—for all these reasons I have decided upon the thyroid treatment.

Every one of my twenty-three patients was placed upon thyroid. The dry extract was given at first in gr. iii doses, three times a day, and at the end of two weeks a gr. v dose was given, three times a day. It is the time of administration that is interesting. During the entire month or a period of three weeks according to the case between the menstrual flows thyroid extract was given, but about three or five days before the onset of the menses the thyroid extract was discontinued and the bromide given instead. As soon as the flow ceased, the thyroid treatment was resumed. In some instances the patient would show signs of cerebral irritation from the thyroid, such as restlessness, disturbed sleep, nervousness. The thyroid treatment would be then discontinued for two days and bromides substituted. As soon as the nervous symptoms subsided, thyroid extract was resumed. This plan of treatment has been followed uniformly in every one of my twenty-three patients. It is to note that the general rules concerning diet and hygiene which are applied usually to epilepsy were strictly observed here. Meats, sweets, alcoholic drinks, tea, and coffee were forbidden. Besides, the diet was salt free. The result from this management was very satisfactory. All the patients benefited considerably, some more than others. The best results have been obtained in those fourteen cases in which the convulsions occurred a day or two before the menstrual flow. Some of the latter patients are still under my care, and a number of months (between nine and twenty-six) elapsed, and there had been no return of seizures. In the other nine cases the attacks would disappear for four, five, or seven months. Three of the first series have had no recurrence of epileptic seizures for thirteen, nineteen, and twenty-six months, and are in excellent health. The cases of the second series while the patients have had periods free from attacks shorter than the cases of the first series, are nevertheless gratified to be relieved even if it is only

for four or five months, and be able in the intervals to attend to their usual duties.

Will these favorable results be maintained? Can we be assured that there will be no recurrence of attacks even in the cases with nineteen and twenty-six months' freedom from attacks? It is impossible to answer affirmatively, as our therapeutic experience with epilepsy is not the most gratifying. We all know of cases in which epilepsy may disappear for months and even years. But what is important in the observations I am reporting is the fact that prior to treatment I have instituted, the usual bromide treatment with careful diet and strict hygiene was carried on and the results were negative.

Conclusions.—The points of interest in my study are, in conclusion, as follows:

1. The undeniable relation of epileptic seizures to menstruation.
2. Absolute freedom from attacks in the intervals between menstrual periods.
3. Apparently perfect integrity of the ovaries and still occurrence of epileptic fits immediately before or during menstruation.
4. The inability of controlling the fits with the usual bromide treatment.
5. The good and even excellent effect of thyroid extract.
6. The mode of administration of the latter, viz.: thyroid extract between the menstrual periods and bromides without thyroid only a few days before menstruation.

No claim is made here for a cure of epilepsy, but in view of the frequently unsuccessful battle with this apparently unconquerable malady we are able to devise methods of treatment and observe favorable results, such observations deserve attention.

Our knowledge of the internal secretion of the ovaries is extremely meagre, but by analogy with other ductless glands we must admit that it plays a certain rôle in the organism. If another ductless gland, like the thyroid, could so favorably influence the symptoms dependent on the ovarian function, as shown in my cases, there cannot apparently be any doubt as to the direct effect of the ovarian secretions on the motor cortex of the brain. A therapeutic test does not of course always prove a scientific fact, nevertheless it is not useless, I believe, to record the clinical observation. The plan of treatment as outlined here has its value at least from a practical standpoint.

1430 PINE STREET.

THE TREATMENT OF ACUTE PNEUMONIA IN INFANCY AND CHILDHOOD.*

By WALTER LESTER CARR, M. D.,
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The treatment of acute lobar pneumonia is essentially the management of the disease by insuring the patient a quiet and well ventilated room with such food as his age requires and the administration of medicine only as special symptoms or complications demand. Since pneumonia is a self limited disease with a favorable prognosis in almost all cases as the mortality ranges between two and six per

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cent., we should not give ourselves too much credit for "a plan of treatment" or "series of cases."

The child with lobar pneumonia has an acute systemic infection and should be kept in bed in a large airy room, and if there is a small cubic area "the open air treatment" with the windows wide open should be inaugurated. If the ventilation of the room is arranged by the physician it will not be subject to the haphazard ideas of relatives and friends. I have seen a suitable room shut up and kept air tight while a nurse worked to stimulate the circulation of a child laboring to aerate its lungs with air deprived of oxygen by nurse and patient. Steam is seldom required except in cases with slow resolution.

The clothing for the child should be of light flannel sufficient to protect but not to overweight the patient. For infants and little children it is safest to pin the bed clothes to the sides of the bed. Flannel jackets covered with oiled silk may be allowed but I have not found any special benefit from their use and prefer a flannel vest. This garment should not be tight lest it impedes inspiration and if loose it is easier for the nurse to reach under it to bathe the infant and to stimulate the chest walls. A small, hot water bag should be kept at the child's feet. Sponge bathing should be made a routine order for every case. Sponging with water at 95° F. without regard to the height of temperature may be practised two or three times a day without depressing the patient. With a febrile rise of 103° F. or over I order sponging with alcohol one part to water four parts at a temperature of 90° F. for infants. In the pneumonia of older children I reduce the temperature of the water for the sponging but order that the bathing should be followed always by friction of the extremities. Not only will the sponging reduce temperature, but it will also quiet the child and give sleep.

The routine application of poultices over the chest is mentioned only to be condemned, as in almost all cases a child with pneumonia has enough exertion to breathe without that made necessary by the changing of flaxseed poultices. These lessen the tonic influence on the vasomotor system that can be effected by stimulation of the cutaneous circulation. The foregoing statement applies to such local applications as antiphlogistine, etc.

I am a firm believer in what Caillé is pleased to call the "toilet" of the nasopharynx in all forms of pneumonia and I use normal salt or boric acid swab applications or very gentle washing two or three times a day.

Food should be prepared according to the age of the child. For infants and young children when milk is the principal article of diet it should be diluted and given in smaller quantities and at more frequent intervals than is the rule in health. While a liquid diet is preferable to any other it is essential to the child's well being during the disease that the stomach should not be overtaxed as this form of pneumonia runs a short course and a little starvation is not injurious and may lessen the digestive disturbance and constipation so frequently observed. Peptonization is helpful where milk is not digested or if there is distress after its ingestion. The same process may be used for cereal decoo-

tions and broths. Good buttermilk such as can be made from tablets containing the lactic acid bacillus is one of the best means of administering nourishment. If milk causes indigestion or diarrhea it must be discontinued and malted milk or similar preparations substituted. Water is to be given freely, not too much at one time nor very cold. When the cutaneous vessels indicate shock hot water is a stimulant that is often better than alcohol.

Hyperpyrexia must be treated, first, according to the age of the child and, second, by the reaction that is established. Very young children and infants do not react well after tubbing in cold water, and routine tubbing should not be ordered unless it is overseen by a physician or by a nurse who is capable of detecting a failure of circulation. A child who has blue lips and cold extremities after a tub and whose circulation cannot be reestablished by friction and heat may be shocked to death by the attempt to reduce the body temperature.

Children who are vigorous and whose circulation is not depressed may have local applications of an ice bag with quieting effect and for infants compresses at 65° to 75° F. may be applied. The analgesia of cold is well understood and will reduce temperature and lessen pain and nervousness both by the local effect of cold and by its influence on the vasomotor system. Not always, however, will cold quiet pain that is occasioned by extensive pleural involvement, nor the pain from irritation of the lower intercostal nerves. In these cases hot stupes or a light hot water bag may be more successful. High normal saline irrigations at 95° F. are useful when the intestine is tympanitic, and they help to combat depression and to reduce temperature.

Elevation of temperature not due to the regular process of a pneumonia nor to its extension may be caused by a distended intestine or a bulging tympanum and will require relief of the local trouble before the temperature falls. The occasional occurrence of cardiac complications must be kept before us, as failures in the treatment of pneumonia may depend on the supervision of a complication.

The medicinal treatment, as may be judged from the plan of management I have outlined, is indicated only when special symptoms arise or complications are present. The heart may have to undertake a great deal of extra work, but as the heart of an infant or young child is usually sound we do not find it necessary to stimulate every pulsation. If the engorgement observed at the outset of an acute pneumonia is intense and circulation and respiration are impaired counter irritation by mustard paste, 1 in 5, will be in most cases sufficient stimulation without oxygen or nitroglycerin. This primary cyanosis, which in children may take the place of a chill, is of short duration and stimulation resorted to at the time should be ordered for a limited period. A dose of calomel will, by relieving hepatic congestion and also perhaps by changing in some way the blood pressure prove a safe inaugural medicine. Calomel may be assisted by a mild laxative, as magnesium citrate or a dose of castor oil, or an enema may be required for a rapid emptying of the lower bowel.

After the initial treatment the patient may be able to do without medicine. Children bear rises of tem-

perature, and coal tar preparations are not called for as sponging and clearing the intestines will usually suffice to lower the temperature.

Cough may be troublesome particularly if there is much pleurisy. For the cough codeine, one sixteenth to one eighth grain, will be efficacious. Morphine should not be administered, and I seldom resort to Dover's powder, never in young children.

Restlessness and delirium not due to ear disease will be relieved by a few doses of sodium bromide. In children with the meningeal or apex type of pneumonia, the bromide may be required for two or three days. As sodium bromide is less depressing than potassium bromide, the former drug may be used for a longer time.

Routine treatment by alcohol, strychnine, digitalis, and nitroglycerin to prepare a child for an unexpected collapse is wrong, and these drugs are seldom required and should not be nearer the patient than the nurse's table. Digitalis is called for when the pulse is rapid and the cardiac sounds show that the pulmonary and systemic circulation is weakened. Nitroglycerin may be given when the heart is showing evidences of failure and when the lung is engorged with a delayed resolution. Alcohol in doses of from 15 to 20 drops of brandy for a child of two years, according to the general strength, may be given, but it is seldom needed in an uncomplicated pneumonia. Usually the indication for medicinal treatment passes with the crisis or soon after it. The complications of croupous pneumonia may be pleurisy or empyema, endocarditis, pericarditis, meningitis, otitis, peritonitis, arthritis, nephritis, and structural changes in glands and tissues. A recognition of these complications is always important but their treatment will not be different from that demanded by any form of systemic invasion with local evidence of disease.

The acute type of bronchopneumonia or catarrhal pneumonia may begin as suddenly as the croupous pneumonia but it is more often observed after a slight catarrh of the upper air passages or an apparently mild influenza. The symptoms of the onset in young infants are not so marked as with lobar pneumonia. Vomiting or diarrhoea may mislead the physician, and an associated bronchitis may give symptoms that almost disguise the inflammation. The course of the disease is usually longer and more irregular than a lobar pneumonia and there is seldom a true crisis although there may be a period that partially corresponds to the crisis of the lobar form.

In bronchopneumonia we need to give more attention to the requirements of a patient for a well ventilated room than is demanded in lobar pneumonia. Open windows or an outside balcony may help us to get the greatest amount of oxygen to the child. Fresh air diminishes the dangers of reinfection in influenzal bronchopneumonia and lessens the virulence of the mixed infection. It will not do to believe that cold air alone will relieve every case, for in infancy the cyanosis and oppressed breathing of an acute bronchopneumonia will be relieved by inhalations of oxygen, the use of alcohol, and stimulation of the chest by mustard paste or friction when cold air alone fails. In infants when there is a true apnoea occasioned by the sudden onset of a bronchopneumonia any stimulation that will bring a cry will assist in aeration.

Patients with catarrhal pneumonia, complicated by bronchitis or laryngitis, may do better in a moderately warm room, from 62° to 65° F., with inhalations of steam even when the outside air is of the best. But for all patients with pneumonia it is necessary to have a free entrance of air and the use of the steam kettle should not be an excuse for closing the windows.

Stimulation of the surface of the chest in bronchopneumonia is, in my judgment, of more value than in the lobar variety. The ingress of air in these cases is impeded by the accompanying bronchitis and by the pressure established on the yielding thorax by every inspiratory effort. Everything that increases the expansion of the lung lessens the danger of collapse and pulmonary changes around the pneumonic areas. I believe that counter irritation, friction, and efforts toward respiratory movement are beneficial. For the first indication I use mustard paste, one part to five or six of flour applied over the back of the chest long enough to show redness. This application should be made every hour or two and if the skin is washed and rubbed with petrolatum no soreness will result. Friction with camphorated oil or with one part of oil of turpentine and six parts of petrolatum is a stimulating mixture often a satisfactory substitute for mustard paste. When the respiration is shallow I direct the nurse to make a half dozen slow up and down movements of the arms as practised for artificial respiration.

Cases of bronchopneumonia show so many changes in the respiration that every form of counterirritation that will stimulate the circulation should be at hand. Stimulation of the chest wall by ordinary means has been described but further stimulation of the respiration and circulation may be deemed advisable. Koplik recommends a bath at a temperature of 105° or 106° F. A mustard pack may be made by adding six tablespoonfuls of mustard flour to four quarts of water at from 105° to 108° F., to which should be added four gallons of water at 98° or 99° F. A piece of flannel should be wet in this and well wrung out after which it should be wrapped around the child's chest and then covered with a light blanket. In all forms of bathing and packing when a child is delicate the physician should direct the treatment and watch its results. When there is a pyrexia of 104° F. or over sponging with water at from 80° to 85° F. will lessen irritability and reduce the temperature. For infants and young children with bronchopneumonia I seldom use cold packs or cold sponging, 75° or below, as the cyanosed condition of most of these children yields more readily to sponging with warm water and alcohol and to brisk friction of the surface. Bronchopneumonia with a temperature at or slightly over the normal will have to be treated by warm baths and stimulation and I believe that cold packs and sponging in the bronchopneumonia of early childhood is not to be ordered unless the hydrotherapeutic measure is carried out under the eye of the physician. Stimulation of the extremities by gentle friction is never harmful and may prove efficacious when there is poor cutaneous circulation or cyanosis. During the whole course of a bronchopneumonia and after its subsidence friction over the chest walls and over the whole body will increase the cutaneous circulation, deepen inspiration, and comfort the pa-

tient. Steam inhalations with compound tincture of benzoin, oil of eucalyptus, or creosote, one drachm to the quart of water, lessen the bronchial and laryngeal catarrh. This form of treatment may be used every two hours or so for ten or fifteen minutes as indicated but the room should not be kept filled with steam without fresh air.

The diet for a child with bronchopneumonia is most important. In cases of lobar pneumonia a mild starvation is helpful and the diet is easily arranged. With bronchopneumonia, however, we have a greater depression, a lessened power of absorption, and a catarrh of the intestinal tract that may call upon us for our best skill. Milk is satisfactory if it can be digested but it may require not only predigestion but dilution and a minimum bulk as many children who have bronchopneumonia suffer from rachitis. If there is milk indigestion and diarrhoea broths or cereals may be substituted for the milk. Peptonized milk, junket, whey, fresh buttermilk, cereal preparations, malted foods, beef juice, chicken broth, chicken jelly, egg albumen, and similar articles will all be needed before the child is able to resume the regular diet of health. The infection of the intestinal mucous membrane makes the problem of feeding an all important one in the management of bronchopneumonia. Intestinal irrigation will be required to wash out the lower bowel and in children who are exhausted by the general infection nutrient enemata may be required to sustain life. All food articles injected into the rectum should be predigested. In nursing children with bronchopneumonia a routine method is necessary but a nurse should have judgment enough not to disturb a baby when it is sleeping nor to worry it every few minutes to give it food. Feeding at short intervals may be required but there should be periods of rest when the baby is not bothered by too much attention. Every child who has bronchopneumonia should have its position changed from time to time to lessen the danger of hypostatic congestion and to facilitate lung expansion. A careful cleansing of the nose and mouth with a weak boric acid solution or a similar preparation should be done three or four times a day. This is especially necessary when there is a thickened nasal membrane or a thick secretion obstructing the nares.

Internal stimulation by hot water and by alcohol should be carried out as symptoms that show depression appear. I do not feel that stimulation by alcohol is always indicated from the onset of an acute bronchopneumonia but as the lung inflammation in this form of pneumonia frequently follows diphtheria, measles, influenza, or a bronchial catarrh each case must be judged by itself. With care in nursing and feeding alcohol is less often demanded than it is with children who have been neglected and in whom the pneumonia has traveled over extensive areas before proper nursing is instituted. Alcohol is to be used when there are depression and systemic poisoning, no matter at what period of the disease these symptoms appear, but alcohol is not to be given without food nor to the neglect of other measures to sustain the vitality. My preference is for brandy as being less liable to increase intestinal symptoms, but good brandy is not always to be had when whiskey is. Children seldom need champagne

and other wines, but I have had good effects from these wines when stimulation by brandy had failed. No preparation containing alcohol should be given to the physiological limit unless directed by a physician. So soon as the effect is secured the dose should be lessened and the intervals between its administration should be lengthened. Formerly I prescribed liquid peptonoids both for the alcohol contained and for the supposed food value, but at present I give the peptonoids less frequently, as I am convinced that the preparation may occasion vomiting and offensive stools.

In addition to alcohol the medicinal treatment of bronchopneumonia is to be carried out as may seem to meet the indications of each particular case. As enteric symptoms and diarrhoea are common a dose of castor oil is serviceable at the beginning of the pneumonia and may be repeated as the presence of mucus in the stools and a free secretion of mucus in the air passages indicates. The well known oleum ricini mixture is serviceable in this class of cases if it is not pushed to an emetic effect nor given too frequently.

Calomel I regard as of less value in bronchopneumonia than in the lobar type but if the tongue is coated and dry, the stools light in color and offensive I give it in small doses.

However, I question the direct action of strychnine. I believe that I can depend more on its good effect in the cases of bronchopneumonia where there is weakness of cardiac action or general failure of strength than I can on any other drug. Caffeine and camphor may serve as vasomotor stimulants, and digitalis may aid when the pulse is rapid but for continued effect I believe that strychnine in doses of 1/600 to 1/150 of a grain, according to the patient's age, is the best circulatory tonic. In cases of severe depression I combine it with caffeine hypodermically and when there is pulmonary congestion, oedema and a flagging of the right heart I use nitroglycerin. Infants bear all of these drugs, but for them digitalis is unsatisfactory except in very small doses for a short time. It slows the heart action and increases the arterial pressure, and it is serviceable with older children with rapid and weak heart action. Its irritating effect on the stomach and intestine may limit its usefulness and require a change to strophanthus. I administer either drug in doses of one half to two minims of the tincture every two hours for five or six doses and then as indicated.

Bromides may be needed for restlessness in infants, just as for lobar pneumonia, but I give them only when nervous symptoms persist. Many children with bronchopneumonia who are depressed by the disease's systemic invasion require alcohol and not bromide. Chloral is seldom indicated, not at all for young babies, and when it is administered it should be per rectum.

If the coal tar drugs are tabooed in lobar pneumonia they certainly have no place in the treatment of the bronchial form.

Cough is more troublesome in bronchopneumonia than in the lobar disease. For infants who have cough with diarrhoea small doses, 3 or 4 drops, of paregoric may be administered every two or three hours. The same drug may be given to older chil-

dren or codeine in doses of 1/24-1/8 gr. The usual cough mixtures are not necessary.

In a prolonged convalescence with older children ammonium carbonate in one half grain doses in water or with whiskey seems to help resolution. For infants and young children small doses of aromatic spirit of ammonia are sufficient. When there is slow resolution with purulent secretion creosote, whiskey, quinine, and a good diet are essential and a change of climate may be necessary.

CONCLUSIONS:

I summarize the treatment of pneumonia in infants and children as follows:

Lobar pneumonia is a self limited disease of short duration and it seldom demands more than nursing and care. Medicinal treatment is needed when symptoms indicative of weakness or complications arise, and to relieve pain or restlessness.

Bronchopneumonia in its acute manifestation may require no more treatment than is mentioned for lobar pneumonia, but as it is a disease that is usually, even in acute cases, associated with depressed vitality or infection, stimulation by alcohol and other agents will be required. In all cases of bronchopneumonia careful nursing and attention to diet will save many lives and lessen the extent and severity of the disease.

68 WEST FIFTY-FIRST STREET.

THE PREVALENCE OF VENEREAL DISEASE AMONG RECENTLY ARRIVED IMMIGRANTS,

With Special Reference to Intermarital Infection.

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At first sight there seems to be no good reason for devoting special attention to the subject of venereal disease among newly arrived immigrants, inasmuch as they do not differ from other human beings, but a moment's thought will reveal a number of features of more than usual interest that surely make the time and effort worth while. The conditions under which the immigrant lives and struggles for a foothold in a new and strange land, the breaking up of the home on the other side, leaving wife and children and all that is near and dear, to await that time when the immigrant shall be able to create a new home on this side of the ocean,—all of this presents a picture that offers ample food for thought.

The immigrant has been thoroughly studied in relation to tuberculosis by Fishberg, Stella, and others, but I have been unable to find any serious reference to the occurrence of venereal disease among this large class of our population. Yet the prevalence of these diseases among the immigrant though not so widespread as that of tuberculosis, presents features that should command the earnest attention of all who have the welfare of the community at heart.

We are at once confronted with the economic aspect of this subject. The average male immigrant

is in the prime of life; whether he is married or single, his sexual faculties are at their maximum height when he comes to these shores. If he is a married man, he may come here with his wife and family, or as he does in the majority of instances, he comes here alone, and leaves his family at home, until such a time as he shall have established himself in this new land of promise and found himself able to provide for his wife and family. During these years of preparation and expectation, his life is that of an unmarried man physically, yet economically and morally he is married. As a result he lives in the midst of a constant and ever increasing struggle between the physical instinct of sexual desire on the one hand, and the moral obligation of the marital vow on the other. What is the result?

The old question, "Is sexual continence compatible with good health?" presents itself. There are and always will be two answers to this question, as it applies to the unmarried man. Some say, continence is compatible with good health; others say it is not. My personal preference is to say that for some men it is, and for others it is not,—eliminating, of course, all side questions of morality and expediency. But with these married men,—may we call them "married celibates" or "celibate husbands"?—the same conditions do not apply. They are living a life that is different from their usual lives; they live under constant stress and struggle and they suffer physical and mental hardships that would wreck the body and soul of men less rugged and vigorous. The strong do survive; the weak succumb. This unnatural and concededly undesirable state continued for a period of years, may not be injurious to the health of a man who is strong in body and in morals, and endowed with a vigorous nervous organization; but it is a fact that a goodly number of these unfortunate men do succumb to the unusual strain. This I have seen many hundreds of times in my work at the Good Samaritan Dispensary (1898-1902) and Beth Israel Hospital. Either one form or another of sexual neurasthenia will develop (1), or as the lesser of two evils, and often as the result of advice given by physicians, they break their marital vows. Result,—a moment of joy and days of despair.

How many, or what proportion of married immigrants who reach these shores and locate in the congested tenements, remain continent until the arrival of their wives years later, it is impossible to say, but in view of the always present temptations of the crowded tenement life, with its congestion and utter lack of privacy, with the promiscuous intermingling in two or three small rooms of men and women, children and boarders, the number of absolutely continent men is surely not as large as it might be.

But it is not with the morality of the situation that this paper intends to deal; it is in the ultimate result of these existing conditions as expressed in terms of venereal disease thus acquired by these "celibate husbands" and afterward transferred innocently to their wives, that we are interested. I am not so much interested in the fact that these men violate their marital vows and are often rewarded by some form of venereal infection sooner or later, as in the fact that this infection usually remains uncured as a legacy, only to be transmitted in due

course of time to the innocent wife. The man thus becomes a menace to himself, to his wife, and to the community in which he lives and moves. It does not require a wide stretch of the imagination to see the amount of damage that can be done in a tenement house family unknowingly, by a boarder who is suffering from active gonorrhœa or syphilis. Too often do we see these things in our hospital and dispensary practice, yet their great frequency is no excuse for belittling their horror.

Stella (2) speaks of "the thousands of innocent Italian women who have had their vital organs sacrificed and their health forever wrecked after joining their long departed husbands, only to be unknowingly contaminated by the deadly poison." And he adds that "this is already telling on the second generation of Italian women in America, who in contrast to the phenomenal and proverbial fecundity of their mothers are showing either 'one child sterility' or absolute sterility."

The same might apply with equal truth to the wives of any class of immigrants,—for their husbands are all equally human and subject to the same emotions and temptations and penalties. At Beth Israel Hospital the patients are practically all immigrants from Russia and adjacent countries, of the Jewish faith and race,—a people whose high standards of morality and purity of home life are world renowned. The section in which they live, the so called east side, is the most orderly and law abiding in the city, and whatever evils exist in a serious measure can be traced directly to the poverty and congestion in which the people live, rather than to any inherent viciousness or immorality of the individuals comprising the group. In spite of the lapses of the few, the average moral state is high, even among the "celibate husbands" whom we have been considering.

This is well shown by the figures of Beth Israel Hospital for last year (1907-08). The total number of consultations in the dispensary for the year was 86,481, of which 3,106 were in the genitourinary department,—a percentage of 3.6. When it is considered that the venereal diseases constitute but a fraction of all the cases treated in the genitourinary service, it is reasonable to say that not more than one per cent. of all the patients who applied for relief at the dispensary (including men, women, and children) were suffering from venereal disease. Eliminating the women and children, we find that we should be within the facts if we say that less than one third of one per cent. of all the men who applied for treatment were suffering from venereal disease.

Surely this is a commendably low figure; nevertheless it is large enough to excite alarm and to receive consideration. I have collected from the records of my service, all the cases of venereal disease, in which the histories were taken with this study in mind. These cases number 210. In taking the histories, the patients were asked the usual questions for record, but in addition they were asked how long they were in this country, whether they were single or married, and if married whether their

wives were in this country or in Europe. Of these 210 men, 114 were single, and ninety-six married; of the latter, thirty-five had their wives in this country and sixty-one were "celibate husbands." It is thus seen that in the period during which these data were being collected, a little more than half of the patients were single men, one sixth were married and living with their wives,¹ and nearly one third were "celibate husbands." The latter, in many instances, when asked whether they were single or married, replied "single," and I am sure a large number so regarded themselves; further questioning brought forth the wife living in Europe. A common answer to this question was "I am single in this country but married in Europe."

The age of these patients is of some interest. The single men ranged from sixteen to thirty-six, an average of 22¾ years; the men with wives in this city ranged from nineteen to sixty-five, an average of 32¾ years; while the men with wives in Europe ranged from twenty-one to fifty-eight, an average of thirty-three years.

Of the total number, 108 had gonorrhœa, and twelve had syphilis, divided as follows:—²

Unmarried men	gonorrhœa	108,	syphilis	5.
Married men with wives here	gonorrhœa	33,	syphilis	3.
Married men with wives in Europe	gonorrhœa	52,	syphilis	4.

More interesting and instructive than these, however, are the figures showing the length of time the men with wives in Europe were in the United States before they became infected:—

Of those 1 year in the United States, there were	9 patients (15%)
Of those 2 years in the United States, there were	15 patients (24%)
Of those 3 years in the United States, there were	17 patients (28%)
Of those 4 years in the United States, there were	12 patients (20%)
Of those 5 years in the United States, there were	6 patients (10%)
Of those 6 years in the United States, there were	2 patients (3%)

Total 61
Average, 3 years in the United States.

It is interesting to note, in passing, that I have seen but one case of intermarital infection among these immigrants in which the conditions were reversed. The patient was a man forty-eight years old, who had been in the United States five years; his wife had remained at home. During all these years, the man states on his honor,—and he seems to be the sort of man that might be believed, that he has been absolutely faithful to his marriage vows. Some time ago, feeling able to do so, he sent for his wife,—and within one week after her arrival, he developed a typical acute gonococcal urethritis. When he first came to the hospital, two weeks later, he presented every symptom of a severe gonorrhœal infection, with acute epididymitis and prostatitis. We can only surmise how and why this man became infected.

Efforts have been made to secure from the gynecological service of the hospital some data that might throw some light on this subject from the viewpoint of the wife suffering from intermarital infection, but these efforts have not been crowned with success. It would indeed be of more than passing interest if the gynecological records would show, in cases of gonorrhœal disease, whether the women were infected before or after their arrival in this country, and if the latter, how long after meeting

¹There were but three cases of chancroid in the series, so they have not been considered. Sexual neurasthenia has also not been included.

their long absent husband the infection took place. Such data would offer splendid support to the information obtained in the genitourinary service, and both combined would make an invaluable record.

In searching for a remedy for this very serious state of affairs, it is seen at a glance that we have not a purely medical condition to deal with. The infection of the wife by the husband is only secondary to the man's primary infection in illicit congress. The disease is, so to speak, a byproduct of the prevailing social and economic conditions that make it necessary for husband and wife to be separated for a more or less lengthy period. The ideal prophylaxis would demand the earliest possible creation of a home in this country, so as to bring man and wife under one roof at the earliest possible moment after landing. In conversation with persons who have had occasion to study this phase of immigration, it has been suggested as a serious measure, that this result might be attained by making it compulsory, on pain of deportation, for the immigrant to bring his wife to this country within a reasonably short period after his arrival,—say one or two years. But this remedy offers the serious objection, apart from the legislative difficulties involved, that it does not take into account the financial status of the immigrant; his ability or inability to maintain his wife and family is not provided for. This is after all the determining point. If the man is barely able to support himself, as is usually the case, it is surely unjust to compel him to assume the additional burden of supporting his family; and it would be equally inhuman and unjust to deport him because of this lack of resources.

Education of the male immigrant is also suggested. This, of course, is always suggested as the cornerstone of any campaign that has prophylaxis as its aim; but when we think of the hundreds of thousands of immigrants who reach this port each year, the enormity of the task of educating these hordes of uneducated men becomes appalling. Nevertheless the soil has heretofore been entirely neglected, and there is a ray of hope in this suggestion. The city is well supplied with private and semipublic agencies that have the welfare of the immigrant at heart. To these agencies belongs the duty of instructing the immigrant in the principles of prophylaxis. I can very well imagine a pamphlet written in the language of the immigrant distributed to every arrival, advising chastity not only because it is moral and right, but more particularly because it is dangerous to be otherwise. It is also possible for the ship's surgeon, while on the voyage, to instill these ideas in the mind of the immigrant before he arrives here.

Of course, these random suggestions do not offer a panacea for the evil we are discussing. Nature laughs at pamphlets and sermons; but if these are taken up seriously, we have advanced a step, and if we have saved but one innocent wife from infection, the effort is surely worth while.

SUMMARY:—1. About one third of one per cent. of all the male patients at the Beth Israel Hospital Dispensary, nearly all recently arrived immigrants, suffer from venereal disease, acquired after their arrival in this country.

2. Of 210 patients in whom the histories were

carefully taken, 114 were single (fifty-four per cent.) and ninety-six (forty-six per cent.) were married; of the married men, thirty-five (sixteen per cent.) were living with their wives in this city; sixty-one (thirty per cent.) had wives in Europe ("celibate husbands").

3. Most of the patients were infected after their first year in the United States; forty-four (seventy-two per cent.) were infected during the second, third, and fourth years.

4. It thus appears that if these men were enabled to bring their wives to this country before the second year, the greatest danger from venereal infection might be avoided. Possibly the conditions are serious enough to warrant such assistance being rendered by organized forces having the welfare of immigrants at heart.

5. The number of wives thus infected unknowingly by their husbands must be very great, but there are no exact statistics that throw light on the subject. It would be interesting to have these figures.

6. The object of this paper is to call attention to the existing state of affairs,—not to offer a remedy. There must be some means of remedying these conditions. They should be regarded as an economic measure, not only for the welfare of the immigrant but of his wife and the community in general.

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105 EAST NINETEENTH STREET.

SOME CONDITIONS WHICH INTERFERE WITH THE VENTILATION OF THE NASAL CHAMBERS IN CHILDREN.

And a Few of the Detrimental Results.

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It has been an undisputed fact for some time that any interference with the normal respiratory excursion acts as an inhibitory factor in the proper metabolic development of the child, in that the individual becomes a mouth breather, and consequently a sufferer from many of the ills accompanying this abnormal condition. The mucous membrane of the pharynx, the larynx, and even the parts below become inflamed by the inspiration of cold, dry, and dust laden air, and the resultant chronic inflammation of these parts makes them more readily susceptible to disease. The interference with the normal physiological action of the nose prevents the air from being properly prepared for its reception by the blood, consequently there is a disturbance in oxidation which has its detrimental effect upon the entire system in the process of development.

It has been further noted that in obstructive lesions of the upper respiratory passages the accumulation of mucus, which often becomes thick and tenacious because of its contact with the air, is not infrequently the cause of much gagging, and some-

times vomiting, before the patient is successful in causing its expulsion. Ear complications are also frequently encountered, and at first may consist merely of tinnitus and impairment of hearing with an occasional ear ache, but if allowed to continue without a search for and the removal of the cause, acute or chronic suppurative otitis media, with permanent loss of hearing is likely to result. Once suppuration of the middle ear has taken place, infection of the mastoid cells through the aditus ad antrum may readily follow and finally necessitate the opening of these cells to bring relief, and to prevent intracranial complications or systemic poisoning, either one of which would soon claim the life of the patient.

The danger of ocular manifestations also demands careful consideration, for it is not unlikely that the nasolacrimal duct, which has its nasal opening beneath and slightly posterior to the anterior end of the inferior turbinate bone, to become involved by pressure or extension of existing inflammation, thus causing an uncomfortable lacrimation, or a more serious complication such as dacryocystitis, conjunctivitis, keratitis, or glaucoma. During the past year a case of a man was seen by me for Dr. Richard Phillips in which a persistent lacrimation had existed for months. Examination of the nasal fossa showed an overhanging, swollen, inferior turbinate pressing upon the orifice of the nasal duct. The application of cocaine and adrenalin reduced the tissues sufficiently to temporarily relieve the lacrimation and to permit the passage of a probe, showing the duct patulous. Removal of a portion of the anterior end of the inferior turbinate bone would undoubtedly have produced a permanent relief, but the patient refused. This case is cited to show that if a redundant turbinate in an adult is sufficient to cause disturbance, very little alteration in the intranasal structures may be sufficient in the small nasal cavities of a child.

When the obstruction has existed for some time, the faulty development of the child is usually well marked. The face may become altered and assume a long and narrow appearance; the palate may be markedly arched; and imperfect alignment of the teeth, with possible overlapping, may coexist. The child appears ill nourished and may show evidence of rickets; especially is this true when hypertrophied tonsils are the offenders, and the child at the same time is absorbing toxins as the result of retained secretions in the sealed crypts. In school, with few exceptions, the youngster is conspicuous by its stupidity and dulness of intellect, and is often unjustly censured, or even punished, for the lack of attention.

In considering the principal anatomical points in a child's nose and nasopharynx, one can readily appreciate from the small dimensions that it takes very little to cause interference with the normal flow of air through these cavities. At birth the opening of the posterior nares is just large enough to admit the end of a medium sized male catheter (1) and while the size of this opening doubles within the first six months, any further increase is not noted until after the end of the second year. In the well developed adult skull, each opening measures an inch in the vertical and a half inch in the transverse direction (2), but these figures are somewhat lessened by the presence of the mucous membrane.

A condition causing obstruction and which is frequently found in children, especially in those of the lower walks of life, is acute rhinitis. While this may be a primary lesion, it is usually secondary to some other affection. To many of the laity, and not a few physicians, it receives no further consideration than any other condition causing mild discomfort. If allowed to continue in infants, however, distressing symptoms may be manifested. Owing to the small capacity of the nasal chambers in such young subjects, it requires but little swelling of the mucous membrane from any cause to entirely occlude these passages, and to compel the patient to breathe through the mouth. This leads to a train of symptoms more or less detrimental to the child's welfare. Finding it difficult, or even impossible to nurse, the infant often refuses food entirely. Loss of weight and strength consequently follows, and the physical condition of the child becomes progressively worse unless proper treatment is instituted to relieve the obstruction. The underlying cause is usually not hard to determine, if a systematic search is conducted. In some cases, however, it may be necessary to wait a day or two for developments, only to discover that one of the infectious diseases, viz., influenza, measles, typhoid fever, smallpox, or whooping cough, is being ushered in.

Purulent rhinitis. Purulent rhinitis as an obstructive lesion is a condition which is more or less common among a certain class of children, especially those who inhabit the slums, where infection of the nasal cavities is apparently an easy matter. The author of a recent textbook, however, states that purulent rhinitis, other than that caused from injury or lodgement of a foreign body in the nose, is an exceptionally rare condition and must not be confused with strumous rhinitis. Snuffles is sometimes recognized in children soon after birth, and in not a few cases is attributed to the infection of the nasal mucous membrane by the vaginal secretions of the mother, who may have previously suffered from an attack of gonorrhœa. It may also occur in children born of syphilitic parents, but one must not be too ready to suspect a specific infection in the parents because of the nasal condition in the child, for in a recent paper before the American Medical Association, Freeman (3) stated that adenoid hypertrophy often produces symptoms during the first days of life which are sometimes diagnosed as syphilis. The discharge in purulent rhinitis is usually profuse, of a thick mucopurulent character, and has a fetid odor. The nasal mucous membrane is red, swollen, and ulcerated, and may frequently be covered with a pseudomembrane which adds much to the discomfort of the patient and completes the occlusion of the nasal passages.

It is thought by some that purulent rhinitis is one of the most common causes of atrophic rhinitis in after life. If such is the case, the most energetic treatment of these purulent conditions is not too severe in an effort to prevent such a deplorable and disgusting result.

Atrophic rhinitis. In atrophic rhinitis we have a condition which has baffled even the efforts of the best. It is found to be a chronic inflammation in which the mucous membrane is dry and shrunken, and in the advance cases, when the obstruction really takes place, the nose is filled with thick scabs, retain-

ing the secretions from which emanate a foul and nauseating odor. The turbinate bodies are involved and appear smaller in every detail. The true cause of such a condition is still a matter of opinion. It has been noted that it is a sequence of hypertrophic rhinitis; while opinions have been expressed that purulent rhinitis is one of the frequent predisposing causes. It seems to occur more frequently in children of tuberculous or scrofulous tendencies, and in young girls who live in poor hygienic surroundings.

A sensation of dryness and irritation within the nose and pharyngeal vault, with almost constant effort to remove the accumulated secretions by hawking, spitting, and blowing the nose is usually the condition of the patient when first seen. The breath is fetid, but the patient is unaware of this horribly offensive odor, because atrophy has involved the terminal filaments of the olfactory nerve, thus abolishing the sense of smell.

The appearance of the nasal cavity shows it to be large and roomy, but filled with thick, greenish or blackish crusts, adherent to the mucous membrane of the turbinates and the septum. After cleansing the cavity the nasal mucous membrane is seen to be pale and dry, while that of the pharynx is dry, glistening, and parchmentlike in appearance.

The treatment of these cases usually taxes the physician to the utmost, as the condition is one of the most troublesome forms of nasal disease to treat, and the ultimate result is not always encouraging. The symptoms can be alleviated, and the patient made more comfortable, but an absolute cure should not be promised. The chief points in the treatment are to free the nose of all crusts, to thoroughly cleanse the membrane, and to keep it in as clean and aseptic condition as possible. An alkaline wash will usually bring away most of the scabs, but when difficulty is encountered, hydrogen peroxide may be added to the solution. Following the cleansing, stimulating applications should be made to the mucous membrane. Hygienic conditions should be improved, and the patient's general health should receive careful attention.

Membranous rhinitis. Membranous rhinitis is one of the acute inflammations of the nasal mucous membrane causing obstruction, in which there is the formation of a membrane involving the epithelial and occasionally the subepithelial tissues. It usually occurs in children who are poorly nourished and live in damp hygienic surroundings. Traumatism to the mucous membrane as the result of counterirritants, the inhalation of hot steam, or the removal of a foreign body from the nose may be conducive to the formation of a membrane, which, to a certain extent, simulates that occurring in nasal diphtheria. However, the grayish white appearance of the membrane, the history of traumatism, the absence of Klebs-Loeffler bacilli, and the characteristic blood tinged discharge, the noninvolvement of the cervical lymphatics, and the usual absence of fever will overcome any difficulty in distinguishing between these two conditions.

A very striking case of membranous rhinitis as the result of traumatism was recently seen at the Poly-clinic Hospital. The mother stated that the child's nose had been cauterized by a doctor who attempted to eliminate some intranasal condition then existing.

The left nostril was found entirely obstructed by the mucopurulent material and an exudate of considerable thickness. The frequent cleansing with normal salt solution and the use of bland dusting powders usually bring relief in these cases.

In membranous rhinitis the mother usually notes a marked nasal obstruction, which causes the patient to resort to mouth breathing. If the child is nursing the observation is made that it retains the nipple for only a few moments at a time, letting go in order to breathe through the mouth. Owing to this difficulty in obtaining nourishment, the child frequently becomes emaciated.

The discharge is usually yellowish white, and is not very irritating to the skin about the vestibules. While the prognosis is usually good, and the case amenable to treatment, the convalescence may be protracted over a period of several weeks.

Nasal diphtheria. While diphtheria is considered an acute constitutional disease, the local manifestations are quite significant, and are practically the only means at hand to suggest to us the nature of the disease. In the nasal variety, which is usually associated with involvement of the pharynx, we have the common symptoms of fever, prostration, etc. The obstruction to the nose is usually marked. The nasal cavity is found to be completely occluded by a thick, grayish membrane, situated upon the septum and the inferior turbinate, and bleeding on separation. A discharge of blood tinged mucus which exoriates the nostril and lip and which contains Klebs-Loeffler bacilli, and recurrent attacks of severe epistaxis are prominent symptoms. Mouth breathing, with an offensive odor to the breath, is present. The cervical glands are involved, and usually to a marked degree.

Upon recognition of the disease the patient should receive sufficient diphtheritic antitoxine to be of benefit, the amount depending on the age of the child, and one half the dose repeated in twenty-four hours, if necessary. Further constitutional treatment should be carefully administered, and any dangerous symptoms combated as they arise. Much comfort will be given the patient by the removal of the exudate from the nose. This can be accomplished in a child by wrapping the body in a blanket, placing it on its side, near the edge of a table, in such a manner that a normal salt solution running into the upper nostril from a douche bag will make its exit through the lower nostril, and by a rubber sheet into a receptacle on the floor. Following this cleansing process, the application of medicine can be more readily made, and with much more beneficial result.

Deformities of the septum. While the cases of nasal obstruction due to deformities of the septum are usually not brought to the attention of the specialist until after the childhood period, there is very little doubt but that a good many cases of deviation of the septum are the result of traumatism during the early years of life, but owing to the period of occurrence, there is no knowledge of the accident. The high arched palate as the result of the presence of adenoids may also be responsible for the curvature of the septum. A slight deviation produced during childhood is thought by some to be more marked in the subsequent development of the

nose, owing to the more rapid growth of the septum than the bones of the face. When the deviation is marked, nasal obstruction with its accompanying symptoms will be more or less permanent until the deflection is corrected.

Numerous and ingenious methods have been devised to correct the deformed septum, but the selection of any particular one will have to depend upon the character of the deviation and the fancy of the operator. The two most prominent operations used at the present time are the Asch and the submucous resection. Several other methods are often resorted to, as the flap operation of Gleason, the incisions as suggested by Sajous, and the operation devised by Watson. In children who are sufferers from the effects of adenoids, the removal of the hypertrophy and the widening of the dental arch by mechanical means will sometimes be sufficient to correct the deformity without further surgical interference. The various operations seem to have for their object the correcting of the deflection by one incision or another, and the overcoming of any further tendency to deformity by packing the nostril with gauze or the use of splints.

Foreign bodies. The insertion of foreign bodies into the nasal chambers, sufficient to cause obstruction, is not an uncommon occurrence with children, and is most frequently met with in early childhood from the time the infant begins to creep. Articles found upon the floor, such as buttons, beans, peas, cherry stones, pebbles, pieces of wood, or anything small enough are frequently inserted into the nose. Here they act as sources of irritation, producing a hyperæmia, a watery discharge, and subsequently an ulceration of the mucous membrane. Mouth breathing and snoring are not unusual, and pain is often produced by pressure of the foreign body against the sensitive membrane.

The foreign body should be removed as soon as possible in order to prevent serious consequences. The freeing of the nostril of accumulated mucus, the application of a weak solution of cocaine anteriorly to the obstruction will often expedite the removal. Sometimes the foreign body can be forced out by the child blowing its nose, or by the use of a Politzer bag, the tip being inserted in the opposite nostril. The after treatment will depend upon the amount of damage done to the mucous membrane.

Syphilis. Syphilis involving the mucous membrane of the nose causing obstruction is considered merely from the tertiary stage of the disease, and consists of infiltration, extensive ulceration, and a marked destruction of tissue. This is especially noted in older children and adults. Gummata may be found on the septum and turbinal bodies, and occasionally may involve the nasal bones and the alæ of the nose. The ulcers are deep, their margins elevated and surrounded by a broad zone of hyperæmia. The discharge from the ulcerated areas is usually abundant, and when cartilage and bone are involved, it has a foul, offensive odor.

The patient usually complains of cold in the head, sneezing, headache, and nasal discharge. The mucous membrane is red and swollen, and in places ulcerated. These symptoms with other manifestations of the disease should not make the diagnosis altogether a difficult one. When necrosis begins,

pain of a throbbing character may be experienced, followed in a few days by a mucopurulent discharge having a very foul odor, which is perceptible to the patient as well as to those with whom he comes in contact. (This will be noted as one of the distinguishing characteristics between syphilis and atrophic rhinitis.) In infants the symptoms attracting the greatest attention are the difficult respiration, snoring, and the inability of the child to take the breast or bottle for more than a second or two at a time without letting go in order to breathe through the mouth. With the symptoms just mentioned there is an almost continual discharge from the nose of a yellowish white mucus or mucopus, which can be removed only with the greatest difficulty, thus we have the condition to which the name "snuffles" is ordinarily applied. Children usually emaciate rapidly, and their skin has a wrinkled appearance, which makes them look very old.

As the destruction of tissue continues and the bones of the nose become involved, characteristic deformities may result before the disease is under control. The care of such cases is the usual constitutional treatment, the removal of all necrosed bone, and the use of cleansing washes for the local condition.

Hypertrophy of pharyngeal tonsil. Undoubtedly the most common condition found among children, interfering with normal nasal respiration is the hypertrophy of the pharyngeal tonsil. When we consider that under normal conditions the space between the nasal septum and the posterior wall of the pharynx is nearly filled by the pharyngeal tonsil, it is not a difficult matter to realize that obstructive symptoms will become markedly apparent if any hypertrophy exists.

The general appearance of most children suffering from adenoids is a familiar one, even to many of the laity, and the diagnosis needs but to be corroborated by digital or postrhinoscopic examination. The dull expression of the face, the pinched nostrils, the thick lips, the half open mouth, the nasal twang to the voice, the presence of coryza with occasionally excoriation of the lip from the acrid discharge, and the inability of the patient to blow the nose are all markedly suggestive symptoms of nasopharyngeal obstruction, and more or less typical of adenoids. A careful inquiry into the further history of the case will usually elicit the fact that the child is a frequent victim of colds, the hearing is often affected, and the respirations are noisy, especially during the sleeping hours, although this latter condition is not infrequently quite evident even while the child is awake. Children thus suffering are seldom robust; nosebleeds are of frequent occurrence, and indigestion is the rule. There may be associated deformities of development on account of the imperfect breathing, i. e., narrowing of the chest, the peculiar chicken breast, and limited freedom of action, thus lessening the physiological function and predisposing the child to grave lesions of the lungs. The symptoms of adenoid hypertrophy are frequently aggravated by associated enlargement of the faucial tonsils.

Such conditions due to obstruction of the free passage of air through the nasal chambers will continue to exist, and in many cases will become pro-

gressively worse, unless the obstruction is relieved, and the development of the child encouraged along natural lines.

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4005 CHESTNUT STREET.

CRIMINAL SIMULATION,

With Special Reference to its Psychological Basis.

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The purpose of this paper is to describe a case of criminal simulation. The term criminal simulation rather than simulation in a criminal is employed because the latter expresses only a partial truth and also that the type may stand clear from the pathological simulation seen in the hysterical psychoses, the degenerative psychoses, and those mental disturbances grouped loosely under the term of prison psychoses but in reality often related to one of the two foregoing groups.

In general, criminal simulation may be considered as an individual interpretation of some mental malady objectively known to the simulant. In a way this is but a restatement of an obvious fact; yet it affords a line as to the peculiar kind of mental operations coming to the notice of the observer. He is enabled to see within an apparently incongruous mass of words and acts the more or less developed "make believe" of the child. Although it may be awkward, although it always lacks the fine imaginative sense of youth, although it rarely, save in pathological cases, carries with it the veridity which encompasses the child, yet it has in it the same translation of inner thoughts and interpretations into outward actions.

The great difference lies in the limitation of these interpretations. In the child, this may be boundless, tied down with few specific and material bonds of experience or imitation; it reaches out illimitably; the sole conative end is an expansion of personality. It is selfdeceiving, in that the imitation ceases to be conscious or is so infused with personal elements as to have lost the bare face of a reflected image.

Just this the criminal never loses. His is a transcription as literal as possible. Except in the very intelligent, there are few personal infusions extending beyond the imitated image. When he over embellishes the picture, it is not with the decorations of fantasy as in the child, but rather with the bizarre and rococo ornamentation consciously attached for the distinct purpose of giving veridity to the observer. Yet he never encompassed a complete interpretation. It is an isolated piece which he portrays with none of the unified swing of the child's make believe. There is lacking the freedom from experiential ties which the child enjoys. He draws

only from isolated personal facts which must be woven into a given pattern, painfully held and fixed by an over strained attention. The very effort makes the process difficult. There is an intendment about the simulant even when the imitated state calls for an expansive type of consciousness. It is a painfully conscious performance. It is not self-deceiving but an active, directed, conscious effort toward deceiving the observer.

These bare generalities will be made more specific following the presentation of the case. The unreality, as possible clinical pictures when compared to their real prototypes, will be contrasted with the reality as subjective interpretative pictures in this displaying the psychological basis of simulation.

The medicolegal significance will rest upon the foregoing discrepancies in the clinical pictures and upon the real criteria issuing from the psychological analysis.

CASE.—The prisoner, in 1908, shot and killed his niece. Evidence was produced showing that the act followed his repulsion by his niece in a wrongful proposal. Immediately after the act he escaped. Nothing had been shown to define an abnormal state at or before the commission of the act. He was captured in two months and remanded to the Tombs. At the time, nothing of a mental disturbance was evident. He knew, appreciated, acknowledged the act. His conduct, his speech, his actions in general, were normal. His physical examination showed nothing. He gave in an admission record; his birth in Trinidad, forty-eight years ago, occupation, a sailor; this but one of several lines of work followed by him. Later history showed a sunstroke in 1884 with no sequelae; a trauma over left parietal region received twenty-five years ago by falling off a horse upon a pile of stone, with no unconsciousness or other sequelae; a considerable drinking extending over a number of years but terminated four months before the act; no evidence of syphilis, no epilepsy, no mental disturbance of any kind; in heredity giving one insane relation, a paternal uncle (type, duration, and outcome unknown). For the first weeks of his stay in the Tombs he had been a quiet, well ordered prisoner, in whom nothing untoward had been observed. He had eaten well, slept well, was friendly and accessible, showing tendency neither toward any depression or excitement. Four days before his stated appearance in court came the abrupt change in his behavior. It appeared in a fully developed form, passing through no transition, preceded by no convulsion, with no trace of an immediate psychic shock. When seen he had wrapped about his head a pillow case arranged like a turban. He was in shirt and trousers, his feet bare. The mattress and bedding were disordered but not thrown on the floor. A paper had been torn in a few large pieces and lay upon the floor. As soon as the examiner stopped at his door, he jumped forward and said: "Good God, give me a match to light my pipe—let me light my pipe. It is a damned good pipe. My name is Hickson, a damned fine name. Give me a light for my pipe. Whoopee! Ho! who is that man in white (referring to a painter). He is a sailor. Give me a light for my pipe. It is a damned good pipe. Whoopee! Look at the water run (he here opened, then shut a water faucet). Whoopee! look at the fishes. See the frogs. Whoopee! look at the rats on the floor. Whoopee! see what is on the wall. Give me a light for my pipe. Whoopee! look at this bed. See me tear this paper. Whoopee! give me a light for my pipe. Look at the rats on the floor. Whoopee! see the fishes. Look at that wall. Whoopee! give me a match, a damned fine match." During the period of observation this formed the content of his speech, repeated constantly. A question he would answer briefly or, not noticing, revert to his series. The order was little changed. No one element seemed to have prominence. In asking for a light, he would hold the pipe up as though to apostrophize it. He always lit the match and put it to the pipe and would smoke the pipe, taking evident care not to break it. He turned the water on and then remarked the fishes. In his expression at this sight was no fear or surprise but only a "make believe" look. Similarly this held for the objects seen upon the wall and floor.

He neither indicated them by fingers or movements of his eyes, nor avoided them in his walk. His eyes were rather upon the examiner when he was calling his attention to these things. He was sedulous in arranging his turban; his mattress was on the bed out of his way but the coverings he continued to disarrange with no purpose connected with any alleged hallucinosis. The paper had been torn in a few large pieces and was not touched by him. He moved about actively but not with any restless insistence. His movements were purposeful, either to the door to speak, or to the water, or to the bed, or toward arranging his head gear. His expression was very intent, not relaxed or expansive nor tensely painful or fearful. It was seen that between the different members of his speech series, he would stamp with his feet, especially when the succeeding element in the series was not immediate in its appearance.

A few hours later he was seen being conducted to court. He had then reversed his shirt and trousers and was capering, crying: "I am a horse, give me a light for my pipe." On this same day he was seen in the prison pen, a room corresponding to a cell but larger. His speech series was the same as at the time of the first observation. It included his pipe, the water in the basin, the floor and the wall of the cell, with one additional factor, a man in the street, as here an outside window fell within his range. Some slight expansion had occurred in regard to the turban. He said he was in India and hence he was wearing this turban and was bare footed, this in answer to a question directed toward head wear and bare feet. He denied knowing or having seen examiner. The distractibility here was quite as slight as in the first examination, his intention more marked. When not under exact observation he quieted, but as soon as approached began his series.

He slept well at night, but toward the end of the fifth day began to show marked fatigue, expressed as such in his motions, but with no depression color to it. A rigid examination caused him to cease this particular behavior. He quieted, answered questions quietly and readily, and then acknowledged, but not to the examiner, that "the game was up."

For the few days intervening before trial he showed more or less sullenness, said he was too tired to talk. There was no depression state here, only a voluntary restriction. He would not discuss his previous state in any form.

His trial, however, introduced a second phase. The basis of insanity was not made to rest upon his conduct of the past week, but upon a delusion, operating at the time of the killing, that the Lord bid him kill his niece to save her from wicked ways. The testimony of the family as to his mental state at the time of the act showed no trace of conduct which could be assumed to be expansive in a delusional paranoid way. It had never appeared in the examinations at the prison nor did subsequent careful examination reveal the existence of any state upon which these delusions might have been built. His interpretation of this disturbing phase was much less expressive than that of the previous active period. There was an absence of systematization, of development, of reaction, making the attempt weak and puerile. He was found guilty and sentenced to death.

In judging a case of this type, one has no right to assume that the manifestation is not genuine. Ample differentials can be discovered by careful observation without committing the fault of prejudging. These differentials should not be solely negative in type as based upon discrepancies between a real clinical picture and a distorted image, but they should quite as well rest upon positive conformations with the psychological make up of a simulation, possessing, as a mental process, distinct marks and characteristics.

The anamnesis here has shown a man of forty-eight years, with an heredity upon one side in a collateral line not clean; development had been normal; life history showed alcoholism, sun stroke, trauma but with no sequelae traceable to any one of these factors; syphilis was denied, epilepsy had never appeared, nor was there to be found any

knowledge of previous mental trouble. His occupation had been hard, making for a rough, coarse, and impulsive type. He committed an act of violence upon a woman known to him but a short time; the act was related to a sexual assault. He had been with his relations for one month previous to the act, without exciting any comment by his conduct which seemed to them normal. After the act he fled, later was apprehended. During his prison term he appeared quiet, orderly, orientated, appreciative of his state and the act leading to it. In the midst of this calm, an acute disturbance developed.

Hysteria might be considered in view of the abruptness and the undoubted psychogenic relation to an approaching trial in which his life was to be judged. The anamnesis, however, shows no hysterical elements, and of all distinctive marks the life history in hysteria is the most reliable. Beyond this psychogenic similarity, nothing further appears. In the content of the speech flow, there was no fullness, no variability, no material with the stamp of reproduced personal experiences; no suggestibility was shown. The entire series was limited, set in a definite order, with no expansions. The same stamp was fixed upon the emotions; while a pseudodramatic acting appeared, it was not a fertile, fluctuating performance expressed in face and attitude. The hallucination showed with no adequate reaction nor was it so arranged as to favor development in the distraction producing acts of the hysteric. No amnesia followed. No disturbances of sensation, no visual limitations, no stigmata were to be found. Any exhibition of the principle of economy of manifestation, of producing no more than enough, failed here. This is a criterion of considerable value, for it is built upon the peculiar organization of a pathological state and can not lend itself to simulation.

A degeneration psychosis may occasionally come to the surface during a prison sentence, but rarely so abruptly, with so complete a state of quiet preceding. Usually these patients have been previously querulous, disorderly, unpleasant. The anamnesis, as a rule, shows a history of variously colored periods with a general antisocial character, undue sensitiveness, suggestibility, and a fixing of real development at an early stadium. Their story is produced spontaneously and early. In other particulars a marked dissimilarity exists. There was no delusional activity, which is almost constant in the degenerative; the hallucinations were simple sense disturbances in their appearance with no reference character; the emotional tone showed no querulous anxiety nor depression; the stream of thought in its limitation, fixity, lack of rapport and orientation was not that of the degenerative except where seen in an hallucinatory interval of some intensity which never endures for long without delusional extension.

A manic phase has no similarity with the period under observation. There was no real flow, no absence of a directing or controlling idea, no distractibility, no true insistent speech or motor activity. The series were simple so far as the component parts were concerned; they had no richness, no flooding of expressions; the brief intervals between the series were filled with exclamations of a simple and recurring type, accompanied by a stamping of the feet significant of a personal appreciation of the

breaks due to the paucity of mental material. There was no elevation of personal feeling, either in content of speech or action. A mixed state, a non-productive mania likewise is not to be considered.

General paresis can find no place either in anamnesis, physical signs, or character of manifestations.

An alcoholic psychosis is eliminated by the long period of abstinence passing beyond the deprivation stage with its consequent psychic irritability, while the possibility of a chronic type finds no support at any point, as no evidence of any paranoiac tendencies or dementing signs had shown.

These foregoing distinctive points are quite negative; they show only that neither in amnesia nor in evolution nor in actual presentation is there to be found any real pathological entity. Therefore, thus may run the argument, the state is simulative. This is both insufficient and illogical as a general procedure. It is always possible that some other state may be present against which this method of exclusion may fail to work because unnoticed by the observer. Moreover, it is manifestly weak to end a matter by merely accumulating a mass of discrepancies and dissimilarities, a negative series, while failing to integrate the elements which fit and belong, the similarities, into a positive series. Out of such a series must proceed the only reasonable conception of a given mental state.

Simulation is imitation of a specific type. As a process or means of growth, imitation is distributed over the life of the individual in a fairly well marked curve. In direct ratio to the years of the individual it merges from an innate, unconscious mechanism to more or less conscious, unpurposeful activity. Its initial aim always is to produce that copy which may be confirmed and verified by the social body as real and identical with the original. In its action, it usually proceeds through numerous small series, from one platform to another before arriving at the dimensions of the object or state copied. Except in childhood this process is usually incomplete, for the fixity of maturity allows of limited changes only. Rarely can the adult arrive at that point at which Professor Baldwin says of the child "he himself never attempts to make an artificial distinction between what he is and what he does—his world of reality is one and he is there in the midst of it." This form of simulation, so near reality, is the possession of every child and the gift of but few of his elders. In these it represents the antithesis of analysis. In the simulated rôle, what he does and what he is, are fused, synthesized.

Right here appears the first distinction. In the criminal, this fusion fails; what he is, continually watches what he does. Upon what he does is rested the onus. What he is, that passes by; he forgets this, assuming that, by what he does, judgment must rest upon what he is. The objective index of this is to be seen in his attitude of intentness, alertness. Even where the simulated state is one resembling apathy or depression, this intentness and real attention can be seen in the musculature and attitudes revealing tenseness and preparedness. In states of apparent excitement, it is not elation or elevation of self which is revealed, but the occasional close and critical glance at the observer to read there the impressions of what he is doing.

A second point depends upon this. Because in the criminal simulant, what he does is so constantly attended to, as it is foreign to him in the absence of fusion between what he is and what he does, from these proceed a remarkable and real limitation of performance. There is usually not alone limitation but preservation due to the presence of the one acute complex present, a complex of tremendous value emotionally, containing in it the possibility of imprisonment or death. It cannot be dismissed or forgotten; the prisoner remains its slave. He is what he is and the simulated what he does stands out as a foreign body, limited in its extent, perseveratory in its reactions. It is this mechanism which produces the monotony and paucity in the exhibitions of the simulant. In the present case it showed beautifully in the limited, perseveratory series, in the painful breaks between the different members of the series expressed in perseveratory motor activities. The type of association is consistent, being that which is termed "outer," with its content so sharply restricted as to deserve the excellent German term of *optische Fesselung*. These are all distinguishing marks of the limiting activity of the complex.

As a necessary corollary to the other points, there can be no developmental picture. While this is largely due to the described psychic mechanism, yet it finds a partial explanation in the slight degree of knowledge possessed by the simulant as to the type of insanity attempted. Usually he has seen but one phase of a clinical series. Hence the abortive picture.

The curious artifacts presenting in the simulation also find their origin in the failure of fusion between what he is and what he does. With complete union, there can be none; action proceeds from being and is harmonious. They all proceed from some chance variation and develop to a considerable degree of embellishment. Usually their nucleus can be found and their growth observed.

All these factors go to form a state lacking in that fine touch of selfdeceiving which makes for reality to the observer. Its loss we may see in the painful alertness, limitation of content, activity of an intense complex, lack of developmental nuances, and the featuring of strange artifacts. But there is something beyond these definite marks which we can only vaguely express, for it is, at best, an impression, that the simulator has failed to convince himself of the veridity of his simulation. There has been no change in what he is, but only in what he does.

These positive criteria in simulation as a mental process are gathered in the present case only from bare observation. They should rest partly upon tests whenever possible, for in this way only is it possible to substitute for impressions definite and exact findings. Yet both proper observation and sufficient tests are limited by conditions existing in our prisons. In every penal institution there should be a place where these persons, presenting abnormalities in conduct, might be isolated under special conditions making for the exact and continuous observation of the present hospital system. In every point, save this, many of our institutions are model. The change here will come when the State realizes more clearly the economic advantage accruing in

the more careful determination of her relation to the criminal during the period of detention prior to trial. To arrive at this means only the use of methods analogous to those of the admirable institution which now cares for those criminals who have formally been adjudged to be insane. It is toward defining the methods of careful and complete diagnosis that the last steps must be taken in the detention prisons.

55 EAST FIFTY-SIXTH STREET.

THE PERSONAL SIDE IN THE TREATMENT OF TUBERCULOSIS;

A Factor of No Small Importance.

By HOWARD D. KING, M. D.,
New Orleans.

That the vigorous, educational campaign conducted during the past fifteen years has been responsible in a great measure for a material decrease in the ravages of the white plague can not be denied; but, notwithstanding the great advance made in the treatment of this dread scourge the work of education must continue until the disease has been robbed of its terrors and is confined within normal bounds. In the treatment of tuberculosis we should bear in mind that the medical problem is one of secondary importance compared to the social and economic feature. The writer well realizes that the subject in all phases has been liberally dwelt upon by the foremost medical authorities, but it is not his intention here to attempt to offer anything "new" in the ordinary sense of the word. This paper proposes to deal with that type of patients or sufferers who have not sufficient means to enjoy the advantages of the ideal outdoor sanatorium treatment, superalimentation and tuberculin therapy, and whose financial situation is such that they are unable to cease work in order to undergo treatment for their affliction. This, in brief, is the object of this article.

Patients of wealth, as we are aware, are able to obtain the most skillful medical advice and treatment, and as a result their chances of recovery are greatly increased and the effects of the disease minimized; and thus, the outlook for them is more hopeful than that of their less fortunate brothers. The poor, the ignorant, the weak and underfed when afflicted with the disease become a concern to the State only, we may perhaps say, and their ultimate destiny must be solved by local and State authorities at least until such time as health matters are placed exclusively under the control of the national government. But how to treat the intelligent, honest, and ambitious workingman of small income in an intelligent and sane and yet inexpensive manner in order that he may continue to earn a livelihood and so remain an important factor in our social and economic progress and development is, perhaps, the problem of most interest and importance to the profession and the community in general to-day.

The annual visitation of influenza, pulmonary and bronchial affections leave in their wakes large numbers of afflicted in such a condition that they earlier or later prove very susceptible to tuberculosis.

Because of the exposure, the general environment, and the poor hygienic conditions of the working class they are more prone to phthisis than others. In dealing with influenza, pulmonary and bronchial affections, medical men should observe with care and caution the condition of patients at the apparent termination of the disease. It should be a rule that no sufferer from influenza, pulmonary or bronchial trouble be discharged as entirely cured unless he has been under observation for at least thirty days subsequent to the termination of the acute stage of the disease. Where the individual is of the strumous type he should be kept under observation for a longer period—say, sixty days, and in some cases ninety days. During this period of observation weekly examinations as to thoracic conditions should be made; biweekly bacteriological examinations should also be made; and an accurate record be kept as to body weight and general condition of the system. The careful physician will, of course, note all physical changes and not confine his observations to pulmonary changes alone. It is a recognized fact that the conditions variously described as "postinfluenza," "postpneumococcal" and "bronchial" are responsible for the great majority of all cases of phthisis seen at the end of the cold season and early spring. Thus, by keeping the patient under constant surveillance we are able at the first indication of trouble to take prompt steps either to permanently arrest the infection or, at least hinder its further progress.

Upon learning the patient's condition the physician should indulge in a "heart to heart" talk with his patient and should discuss his case with him from every possible view point. Every case for the physician should possess a keen interest, and largely upon the interest displayed by the physician will depend the results, good or bad. He should enlighten him and instruct him as to the modern methods of treatment and what assistance is required of him if he expects to regain his health or not suffer any further physical impairment. The physician should not confine his labors to treating the sick only when called, but should exercise a watchfulness over his patients at all times. In short, he should regard himself as the caretaker of every family under his care whether well or sick, and as soon as he observes any member thereof failing or not looking to be in as good state of health as he normally should, inquiry should be made and the actual state of health determined. If this rule were faithfully followed a great number of infectious processes would be caught in their incipency, and having taken time by the forelock the physician's position would be one of vantage and enable him to cope more effectually with the disease. In no case of illness would such a course be more valuable than in the treatment of tuberculosis.

Once the condition of a patient is recognized as pulmonary, as said before, we should tell him everything. Set aside an hour or two some evening and invite the patient to your office and have a friendly and earnest talk, stripped of as nearly all the "frills" as possible, and let him know exactly his condition and what his chances of recovery or prolongation of life are. Talk to the patient plainly and avoid the use of technical language insofar as possible. Give to him to read at his leisure those copies of medical

magazines containing the latest methods of treatment in the combating of the disease. Quote in a general way statistics as to the efficiency of the modern treatment. If possible, furnish him with names of former patients who have improved under the modern treatment. Inquire rigidly into his habits, mode of life, occupation, etc.,—in fact, so gain his confidence that he will voluntarily tell you everything relative to his life, bearing on his condition. Having gained the complete confidence and good will of the patient, the physician's task is relatively easy. Foremost above all things, tell your patient the truth—do not practise deception. If he asks a question answer him frankly and do not prevaricate. If the case is not well advanced beyond the middle of the second stage, tell the patient his chances are not as good as would be the case in the first stage; and, if the case is in the third stage, inform him that his chances are considerably less than if he was only in the second stage. If the case is in the early part of the first stage, you may safely assure the patient that his condition is not a hopeless one—provided he follows strictly the advice given him. If the patient is a person of vicious habits such as alcoholic or drug addiction, or is a debauchee, moralize with him in a rational manner and expatiate on the dangers of his course of life and demonstrate to him how his future conduct influences his chances of recovery or prolongation of life. In heavy drinkers and smokers, withdraw gradually the privilege of the use of alcohol and tobacco and thus secure the advantage of greatly lessening the nervousness caused by the sudden deprivation of these two harmful agents following their previous unwise indulgence.

If the occupation of the sufferer is an indoor or sedentary one we should point out to him its disadvantages and urge upon him the necessity of outdoor work even though at a somewhat reduced scale of wages. When we advise the patient to seek outdoor work, our task does not end; we must go over with care the list of outdoor employments and ascertain which particular one our patient is best capable of following and most suitable for his condition. Merely to tell a patient that he must obtain outdoor work and then dismiss him falls short of the physician's full duty. For example, a bank clerk of moderate salary could not well drive a truck and control two fractious horses, but he might make a very competent lumber checker on an open wharf, and thus be able to earn a livelihood under the desired conditions and yet maintain his health. Again, a warehouseman might not fit in as an insurance solicitor, but he would doubtless make a street car flagman. These two examples are (and there are many more) cited only to refute any excuse the patient might offer as to his inability to do outside work. The writer well realizes that it is a hardship to be compelled to abandon a trade or employment yielding a comfortable or even generous living, but we must reflect that good health is one of the most valuable assets of a human being and adopt the, perhaps, harsh, though necessary, course indicated. For convenience it might be well to have a printed or type-written list of outdoor occupations and hand it to the patient and inquire if he has any friends in the industries so listed; and if he has such friends, suggest that he lay before them the state of his health

and accordingly request outdoor work. In this great day of fraternities and benevolent associations the average man can easily make known in the lodge room his desire for an outdoor occupation, and this will probably be fruitful of good results. Much good can be often accomplished by these two means.

While perhaps it is generally known in the profession, the following occupations may be classed as purely outdoor work: Wagon driver; installment house solicitor; canvasser; sample and circular distributor; newspaper carrier in residential district; industrial life insurance solicitor; collector; gardener; street crossing flagman; railroad crossing signalman; bridge tender; lumber checker; freight tallier on open wharves and in spacious yards; private police upon river docks, residential sections, and in the open yards of great industrial plants; and timekeeper, foremen, and messenger; track inspector and semaphore operator in open stations; all more or less in intimate relation with railroading. Doubtless it is equally well known the open air occupations to be strictly avoided are: Chauffeur in the day and night garage because of the irregular habits, long hours, loose associates, and the tendency to overdrinking and carousing with patrons bibulously and sportily inclined; employment on street tramways as conductor or motorneer is also an occupation to be avoided due to the great crowding of passengers and the indiscriminate expectoration on the platform where the employee is stationed and the confinement within an ill ventilated and poorly arranged form of vestibule ostensibly designed for the employee's health, more especially with regard to the prevention of colds; the driving of vehicles containing soiled laundry, garbage, trash, and paper sweepings, etc. Of course, the physician will enumerate to his patient the occupations termed unhealthful according to the life insurance experts, marble cutters, steel grinders, emery workers, etc. It is a misapprehension to believe that tuberculous subjects can not be benefited by outdoor life even in a large, crowded city. My observation has been that being outdoors is a great help to the patient even if it is in the city and I have had wonderfully fortunate results in a large number of cases—notably printers, grocers, draper's clerks, and office workers. Whilst the writer realizes the manifold advantages of ideal sanatorium treatment, coupled with proper climatic conditions, it has been his experience that outdoor work and life in a large city has restorative powers not to be derided. At the same time the type of work must be most carefully selected. If a patient informed me that he had secured a position as flagman in the heart of the Pittsburgh steel district, I certainly would not call that beneficial outdoor employment. The physician of any community is properly regarded as a civic factor of no small import, regardless of his political affiliations, and he should exercise this influence in behalf of his patients. To resort to this might excite comment of a critical nature from some of the more narrow minded or illiberal of the profession but it is the physician's some time duty to go to extremes, if need be, in behalf of his patient.

Inquiries as to the diet should be made—find out the likes and dislikes of the patient—how many meals he eats a day and at what hours and their mode of preparation. Having learned these facts it

is the duty of the physician to prepare a dietary and explain why certain foods are helpful and why others are harmful and not to be eaten. By judicious questioning one can learn how much "pin money" the patient spends daily for cigars, cigarettes, and drinks, and then by skillful argument and a little tact show him how much advantage can be gained by expending this same amount in the purchase of pure fresh milk. Prevail upon the patient that when he feels like taking a cocktail or a gill of spirits to substitute milk for it.

It is a wise rule to permit the patient, if intelligent enough, to keep his own weight record or chart. By so doing a certain enthusiasm and an interest in the progress of his health is created which proves of no small help in the treatment. Note the slightest change in body weight, and if able to locate the cause tell the patient about it—possibly it springs from some indiscretion on his part. If the patient is at fault gently rebuke him and admonish him to be more careful in the future. Instruct the patient to use the same scale all the time and not vary the weight of his clothing when weighing. The record of weight should be kept weekly.

It is a comparatively easy task to show the patient the advantages to be derived from outdoor work, but a very difficult one to convince him that it is beneficial to his health to sleep with the doors and windows wide open with the temperature hovering around the freezing point and often lower. It has been a rule of mine, when arguments are advanced against this part of the treatment, to give the patient copies of several medical journals or even loan him books, containing illustrations of tuberculosis camps and sanatoria showing the patients sleeping outdoors with snow heaped all about their window or gallery. A good idea is to refer the patient to the advertising section of the medical journals and let him write to the various sanatoria and outdoor camps and colonies for their illustrated advertising matter. These details may appear to be of no consequence, but really they are fraught with much good in that they create an impression of interest in his behalf and they further stimulate the patient to at least give the plan a trial. If possible, get the patient to sleep on a gallery or top of the roof, and if he should consider this too radical talk to him about the window tents and screens arranged so as to expose the head and face and cover the rest of the body. If his revenue is insufficient to procure one, show him a cut and let him obtain a general idea of its construction and build his own. The principal object is to make the patient interested in himself.

As to exercise, give the patient all the advice necessary and impress upon him the need of respiratory exercises. All exercise and recreation should be in the open air. Apprise the patient of the dangers in visiting crowded, stuffy, dirty, and poorly ventilated places such as balls, music halls, beer gardens, kinetoscopic shows, and theatres. To the young man frivolously inclined, nothing aids more the tubercle bacilli in the work of destruction than dancing in a crowded resort where the floor is a mass of sputum, cigar stumps, liquor drippings, and sand heterogeneously mixed and all wafted into the atmosphere in the form of dust by moving feet by

the participants present. Convince the patient that a few hours spent in a large, airy park or upon the deck of a ferry boat is much better for his health than an evening in a "10-20-30" theatre listening to the rantings of an underpaid and overworked stock company. Under all circumstances excessive venery must be interdicted, and newly married couples should be cautioned to enjoy in moderation the pleasures of the marital state.

The treatment of tuberculosis should not consist merely of a visit to the physician where the patient is informed that his lungs are affected and that he needs fresh air, plenty of sunlight, milk, and raw eggs, and two or three hurriedly written prescriptions for creosote, cod liver oil, and a reconstructive tonic, and at the close of the consultation request the patient to send over specimens of sputum some day during the week when he has time. Every patient presenting tuberculous symptoms should be given the same attention as an application for a reprieve from hanging before a board of pardons. We should assume the patient to be a man awaiting almost his doom and whose fate hangs in the balance and is dependent upon our advice, counsel, and examination, which should be exhaustive, painstaking, and conscientious. Manifest a genuine and whole souled interest in the case and in the patient, and study both thoroughly from every standpoint, and the treatment of tuberculosis will become a much easier and pleasant task.

2131 BARONNE STREET.

THE INFANCY OF THE PRACTICE OF MEDICINE AND SURGERY.

By HERMAN POMERANZ, M. D.,
New York.

FOREWORD.

(The writer recently entered a plea, in the columns of this *Journal*, for the advancement of the study of medical history. That the subject has been sadly neglected among medical men and institutions is sufficiently patent to all whose interest in the science of medicine extends beyond its dollar making aspect. The obloquy for it rests not only on the practitioner of to-day but likewise on our medical ancestors of yesteryear. Physicians, unlike the students and devotees of other sciences, have always viewed with a strange apathy, the history of their grand and glorious science. In order to popularize and in a sense to stimulate a healthy interest in the subject, the writer contemplates the publication in this *Journal* of a series of articles to be entitled *The Infancy of the Practice of Medicine and Surgery*. It will not be the author's aim to present the reader with a profoundly exhaustive work. For the busy practitioner a panoramic survey of the subject is amply sufficient. It will be the writer's endeavor therefore, to narrate succinctly the initiatory ideas and the successive stages of development, the various systems, and the epoch making discoveries, of the science of medicine.)

PREHISTORIC SURGERY.

Where and when in the dawn of Time man first took cognizance of the curative instinct is really of

little moment and can be of interest only to speculative Tantaluses—to men of iridescent intellect, like Buffon and Haeckel, Lamarck and Lubbock. Anthropologists have endeavored to explain—with many ingenious theories born of the evidence of fossil remains and of the imperishable, mute records of rocks—the exact origin and birth place, the habits and customs of primæval man. Their researches and life labors must ever remain food for endless conjectures and dispute.

The curative instinct aboriginally bestowed upon man is nothing else than the eternal, the universal instinct of self preservation. It is highly probable that primæval giants maimed in encounters with mastodons or marauding warriors, retired to rest and to heal their broken limbs in the solitude of their caves or beneath the shade of mountain high trees. Also instinctively and of necessity, they must have abstained from food, thus assisting in a "cure."

It is obvious that our knowledge of the medical practices of prehistoric man must be purely conjectural. As regards their surgery, however, archaeologists have thrown considerable light on the subject. It is mainly to Dr. Prunierès and Dr. Charcot and M. de Baye, with their exhaustless energy for research, that the world is indebted for its knowledge of the interesting subject of prehistoric surgery.

About thirty-four years ago Dr. Prunierès made some curious discoveries in the Baumes-Chaudes caves—immense prehistoric burial grounds—situated in the valley of the Torn, part of the district of Lozère, France. He found a few hundred skeletons which revealed upon examination, healed fractures, trephined skulls, and in some instances, the weapon which caused the wound and the death of the individual. Dr. Prunierès a year later in an admirable report to the French Anthropological Society in session then at Lyons, described his findings in detail. He presented from his collection one of the parietal bones of a human skull with a trepanned area, into which a disk of bone, thicker and darker than the parietal itself, had been fashioned. Similar discoveries were soon made in Copiapo, Chile, and in Madisonville, Ohio. Up to 1888 over two hundred of these perforated crania or portions thereof, were collected by Prunierès, Broca, M. de Baye, and others.

The trephining in most cases was evidently performed post mortem, but in others the ante mortem operation did not appear to have had any immediately fatal effect. The edges of the trepanned area showed evidences of having healed during the life of the individual. Trepanning was probably performed by boring a number of holes circularly, and then chiseling away the bone by means of sharp-pointed flint instruments. Every part of the skull, even the frontal bone, has been found trepanned.

Various theories have been advanced to account for the practice. The suggestion has been made that it was performed in honor of some deity as a religious rite. Broca gives it as his supposition that in most cases the operation was performed on epileptics, the insane, and those suffering from chronic headaches (1). A hole was scraped in the patient's skull to permit the supposed ætiological demon to escape. The disk of bone excised was used as an

amulet. An ancient surgical treatise is still extant, in which scraping of the outside of the skull is recommended as a "cure" for epilepsy. (*Traité de l'épilepsie, maladie appelée vulgairement la gouttete aux petits enfants*, Jehan Taxil.)

Dr. Prunierès in some of his cases clearly demonstrated that trepanning was resorted to as a cure for caries and periostitis.

Trepanning is an exceedingly ancient practice. It is still performed as a religious rite by the "thebibes"—priests—of the Kabyle savages.

DISEASE DEMONS.

In the absence of records of any kind it is of course impossible to formulate positive ideas anent the medical practices of prehistoric man. Our knowledge, mainly conjectural, can be derived only from a study of the healing art as practised among savages. They have retained the superstitious beliefs of their ancestors of an extreme antiquity, just as we find even to-day, among many civilized peoples, traces of a former barbarism. Explorers have illuminated the curious medical customs of savages in the unfrequented byways of the world.

To the infantine intelligence of the barbarian mind injuries, disease, and death (like all natural phenomena) were caused by various supernatural spirits—by special disease demons, by human and animal enemies, mort and living—who acted independent of and in consort with, evil spirits. With savages, as Darwin observes somewhere, the belief in vengeful spirits is more common than in good ones. The belief in spirits passed into the belief of one or more gods, who when angry, must be propitiated to keep off the disease demons. A sick savage was considered and considered himself the habitat of a busy and tenacious demon, to dislodge whom the body and the environs of the sufferer were made unpleasant for the demon's sojourn, by means of fumigations, incantations, hideous cries, and noises of all sorts. The patient was likewise beaten and starved by the priest of the clan, in order to accelerate the demon's departure. The priests, the first physicians, were supposed to have a most potent influence over all disease causing spirits. The superstition that certain men could expel disease by means of charms and incessant incantations developed into the belief that men, in partnership with the devil, could cause disease and death. Thus the belief in witchcraft came into the world and signified, according to Buckley, a voluntary compact between the devil, the party of the first part, and a human being, male or female, wizard or witch, the party of the second part, that he, the devil would perform whatever the person might request. There are witch doctors even to-day, among the enlightened as well as the ignorant farmer folk, of eastern Pennsylvania, especially in those localities known as "the German communities." The witch, or "hex," doctors as they are called, guarantee to cure all diseases. When a child is taken ill the witch doctor is immediately summoned and with incantations is supposed to counteract the disease spirits tormenting the child. Here follow two of the cocksure remedies of these "hex" gentry: "To ease a 'pain': Cut three little sticks. Cut them from one piece. Rub them on the sore, wrap them in a little white

paper and put them in a warm place." "To 'drive' away warts: Roast chicken's feet and rub the warts with them; then bury them under the eaves. (Which, the warts or the chicken's feet?)

Students of American history are familiar enough with the witchcraft plague as it reigned in the early settlements of the New England States.

Astley, in his *Collection of Voyages*, informs us that among the Kaffirs, diseases are attributed to three causes, either to being enchanted by an enemy, to the anger of certain beings whose abode appears to be in the rivers, or to the power of evil spirits. Thus, when a savage was ill, he thought that his sufferings were due to some enemy within him Taylor (2), among the New Zealand savages found that they attributed each disease to a specializing deity. The god Tonga, caused headaches and sickness; he made his "head"-quarters as it were in the forehead. Maki-Tiki, a lizard god, was the aetiology of all pains in the precordium. Tutangata-Kino was the gastric god. Titi-Hai, for neuralgic pains. Rongomai and Tuparipapu—in partnership most likely—were the gods of phthisis. Karo-Kio, the gynaecological specialist.

The Rev. Dobritzhofer, in his *History of the Abipones* (Paraguay) quoted by Lubbock, relates how the Abiponean physicians cure all diseases. They apply their lips to the part affected and suck it, expectorating after every suction. At short intervals they take a forced inspiration and then blow upon the part of the body affected. The blowing and sucking are alternately repeated. The evil spirit in the body is thus supposed to be drawn out. This method of healing is also practised among the Brazilian natives. When the physicians prepare to suck the sick man, they conceal thorns, worms, beetles, etc., in their mouths, and expectorating them, after having sucked for some time, say to the patient, "See, here is the cause of your disorder." At this sight the sick man feels considerably relieved with the thought that his tormenting enemy has at last been expelled (3). Among the Guaycura tribes of Brazil, the "payes" (doctors) cure local diseases, whether wounds or otherwise, by sucking the part in pain and spitting into a hole dug in the ground, as if to bury the complaint.

In the above cases we have, seemingly, the first examples of primitive "quack" doctors, employing crude cupping as a means of cure.

Travelers have described similar practices among the Prairie and Hudson Bay Indians, the Eskimos, Laplanders, and Australians. Sir John Lubbock suggests, and with much reason, that the "lip" treatment still lingers among nurses and children in the universal nursery remedy "Kiss it and make it well."

The Rev. J. G. Wood (3) interestingly describes the peculiar practices of the native doctors or "bilbos" among the Australian barbarians. All diseases are treated by kneading the affected part. If a limb is wounded, bruised, or sore, the "bilbo" ties a cord above it to prevent the spread of the injury. Headaches are treated by bleeding the patient in the axilla, a sharp piece of quartz being employed as a lancet. The blood which spurts forth is received on the body of the operator and rubbed into the skin of both, the patient and the operator. They seem to have crude notions that some diseases are contagious, in which case they leave the patient to

his own resources. In some instances they bury him alive. The relatives of the sick person do not entirely abandon him, but keep a watch and as soon as he gasps his last they advertise the fact by loud lamentations. The women, as occurs all the world over, are the main mourners. They shriek and mutilate their bodies until the blood flows freely. The corpse is not buried, but is left until putrefaction occurs to such a degree that the flesh is easily separated from the bones, which are finally collected, scraped, and painted red. They are then wrapped up in bark and carried about with the clan for a little while. The bones are finally buried in caves or mounds.

Self mutilation in mourning for relatives is carried to a great extreme in the New Hebrides. If a child is sick the parents cut off the last phalanx as an offering to the gods. For this reason, says Wood, there is hardly a person in Tonga who has not lost a considerable portion of the little finger of one or both hands. The operation is crudely performed. The finger is placed upon a flat block of wood or stone and the edges of a knife or axe placed on it. A terrific blow with a mallet is given. The bleeding stump is held over a fire, the intense heat of which acts as a hæmostatic. The Tongans, strange as it may seem, do not dread the operation. In severe cases of illness instead of the amputation of a little finger, a child is strangled as an offering to the gods.

As a matter of fact, savages have no conception of a natural death. Among the aborigines of Australia, when a savage dies, no matter how natural the cause may be, it is at once set down that the deceased was bewitched by the sorcerers of some neighboring tribe. (Lang, *Lectures on the Aborigines of Australia*.)

In many parts of Africa the priestly physicians write a prayer on a piece of board, wash it off, and make the patient drink it. This is supposed to be efficacious in expelling disease spirits. (Caillie, *Travels*.) Mungo Park, in this connection, relates the following incident: "A Bambarean having heard that I was a christ, immediately thought of procuring a saphie and for this purpose brought out his walha or writing board, assuring me that he would dress me a supper of rice if I would write him a saphie to protect him from wicked men. The proposal was of too great consequence to me to be refused. I therefore wrote the board full from top to bottom on both sides; and my landlord to be certain of having the whole force of the charm washed the writing from the board into a calabash with a little water and having said a few prayers over it, drank this powerful draught after which, lest a single word should escape, he licked the board until it was quite dry."

Obstetrics as practised among the savage tribes, especially the Kaffirs, is curious indeed. The "medical" man calls after the child is born. The mother is completely ignored, all the attention and care being lavished upon the newborn. The infant is incised on various parts of the body and medicine is rubbed into the incisions. This pleasant practice is repeated and more medicine is rubbed in. The infant survives this treatment and is initiated into the clan by being painted red.

Another curious custom is that known as *la*

couvade. On the birth of a child, in some savage races, the father is confined to bed, and treated accordingly. Lubbock, on the authority of Dobritz-hoffer, says that among the Abipones, no sooner do you hear that a woman has borne a child than you see the husband lying in bed, huddled up with mats and skins, fasting. He is kept private, and for a number of days abstains from certain viands. You would swear it was he who had the child. Brett also relates the following (in his *Indian Tribes of Guiana*): "On the birth of a child ancient Indian etiquette requires the father to take to his hammock where he remains some days as if he were sick and receives the congratulations and condolences of his friends. No attention is given the mother." This custom still prevails in the north of Spain and Corsica, among the Dyaks of Borneo, and even in the South of France, where it is called *faire la couvade*.

TWINS.

The birth of twins among savages is considered of ill omen. In the island of Bali, near Java, the natives have the idea when a woman gives birth to twins that it is an unlucky omen. The parents and infant are then banished for a month during which time they are supposed to have "purified" themselves. (Moore, *Notices of the Indian Archipelago*). This is also true of the fanatics of Hindustan, where one of the twins is often murdered; of the Ainos of Japan and of the Arebos, Guiana. In the last mentioned locality when twins are born the mother and infants are strangled. (Smith and Bosman, *Voyage to Guiana*). In Nguru, near Unyamwebe, (Africa), twins are killed and thrown into the water the moment they are born, lest droughts and famines or floods should devastate the land. Should an attempt be made to conceal the birth the entire family is murdered. (Speke, *Discovery of the Sources of the Nile*.)

CHARMS, AMULETS, AND TALISMANS.

For countless ages among barbaric, pagan, and Christian peoples, the belief was current, that individuals diseased and "curtailed of their fair proportions," could be healed by "touch," by the "breath," by words and prayer, by the wearing of amulets and talismans, by "charms" of every conceivable and inconceivable kind. These superstitions, under various "aliases" are remarkably in evidence even in the advanced civilization of our day. The healing of the sick by the application of hands, is of vast antiquity. It is to be found in the records and the practices of the early Egyptians and Jews, the Assyrians and Indians. One of the earliest recorded examples is to be found in the *Old Testament*. We are told that Elisha brought to life a "dead" child by stretching himself three times upon the child and calling aloud to God.

Readers of history are acquainted with the supposed healing properties of the kingly "touch."

It was believed for a long time, that living together and breathing upon, a sickly person would produce salutary as well as harmful effects. Young children and virgins were supposed to have the power to "cure" by breathing upon the patient and sprinkling him with their own blood. This method of "cure" is mentioned by Galen, Pliny, and Vergil. History tells us that the great Barbarossa, when dy-

ing, was advised by his Jewish doctor, to have young, robust boys placed across his stomach, in lieu of fomentations. The following curious inscription, cut in marble, was discovered at Rome by the archæologist, Gomar:

"To Æsculapius and Health
this is erected by
L. Claudius Hermippus,
who,

By the breath of young girls, lived
115 years and 5 days, at which
physicians were no little surprised.

Successive generations lead such a life!!! (5)

Too bad, Clody, the world has looked upon thy advice with scornful incredulity!

A Teutonic writer, one Hufeland by name, from his vast reservoir of experience, gravely informs us that "when we consider, how efficacious for lameness are freshly opened animals, or the laying of a living animal upon any painful affection, we must feel convinced that these methods are not to be thrown aside"!! (Ennemoser, *History of Magic*).

Curing by "words" was common in the early ages. They cast out the disease spirits by exorcism, Ulysses, mythology has it, stopped a hæmorrhage by words, "styptic" words evidently. Cato cured sprains by the same means.

Various astrological signs inscribed upon amulets and talismans—of minerals or of metals—were supposed to prevent and to cure diseases, when worn on the body of the sufferer. Herbs, roots, loadstones, bloodstones, pieces of amber, images of saints, were also worn for the same reason. The Buddhists, for instance, had a sort of religious reverence for the sapphire. They called it the stone of stones (*optimus, quem tellus medica gignit*). Of crystals Orpheus says,

"Crystallus—frigide tactu est

Et renibus appositus, dolorem leniet" (Ennemoser).

With logic profound, Orpheus goes on to tell us that the earth produces good and evil to us poor mortals; but, for everything evil she also provides an antidote. Each kind of stone is formed of earth, in which incalculable powers lie hidden. Everything that can be done with roots can also be done with stones. Roots live but for a short time and then perish; their life only lasts as long as we can obtain their fruits, but when they no longer exist what more can we hope from the dead! Among plants we find some that are noxious, some that are beneficial; among the stones, continues Orpheus, it will be difficult to find any that are noxious (true, too true). Armed with the loadstone you may pass unharmed among reptiles. (Orpheus: *Lithica*, editio Gesneri) (Ennemoser). Orpheus seems to have been the original nature fakir. Another profound "practitioner" advises the following: The diamond is beneficial to sleepers and the insane; the amethyst banishes drunkenness; the red bezoar is an antidote to poisons; the bole armeniac potent against "fevers"; the garnet is a health preserver; the sapphire "cheerfulizes" the melancholic; the red coral is a styptic *par excellence* and at the same time, a remarkable remedy for anorexia; the red cornelian stops hæmorrhage and "cures" dysentery; the crystal banishes nightmares; the green chrysoprase is good for weak eyesight; the chrysolite held firmly in the hand is an antipyretic; the jacinth

stimulates heart and frame; the green jasper "prevents fever," dropsy, and strengthens the brain (like grape-nuts); the onyx causes salivation, and worn around the neck renders the patient epilepsy proof; the opal is also good for weak eyes; the green smaragd "prevents epilepsy"; amber "cures" dysentery and at the same time is good for throat affections. And so on, *ad infinitum*. The erudite work in which all this sapient advice is thrown to a com-morant world, is entitled, *Camilla Leonardi speculum lapid: et Petri Arlensis de Scudalupsis symphatia septem metallorum: accedit magia astrologica Petri Constanti Albini*, Hamb., 1717. (Ennemoser).

A few more "sure cures," gentle reader:

Jaundice becomes incurable if a yellow legged hen flies over the patient, but is cured by looking into black cart grease . . . Break a loaf of bread over the heads of children who learn to speak with difficulty . . . Let a mother go three Sundays successively out of the church in silence and blow each time into the mouth of her child and it will get its teeth easy . . . Blue cornflowers gathered on Corpus Christi Sunday stop the bleeding of the nose if they are held in the hand till they are warm . . . A woman can cure her earache by binding a man's stocking around her head . . . He who carries about him a cord with which a "rupture" doctor has bound up a rupture, may lift the heaviest weight without any danger . . . He who has the hiccup let him plunge a naked knife into a can of beer and take a good draught of it at one breath; he will then be cured, (undoubtedly a Teutonic custom) . . . During the pains of childbirth it does good to turn the slippers of the husband around . . . If a child fall off in its health, bind a thread of red silk around its neck; then catch a mouse, draw a thread of the same silk through its skin across its back-bone and let it run away. As the mouse wastes away the child will improve . . . (Ennemoser).

Superstitious beliefs and practices, be they ever so ridiculous, have a distinct scientific value. They portray faithfully and give a comprehensive insight into, the labyrinthian ramifications of the soul of man in every age and clime. To fully comprehend what medicine and surgery are to-day it is of the utmost importance to know, what were the foundations of the science in ages gone by, what the superstitions and the dogmas were, which piloted man's reason in his quest for positive knowledge of the curative art.

Superstitions were the swaddling bands of medicine in its infancy and youth.

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- 1545 MADISON AVENUE.

CASES OF INTESTINAL OBSTRUCTION.*

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Obstruction of the bowel in any form is a serious condition of affairs for it produces interference with the most important of all canals—the alimentary. This long, tortuous and complicated "raceway" contains sections each different in structure and shape, and it is so constructed that it adducts or abducts the different substances that pass along its course. The muscular action, i. e., the propelling power, depends upon the secreting, excreting, and absorbing processes. If these are functioning well the muscular power will not be wanting or disturbed. Let there be lack of muscular power, or excessive muscular power, or mechanical obstruction (which is brought about primarily by some active physical force), then a condition is produced that very frequently calls for quick surgical interference.

It is not my intention to enter into the different causes, phases, and types of obstruction, but only to report the following cases. Volumes have been written upon this subject and sometimes only by opening the abdominal cavity can the causes be accurately discovered. As there are no two things exactly alike in this world there must then be no two cases of obstruction alike:

Omne simile est dissimile.

CASE I.—Mrs. W., age fifty-four; dressmaker; widow; children two, elder, age thirty-five, younger, age twenty-five; weight, 227. Time of first menstruation, seventeen years. Cessation of menstruation, forty-four years. She menstruated only once a year from the age of seventeen till she was thirty-nine, when her flow became normal, occurring every twenty-eight days and lasting from five to six days. Had had no sickness except the ordinary diseases of childhood, till ten years ago, which was the time her menstruation stopped. Since that time she had continually suffered from vomiting, nausea, constipation, pain in abdomen, bloating, and so forth. These attacks would come three or four times a week and would last from one to four hours. For the last three years they had been of daily occurrence and had increased in severity. She would fall and faint from pain, or, as she expressed it, "I would get doubled up with cramps and would get no relief except by injections into the bowels, lying on my stomach and rolling around." These attacks would occur after getting up from eating, or from any exertion, such as lifting or straining. She continually complained of "gas on her stomach," and had been treated during the last ten years by several physicians for dyspepsia.

February 24, 1909, while in one of these paroxysms Dr. J. P. Hill was called, who diagnosed obstruction of the

*Clinic held at Buffalo Hospital, Sisters of Charity, before the Alumni of the University of Buffalo, May 26, 1909.

bowel. I saw her in consultation with Dr. Hill one hour after. There was some rigidity of the abdominal muscles with distention. She was vomiting a greenish yellow fluid, crying from the effects of pain. Pulse 120, weak, and patient in a state of collapse. No gas had passed the bowel. She was immediately sent to the Sisters' Hospital. Upon arrival there an enema of milk and molasses was given. Pain by this time was somewhat relieved. It was decided to wait until the following day before operating upon her as some of her symptoms had subsided. Urine showed an excess of indican, otherwise normal.

February 25, 1909. Abdomen was opened in the median line and through four inches of fat. On account of so much adipose tissue it was impossible to palpate the abdomen satisfactorily. Growing from the fundus and to the left of the uterus was a subserous fibroid tumor, four inches long and three inches thick, with a pedicle two inches long. The uterus, with its myoma, was very movable. It presented a very good stem for a loop of bowel to wind around, and the stem was kinked and narrow in the centre.

Patient left the hospital after twenty-one days, and has had no return of her former trouble.

CASE II.—Obstruction of bowel due to strangulate intra-abdominal hernia.

Mrs. H., age thirty-nine; housewife; number of children, five; no miscarriages; no history of infection; family history good. She had had no sickness, not even the ordinary diseases of childhood, and gave a clear bill of health from her birth to September 12, 1908, when after working hard she complained of a sudden pain in the abdomen at 4:30 p. m. The pain became so severe that she could not stand, and at 7:30 p. m. was compelled to go to bed. There was slight nausea, constipation. She said she had taken a cathartic, but her bowels had not moved. Very little gas had passed the bowel, abdomen distended. She showed symptoms of partial obstruction.

Monday, September 14th. Dr. John Twohey was called. He ordered an enema, with the result that some gas passed from the bowels and patient felt somewhat relieved. Temperature at this time was 99° F.; pulse, 98.

September 15th. Vomiting increased, abdomen very much distended. Pulse, 128; temperature, 99° F.; vomiting of a stercoraceous nature. I saw her the same day at 9 p. m., with the above symptoms. She was immediately sent to the hospital and operation performed at 11 p. m. Abdomen extended to its full capacity, bulging above the sternum and lower border of the ribs, vomiting every few minutes foul fecal matter. When the abdomen was opened the bowels were found distended to their limit. Examination showed a loop of bowel (ileum) ten inches long, strangulated, having passed through the omentum. It was black and semigangrenous. The bowel was freed and the hernial opening repaired. The abdominal contents were examined, but no other foci of trouble were discovered excepting that there were serous adhesions along several feet of intestines and especially near the seat of obstruction. There was considerable exudate binding the bowel together, which was wiped off with gauze without much damage to the serosa. The omentum was bound to the left tube, which was swollen and tense and had the appearance of an old pyosalpinx. The omentum was freed.

On account of the weakened condition of the patient no further interference was made. Abdomen was filled with normal salt solution and patient put in Fowler's position; stimulants administered.

The blood examination showed leucocytes, 1700; polymorphonuclear leucocytes, seventy-eight per cent.; large monophiles, five per cent.; small monophiles, sixteen per cent.; eosinophiles, two per cent.

The primary pathological cause in this case seemed to have been a pelvic abscess or pyosalpinx, that had subsided to some extent, but had left from its inflammatory action a piece of omentum adhered, through which a loop of bowel protruded and became incarcerated.

Patient left the hospital in twenty-six days.

November 14, 1908. I had her return to the hospital and opened through the posterior cul de sac an abscess, and evacuated about eight ounces of pus. Cavity was irrigated and drained.

I examined her this morning; found the uterus movable. No thickening of the vaginal vault; patient looked well, and, as she expressed it, "was feeling fine."

CASE III.—Obstruction of bowel consequent upon extra-uterine pregnancy.

February 2, 1909, Mrs. B., aged thirty-four, number of children, four; no miscarriages; youngest child one year old; had had no serious illness; had always been regular with her menstrual periods till November 1, 1908, when she had menorrhagia, which lasted about three weeks. Menstruated December 20, 1908. Said she had been failing in health since October, 1908. She was admitted to the hospital February 2, 1909, suffering from obstruction of the bowel. There had been no movement of the bowels for six days. Abdomen distended, tender, tympanitic; vomiting; patient very anemic. Enema, syrupus fuscus and water given with no effect. Examination per vaginam showed a soft, boggy mass circumscribed and filling the pelvic cavity. Hemoglobin, thirty per cent; white corpuscles, 10,600. Patient prepared for operation. An opening was made through the posterior cul de sac when a dark, sanguinous fluid escaped. On further examination the bowels and omentum were found adhered together by clots. A suprapubic incision was made and pelvis cleaned of all clots and membrane. The right tube was ruptured about the middle third and from appearances must have contained a fetus of two months' gestation which was not found, but might have been lost among the clots. There were over two quarts of blood in the abdominal cavity. It was necessary to separate and wipe several feet of bowel, so matted were they from adhesions. The uterus was twice its normal size, right tube was removed, but the ovary left in place, as it appeared healthy. Abdominal cavity flushed with normal salt solution. A vaginal drain was inserted; patient placed in Fowler's position and stimulants administered.

Patient improved and left the hospital March 18, 1909. She has gained twelve pounds and says she feels well.

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Therapeutical Notes.

The Treatment of Chronic Varicose Ulcers of the Leg.—Buka, in the *Medical Record* for October 9, observes that the varicose ulcer has for its commonest site the area on the leg above the internal malleolus. Antecedent to the appearance of varicose ulcer are the engorged veins. These may result from obstruction to the onward flow of blood, or disturbances of the proper physiological action of the heart and kidneys. When the veins of the leg become distended the valves lose their power. Nodules of clotted blood may deposit themselves about these nonfunctionating valves, and these protrusions and elevations develop to such a degree as to interfere with the free passage of the current. Pressure from behind may force the blood through a narrow channel and a tortuous route is found by the stream which appears upon the leg as a bundle or string of knots. Since there is always a sluggish flow of the blood in the varicose area, there is a predisposition to effusion of the fluids of the blood into the tissues. This effusion gives rise to the associated oedema so commonly seen in the varicose leg. As the protrusions or elevations of the tortuous vein and the oedema exert pressure, the overlying structures become thin, the skin shiny, tense, and less resistant. A slight bruise or excoriation, which renders the area susceptible to infection, is the beginning of the ulcer, and with the irritation caused by the viscid excretion from the site of the infected area an eczema is excited about the ulcer. This eczema causes intense itching, which the patient attempts to relieve by scratching. Through such irritation further abrasions, about the non-resistant area of the ulcer, are caused and as a result the ulcer grows rapidly larger. In the leg the long saphenous vein, which has no great muscular cover-

ing over it, is the commonest vein giving rise to varicosities. As a varicose vein becomes distended the pressure upon the overlying tissues will cause an atrophy of these structures, and in the event of injury to such tissues there is little or no resistance. Inadequate blood supply or sluggish circulation in a varicose area predisposes to ulcer formation, because there is not sufficient aid in such an area to combat an infection which may develop during an abrasion or excoriation from a trivial bump. As to methods along the lines of minor surgery tried by the author he mentions: 1, Skin grafts; 2, epidermis grafts by means of blistering agents; 3, destruction of exuberant granulations; 4, scarification of ulcer bed; 5, scarification of ulcer margins; and 6, combined methods. The treatment, as used by himself, was the following:

Upon the occasion of the patient's first visit the ulcer was curetted so that all exuberant granulations were removed from the ulcer floor. The ulcer was mopped with sterile cotton, saturated with a one per cent. or a two per cent. solution of cocaine or beta eucaine, to render the treatment as painless as possible. Certain cases in which the margins were deep were treated after the curetting of the bed by lifting the margin and scarification of the ulcer bed. If the margin and bed bled freely the hæmorrhage was allowed to go on for a few minutes. If the ulcer bed showed a tendency to tardy or poor granulations it was livened up by painting with tincture of iodine or by destruction of the granulations with lunar caustic, fifty per cent. silver nitrate solution, or pure carbolic acid to be washed off with alcohol. After the treatment for exuberant or tardy granulations, the ulcer area was treated with warm 1 in 2,000 or 1 in 5,000 bichloride dressings. Rubber tissue was placed over the gauze and the part bandaged with three inch gauze (not too tight). If the patient remained in the wards rubber tissue was not used and the bandage over the ulcerous area was kept wet with the bichloride solution. All patients were instructed about the importance of rest, elevation, and aeration. After forty-eight or seventy-two hours the patients presented themselves for examination either at the clinics or in the wards. Each patient had the same kind of dressing placed upon the ulcer again and internal medication was instituted. Fluid extract of ergot was administered, seven to fifteen minims, three times a day, and this remedy was to be continued indefinitely.

Usually at the third or fourth dressing the ulcer appeared as a bright red, freely bleeding area and upon closer examination small pinhead granulations could be seen. At such a time treatment for the œdema was instituted along the line of any of the saline purges in the morning (a wineglassful of a saturated aqueous solution) and the infusion of digitalis one to two fluid ounces three times daily, until the œdema lessened. Œdema appeared rarely in the lean or wiry type and the fat and boggly patient could only profit from the purges and the infusion of digitalis. In all cases the free daily elimination of the excretions was desired. The musty or foul odor which came from the loosening of the early dressings disappeared in about twenty-

four hours. The previous dressings of bichloride were applied for the purpose of rendering the affected area aseptic, but for the next dressing remedial measures were called into use. For the stimulation of healthy tissue granulations iodoform, thymol iodide, or bismuth subgallate were used; dusted directly over the ulcerous area. Acetanilide and phenacetin were also frequently combined with any of the dusting powders mentioned. Where there was an eczematous involvement about the ulcer the free dusting of any of the powders and salicylic acid, as a powder, seemed to bring on the best results. Wherever it was possible to keep the area involved moistened with bichloride 1 in 5,000, it was done. Whenever a complicating eczema spread itself over an extensive area, zinc oxide was freely applied upon the outer limits of the irritation, and besides this an application of tincture of iodine was applied to what appeared to be about the outer zone of eczema. Such applications were often repeated for several sittings and were, as a rule, kept up until the patient complained no longer of itching at the margins of the ulcer. The liberal use of salicylic acid powder over this area, and often a combination of this powder with any of the ordinary surgical dressing powders, produced a lessening of the itching. At about this time—this being some time between the fourth and sixth week—an opalescent film had developed upon the ulcer surface. It is at this stage that the salves and unguents may be applied—i. e., after the granulations are covered with a protective layer. A good stimulating and healing unguent is a 10 per cent. or 20 per cent. ichthylol ointment. Either strength is good alone where eczema is not a complication of the ulcer, but when it coexists either of the strengths may be used with salicylic acid and zinc oxide. All dressings with unguents should be thickly lathered.

For Anorexia due to Gastrointestinal Atony.—*The Journal de médecine de Paris* for July 24, 1909, recommends the following:

B Sodium persulphate, gr. xv;
Distilled water, 5v
M. et Sig.: One tablespoonful to be taken a half an hour before meals.

A Hypnotic in Alcoholism.—The hypnotic which has given Dr. Alexander Lambert (*Journal of the American Medical Association*, September 25, 1909) the best results in his Bellevue Hospital practice is the following:

B Chloral hydrate, gr. xv;
Morphine sulphate, gr. ¼;
Tincture of hyoscyamus, ʒss;
Tincture of ginger, ℥x;
Tincture of capsicum, ℥v;
Water, ad. ʒss.
M. ft. haustus, illico sumendus.

The dose may be repeated in an hour, with or without one or two drachms of paraldehyde.

If these are not effective within two hours, or even less, and the patient is of the furious, thrashing, motor type, a hypodermic injection of the following will almost invariably quiet him:

B Strychnine sulphate, gr. 1/30;
Hyoscyamine sulphate, gr. 1/100;
Apomorphine hydrochloride, gr. 1/10.
M.

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AMERICAN MORTALITY STATISTICS.

As is well known, the Bureau of the Census has to deal with returns of vital statistics transmitted to it by various State and other local officials. Heretofore the material of this sort with which the bureau has had to deal has shown such a lack of uniformity in the designation of causes of death as to interfere seriously with the accuracy and intelligibility of the census synopses. As a matter of course, the results have not been creditable to American statistics. The bureau has recently issued a statement which, it is hoped, will go far toward remedying these defects in mortality returns after January 1, 1910. It is to be hoped that the medical profession will cooperate cordially with the census officials in their endeavor to improve the statistics. On October 11th Director E. Dana Durand, of the Bureau of the Census, promulgated new rules and instructions designed to secure greater completeness and accuracy in the transcripts of death returns in the selected death registration States and cities of the United States. These transcripts are obtained every month by the Census Bureau from nearly all the city and State registrars in the census death registration area, and they form the basis of the mortality statistics prepared by the Division of Vital Statistics, under Chief Statistician Cressy L. Wilbur, M. D. This action is expected to result in the presentation of the most scientific and trustworthy mortality statistics ever compiled in connection with a decennial United States Census, which affords the

population bases for the 1,910 death rates. In addition to this important step toward more reliable data, the new revised version of the *Classification of the Causes of Death*, as adopted at the Paris conference for the second decennial revision of the *International Classification*, will go into effect on January 1st in the census registration area. Supplementing these will be the use of the new United States standard death certificates, which it is believed the organized registration officials forming the Vital Statistics Section of the American Public Health Association will adopt at the meeting to be held in Richmond next week.

In his communication to the State registrars, Director Durand states that in their work of co-operation it is of the greatest importance that there should be exact agreement between the number of deaths as compiled by the State officers and by the Census Bureau, at least with respect to the total number of deaths reported for each month in each State, county, and city. Differences occur at present, he reminds us, which are not creditable to American statistics. For the purpose of preventing such differences, a monthly shipment check list, showing the deaths by months and areas, has been prepared and will be supplied to each State registrar. The director asks transcribers to follow absolutely the instructions for copying and advises tests to ascertain correctness. Permanent transcribers are preferred because of the skill acquired. Local registrars should be compelled to make returns on time. No effective registration can exist when the central office permits tardiness. The credit of the State service must suffer, the director states, from heedless and incompetent work, and the compensation paid for the returns is sufficient to entitle the government to thoroughly reliable transcripts, promptly transmitted and containing all the statistical data required to be registered under the State law.

To the city registrars the director suggests that they note the instructions to State registrars. He states that a city registrar should have in his hands the certificate of every death that occurs, with absolutely no exception, before any disposition is made of the body; hence there should be no occasion for certificates filed many days after the close of each month or year. The corrections should be obtained before the burial or removal permit is issued. No imperfect certificates or unsatisfactory statements of cause of death should be accepted. When overlooked, however, they may be corrected readily by special blank or telephone, and city returns should therefore be superior in quality and completeness.

In conclusion, the director states that, with the cordial cooperation of State and city registration officials, the value of the mortality statistics of the

United States will be greatly improved. It is especially requested that every effort be made to carry out faithfully the recommendations for the remaining months of the present year, so that the entire returns for the year 1910, which are especially important because of the comparisons possible with the population data of the *Thirteenth Census*, may be in complete agreement for all the States and cities of the United States. Special circulars of instructions will be issued relative to the reporting of occupations and causes of death. It is hoped that the new standard certificate and the approved instructions may be adopted by all the registration States and cities, so that thoroughly comparable returns may be instituted for the decade beginning January 1, 1910.

Dr. Wilbur, who was one of the American delegates at the second decennial revision, states that the opportunity of starting with the use of the revised classification for the mortality statistics relating to the actual census year is of the greatest value. It is highly gratifying, he says, that the wishes of the United States for the advancement of the date of the international revision from 1910 to 1909 were acceded to by the French government and the other countries participating. In accordance with a resolution of the International Commission, an official version of the revised titles is to be prepared in each language represented. The English translation has been made by Dr. Wilbur, aided by the other American delegates and by the Hon. G. W. Knibbs, Commonwealth Statistician of Australia. This will provide precisely the same tabular list for all English speaking countries that have adopted the International Classification.

The active interest of the United States in the promotion of international uniformity was accorded a very graceful recognition in the bestowing of the vice-presidency of the International Commission upon Dr. Wilbur, who was called upon to preside over one of the sessions. The next revision will be called in 1919 and under the auspices of the French government, unless other provision is made. Dr. Wilbur says it is to be hoped, however, in view of the great advancement of American vital statistics and the important part this country has played in the extension of the *International Classification*, that the third decennial revision will be called by the American government to meet at Washington.

OPIUM IN THE TREATMENT OF INFANTS.

This is the age of the demolition of traditions. Almost from time immemorial, opium has been regarded as a highly dangerous drug when administered to children—so dangerous, in fact, that its use in pædiatric practice has been rare. At the recent

Budapest International Congress, however, Dr. Lust, of Brussels (*Presse médicale*, September 8th), stoutly combated the tendency to banish opiates from the therapeutics of infancy, reminding his hearers that there were on record observations by numerous pædiatrists going to show that, in proportion to their weight, infants were even more tolerant of opium than adults.

But he insisted that the dose should be governed by the child's weight, not by its age, and that preparations of variable strength should be avoided. Opium, as we all know, is an exceedingly complex substance, containing numerous proximate principles having the most diverse action upon the system. These principles include the hypnotic, the anodyne, the emetic, the hæmostatic, and others that are less known. Dr. Lust argued that morphine, on account of its invariability, was preferable to any other opiate. It is of course less variable than the tinctures, wines, syrups, confections, extracts, powders, etc., that are more or less used as hypnotics and anodynes, but it may be doubted if codeine, for example, is not sufficiently unvarying to satisfy the reasonable requirements of standardization. For administration by the mouth, according to Dr. Lust, one may as a general rule, begin with the daily amount of half a milligramme of morphine for each kilogramme of a child's weight.

A GAP IN THE PRACTITIONER'S LIBRARY.

We have occasionally thought that a very interesting manual of the practice of medicine and surgery might be prepared for the use of country practitioners by one of their number. The difficulties which confront the doctor in sparsely settled districts are essentially different from those familiar to the visitor of terraces and tenements. They do not receive attention in the college lectures, not because the professor thinks they are in any way beneath his dignity, but simply because he is usually drawn from the urban ranks, has spent his time near the college and hospital since his graduation, and is quite unfamiliar with country life and practice. The city doctor is near libraries, for one thing, and is able to obtain any needed instrument at short notice; his preliminary equipment need be almost *nil*, because manufacturers and publishers are near to him. A country doctor requires a fairly large library and an armamentarium of respectable dimensions ere he nails his sign to the front gate or a convenient tree. If he is not what is known as a "handy" man, he would welcome preliminary information concerning the fashioning of splints, etc., from barrel staves or cigar boxes; probably a knowledge of our meagre supply of me-

dicinal country plants might be useful; and such details as the economical and convenient equipment of his buggy or saddle bags, tersely written up by a country doctor of long experience, could not fail to save him many an hour of anxiety or discomfiture. His satchel even must differ greatly in its contents from the light impedimenta of the city man. We promise a welcome to a well written manual of therapeutics and therapeutic helps for the country practitioner.

A BAD EXAMPLE.

Sixty physicians of Schuylkill County, Pa., were recently arrested and fined from five to fifty dollars each for failure to comply with the local law regarding the registration of births. A scrupulous adherence to law should be characteristic of the doctor; he is a citizen of prominence, often the particular exemplar of young men, and his eternal preaching is subjection to law. Apparently slight infractions like the foregoing multiplied by many thousand have made our vital statistics a laughing stock, not to be seriously regarded in methodical Europe. The economic waste of badly executed laws is enormous, and physicians, in ignoring legislation of this kind, which is of genuine value to the community, cannot have increased the respect with which they are regarded.

GLYCOSURIA AND THE ISLANDS OF LANGERHANS.

Dr. W. G. MacCallum (*Bulletin of the Johns Hopkins Hospital*, September) publishes the details of an experiment to show the relation between the islands of Langerhans and glycosuria. After ligation of the duct of an isolated portion of the pancreas the secreting acini undergo atrophy and the islands of Langerhans hypertrophy, so that the remaining tissue is composed of the hypertrophied islands and the remains of the ducts of the gland.

After these changes were completed the remainder of the pancreas was removed, and after an excretion of glucose in fluctuating, rather small amount, for a few days no glucin appeared in the urine, although dextrose was administered in increasing doses until forty grammes had been given at one feeding. Then 1.496 gramme of glucin appeared in the urine during the eight hours following the dextrose administration, showing that the dextrose toleration by the animal was 38.504 grammes. Upon discontinuing the administration of dextrose, the glycosuria disappeared. The portion of the pancreas containing the islands of Langerhans was then removed and glycosuria appeared spontaneous-

ly within five hours and persisted for three days, although in diminishing intensity. Upon removal of both lobes of the thyroid body in this animal the glycosuria disappeared. There are certain contradictory results found in perusing the details of the work, which Dr. MacCallum will undoubtedly attempt to clear up by future experiments, and there is a difference in the placing of a decimal point in the text and in the table which is confusing.

THE SESAMOID BONE OF THE GAS-TROCNEMIUS.

Pancoast (*University of Pennsylvania Medical Bulletin*, September) presents a statistical paper upon the frequency of occurrence of a sesamoid bone in the tendon of the outer head of the gastrocnemius muscle which may be mistaken for a foreign body in the knee joint. The shadow of this bone is, according to the writer, a familiar object to the radiologist of experience, but is likely to be misinterpreted by operators of less opportunity for observation.

Out of 202 individuals over fourteen years of age, and one other, twelve years of age, a sesamoid bone was found in the situation mentioned in one or both knees in twenty-five instances, or 12.32 per cent. Information received from five other radiographers, based upon the examination of 326 individuals, showed that they had recorded the shadow in forty-two instances, or 12.88 per cent. In all, the records of 529 cases are presented, among which are sixty-seven instances of this shadow, or 12.67 per cent.

It appears that the bone may be present on one side and not on the other, as in six out of twenty-five of Pancoast's observations. The shadow was seen once in a boy aged twelve years. The bones are almost always oval in shape in the adult, but are likely to be round in young individuals. They average about three eighths of an inch in the longer diameter in the adult.

COUNTER PRESCRIBING.

An interesting instance of the dangers of counter prescribing has recently come to our knowledge. A patient who had been suffering from great itching, accompanying a slight eruption on the palms of the hands, had used for several months an ointment procured from his apothecary, but without relief of either symptom. Finally a visit to his family physician disclosed the existence of *diabetes mellitus*, which in all probability had antedated the local manifestations by many months.

THE CENTENARY OF OLIVER WENDELL HOLMES.

Celebration by the Medical Society of the County of New York.

Nearly all those who participated actively on this occasion (Saturday evening, October 9, 1909) had been friends or associates of the notable man whom they had met to honor. This fact made the genial personality and noble work of Oliver Wendell Holmes very real and introduced no element of sadness, but rather one of great rejoicing in his long life so well spent. Too often on like occasions the man we endeavor to honor is placed on a pedestal and worshipped as a being far removed from his fellows; but on this occasion one felt most intensely the humanity and loveliness of this great man. It was his unusual personality quite as much as his scholarly attainments that made it possible for him to leave his impress so forcibly on medical science. The recognition of greatness in another calls out the best that is in us, and makes us in a measure partaker of that greatness. The members of the profession of which he was so great an ornament owe much to the men through whose efforts the influence of the man whom they honored was for the time being almost as though he were still among them encouraging and inspiring. The medical man is too apt to live and work in a groove, and the versatility and manysidedness of a character such as that of Dr. Holmes set forth a most useful lesson which the reminiscences of the evening make clear.

ADDRESS OF WELCOME BY THE PRESIDENT OF THE SOCIETY.

DR. H. SEYMOUR HOUGHTON.—While this date of October ninth does not coincide with that of the day which Dr. Holmes in *One Hundred Days in Europe* quaintly explains as the one that "introduced me to atmospheric existence," that is, the twenty-ninth of August, 1809; nevertheless, we have assumed the prerogative, supposed to belong only to kings, and have bestowed it upon a man whose name and whose works will endure beyond that of many a ruler of empires. In the gambrel roofed house at Cambridge Oliver Wendell Holmes was born. That home, already an historic one in Revolutionary annals, and made immortal on this day, was later made a sacrifice. That sacrifice Holmes mourned "as a part of my life gone out of me." "The slaughter of the old gambrel house was a case of justifiable homicide, but I have a right to mourn for it. The house in which one drew his first breath, and where he one day came into the consciousness that he was a personality, an ego, a little universe with a sky over him all his own—that house does not ask for any historical associations to make it the centre of the earth for him." The very site of the gambrel roofed house is dear to many pilgrims; and we therefore curse with more than the curses of Ernulphus the learned and respectable vandals who let it be destroyed. I now have the pleasure of asking Dr. A. Jacobi to assume the duties of chairman.

DR. A. JACOBI.—This celebration is not connected with any sense of mourning over the death of Holmes, for he died full of years and of achievements, but with the joyful reminiscence of his birth, which began a career of manifold study, intellectual growth, useful practice and teaching of medicine, in part new and epoch making, and instructive and entertaining writing of a nature beyond what is mostly meant by these adjectives. For his mental stature reached in height far above the clouds that

limit the horizon of common mortals. He was a rare combination of science and poetry. The multitude of his gifts of heart and mind was startling and pleasing and warming. He was destined to be a follower of Apollo, the only Greek god who combined medicine and art and music and poetry. There are two classes of people who have authority to speak of Oliver Wendell Holmes. The first, though smaller, consists of his intimate acquaintances or friends, those who lived with him or near him, conversed with him and listened to him in close proximity. The second is much larger and comprehends all English speaking nations. We are going to hear from one belonging to the first class, Dr. Maurice H. Richardson.

PERSONAL REMINISCENCES OF OLIVER WENDELL HOLMES.

DR. MAURICE H. RICHARDSON, of Boston.—My contribution for the evening is limited to personal reminiscences of Dr. Holmes in the last years of his teachings, when he was at the height of his fame and I was his youngest assistant. In 1874 I first attended the lectures of the Harvard Medical School and saw Oliver Wendell Holmes. When I began to listen to Dr. Holmes's lectures I was delighted and encouraged, for he made even the dry bones intensely interesting. From 1876 until Dr. Holmes gave up his anatomical teaching, I saw him four or five times a week and occasionally at other times, and the thing that impressed me as a student was his efforts to make us at home. My very first recollection of him was his asking us always to bow to him on the street. There were so many of us and so few of him that he could not expect to know us all by sight, but he ventured to say that we all knew him. Dr. Holmes's lecture came at one o'clock, a very difficult hour because the students were tired and hungry, and it took a great man to make the hour interesting with such a subject as mostly meant by those adjectives. For his mental His lecture was full of wit, bright and sparkling.

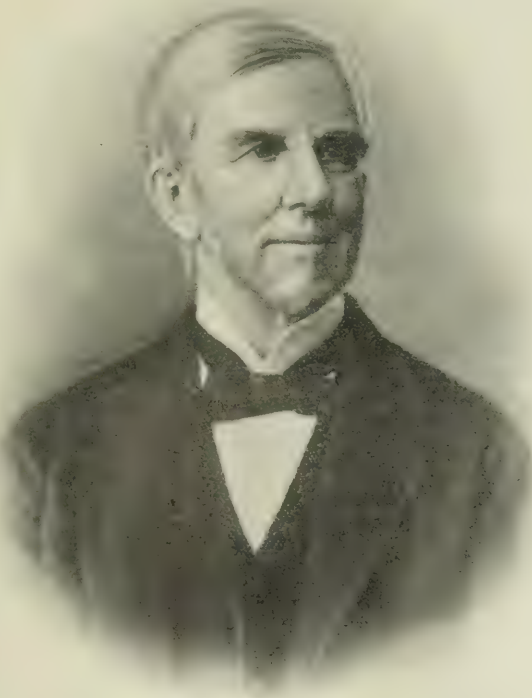
Many of his sayings have been handed down from student to student to this day. Dr. Holmes always ascended, slowly and painfully, the steep, long staircase; at the head of the stairs he would be out of breath and loudly wheezing. With perhaps somewhat inconsiderate bravado, Dr. Bigelow would go up the same stairs two steps at a time, and arrive at the top perfectly fresh. But when Dr. Holmes got his breath, not even the keenness of Bigelow's intellect was proof against the wit of Holmes. There were two doors of entrance to the lecture room. Long before one o'clock the corridors and stairs would be full of students jamming up against the doors. When all was ready, at a signal from the lecturer, the janitor would draw both bolts at the same time, and the pressure of students would fling wide open both doors. Down they would come on both sides with a thundering noise, every man for a good seat. Why the men did not get killed in their mad rush for the front seats, I could never imagine.

I recall Holmes's description of the greatest possible rewards of the physician and surgeon. "He was always one of the most respected of men; his highest political reward is to be on the school committee; he lives well but dies poor." He said of his highest possible ambition was to have some loathsome disease named after him—Bright's disease, Ménière's disease, etc. The surgeon's highest reward would be to have some bloody operation named after him. In reading Dr. Holmes's essays and addresses it seems that his vision was prophetic. In 1861 he wrote: "The physician has learned a great deal from the surgeon, who is naturally in advance of him, because of a better opportunity of seeing the effects of his remedies." In the present tendency to belittle bedside as compared with laboratory teaching in *Scholastic and Bedside Teaching* Holmes says: "I am in little danger of underrating anatomy or physiology; but as each of these

branches splits up into specialties, any one of which may take up a lifetime, I would have them taught with a certain judgment and reserve, so that they shall not crowd out the more immediately practical branches." And again: "I myself have nothing to do with clinical teaching, yet I do not hesitate to say it is more essential than all the rest put together, so far as the ordinary practice of medicine is concerned."

It is hard for the layman to understand the great interest that Dr. Holmes took in anatomy, but, when one got used to dissecting, the human body never seemed anything more than a wonderful piece of

machinery, and undoubtedly this is the view that Dr. Holmes took of it. He always insisted that great care be taken to cover with clean linen all parts of the body except that upon which he was directly lecturing. He had to teach a branch repulsive to some, difficult for all, and he had to teach it for a jaded class, which was unfit to be taught anything. The wooden seats were hard, the backs were straight, and the air was bad. Dr. Holmes in alluding to this last says: "So when the class was sitting in an atmosphere once breathed already, after I had seen head after head gently declining and one pair of eyes after another emptying



OLIVER WENDELL HOLMES.

themselves of intelligence, I have said inaudibly with the considerate self restraint of Musidora's rural lover, 'Sleep on, dear youth, this does not mean that you are indolent or that I am dull. It is the partial coma of commencing asphyxia.' To make head against these odds he did his utmost to adopt a sprightly manner and let no opportunity for a jest escape him. He gave his imagination full play in comparisons often charming and quaint. None but Holmes could have compared the microscopic coiled tube of a sweat gland to a fairy's intestine. Medical readers will appreciate the aptness of comparing the mesentery to the shirt ruffles of a preceding generation, which from a short line of attachment expand-

ed into yards of complicated folds. In seeking some illustration of his way of teaching anatomy he mentions the book of Spigelius "in which lovely ladies display their viscera with a coquettish grace implying that it is rather a pleasure than otherwise to show the lacelike omentum, and hold up their appendices epiploicæ, as if they were saying, 'These are our jewels.'"

Great pains were taken in getting the subject ready for the anatomical room to make the dissection as beautiful in itself as it could be made and to make the setting appropriate. The muscles were prepared with a care that would be regarded at the present time as extraordinary. The dissections were really works of art. I think that a great deal of the care that was taken was on account of the great appreciation that Dr. Holmes showed for our work. We were sure that if we did well we should receive much more praise than we deserved, and we knew that the lecturer would call the attention of the class to the beauties of the dissection.

The entrance of Dr. Holmes into the amphitheatre was always the signal for tremendous applause. Dr. Holmes would introduce his lecture with some bright remark, some anecdote or witticism which served to enliven the wearied students. It was apparently his plan to put his audience on the alert—to arouse them to keen receptiveness—and then to plunge at once into his subject. It seems to me, at this distance, that this method of exciting interest at the beginning, and of keeping up that interest, surpassed that of any speaker, medical or lay, that I have ever heard. One simply could not help listening, absorbing and storing away the driest of facts. Dr. Holmes's enthusiasm and influence put the study of anatomy on a plane higher than that which it occupied before or after his day. In his time the student body was a committee of the whole, eagerly discussing every new point, each man vying with the other for a better knowledge of the key-stone of our profession.

By the association of ideas, especially by the aid of humor, he suggested, through easily remembered anecdotes, jokes, puns, or mnemonics, the really dry facts of anatomy. One method he used was to bring out the applications of anatomy, and to-day the applications of anatomy offer a more attractive field than they did then. He believed in iteration and reiteration. He said: "My advice to every teacher less experienced than myself would be, therefore, 'Do not fret over details you have to omit; you probably teach altogether too many as it is. The only way of teaching a whole class is by enormous repetition, representation, and illustration in all possible forms.'"

A curious thing to me was his unwillingness to allow any one to lecture for him. He said: "If I allow any one to take my place he may give a better lecture than I could." Every Christmas we were all remembered by him; my gift was always one of his own books, in which he had written his autograph. The last time I saw Dr. Holmes at the Medical School was when he gave his farewell lecture, and I am sure there were few dry eyes on that memorable occasion. In looking over what he said, I feel that many of his views were prophetic. His writings in prose and verse are a lasting delight.

Dr. A. JACOBI.—Reminiscences like these add to our love and veneration. I believe that nobody who came near Holmes left him without feeling kinder, warmer, and improved. My own relations with him were of the most pleasant nature. I owe him his picture with his own dedication, and several books with his own friendly signature. With one of his books he sent a letter which contains the following: "When you receive this, just send me a penny postal card, telling me you have received it. It is worth just that much." I sent a two penny postal card; it was worth much more. We doctors have a great opinion of ourselves; indeed, we are convinced that we deserve it. I am sure I do, just like many of you. That is why we like to think of Holmes as one of us. The gentleman whom I beg to introduce to you was, I believe, a medical student of Holmes's. Since that time, however, while being a student evermore, he has evolved into a teacher himself, a meritorious and famous writer and a great sanitarian, Dr. Edward O. Otis, of Boston.

THE MEDICAL ACHIEVEMENTS OF DR. HOLMES.

Dr. EDWARD O. OTIS, of Boston.—It is a peculiar pleasure to me to join with you in this celebration, for it was my good fortune to be a pupil of Dr. Holmes's when he taught anatomy in the old Harvard Medical School. We were a motley, boisterous crowd when we rushed for the front seats of that old unventilated amphitheatre, when the doors were opened for his noon lecture, and awaited with impatience the appearance of the little professor, who seemed to skip into the room with the lightness of a child and an indescribable glow upon his face. One of the few instances I recall was an occasion when Dr. Holmes entered the lecture room all aglow, and said: "Gentlemen, I went last night to see Salvini, the great Italian actor. If you want to see a wonderful display of the facial muscles in action, go and see him." Upon another occasion he was exhibiting some of the anatomical plates of an old anatomist which he so dearly cherished. It might have been those of Spigelius, "in which," he says, "lovely ladies display their viscera with a coquettish grace implying that it is rather a pleasure than otherwise to show the lacelike omentum, and hold up their appendices epiploicæ as if they were saying, 'These are our jewels'"; or the skeletons of Vesalius or the muscles of Albinus. Whatever they were, a tall, stately figure was represented with more or less of his fleshy substance removed and with a background of very ornate scenery with some huge wild animal in the distance, an elephant or a giraffe, it may have been. "There, gentlemen," he said, "is represented such and such a portion of man's anatomy and with all this scenery thrown in."

Dr. Holmes is so universally known as a literary man and for his contributions to general literature that what he did as a professional man and what he contributed to medical literature very naturally take a minor place in the estimation of the public, and the profession as well, and even may fail of receiving just recognition. Furthermore, it is difficult to dissociate completely in estimating his influence upon the thought and opinion of the medical and general public of the time in which he wrote the influence of his purely medical essays from that of the medical references and reflections which are

so often discoverable in his general literary works. "His medical training," says Sir Conan Doyle, "helped out in every paragraph," "and his exquisite smiles were drawn from our common profession." In the *Breakfast Table* series, one is constantly meeting with anatomical, physiological, psychological, or pathological allusions. One feels that it is the doctor who is writing and not the merely literary man. *Elsie Venner* is a study of prenatal influences; *The Guardian Angel* is a study in atavism; *A Mortal Antipathy* illustrates the effect of a strong impression received by a nervous shock in childhood, extending its baneful influence into adult life. In all three of these stories a psychopathological problem is worked out, and they could only have been written by a trained psychologist or physician, and Dr. Holmes was both.

In estimating Dr. Holmes's influence upon medicine as practised and studied in his day, and his lasting influence upon the medicine of to-day, it seems to me we must take into account this indirect influence in his general works as well as his direct medical studies and contributions. I believe that Dr. Holmes felt, at least for the greater part of his life, that while literature was his avocation, medicine and the teaching of his branch of medicine was his vocation. No medical writer of his day recognized more clearly than did he, or so persistently opposed, the evils of the inordinate use of drugs, or so insistently advocated the study of the causes of diseases and the supreme importance of depending upon Nature and Nature's remedies for their cure. This is the dominant chord in his essay on *Currents and Counter-Currents*. "Throw out opium," Dr. Holmes says, "which the Creator Himself seems to prescribe, for we often see the scarlet poppy growing in the cornfields, as if it were foreseen that wherever there is hunger to be fed there must also be pain to be soothed; throw out a few specifics which our art did not discover, and is hardly needed to apply; throw out wine, which is food (present investigations would seem to indicate that not even alcohol need be thrown out) and the vapors which produce the miracle of anaesthesia, and I firmly believe that if the whole materia medica, as now used, could be sunk at the bottom of the sea, it would be all the better for mankind—and all the worse for the fishes."

How clearly he recognized then, fifty years ago, what the profession more clearly recognizes now. Dr. Holmes might well have been an original investigator, if he had been less of a literary man, but he was in some respects an incomparable medical interpreter and critic. He was a profound student of the past and a clear visioned prophet of the future. He had sat at the feet of the Gamaliels of medicine at the Mecca of medical knowledge of his day. He had an original, creative mind. He possessed the power of systematizing and generalizing medical knowledge in an orderly form. "Is it not well to remind the student from time to time," he says in *Scholastic and Bedside Teaching*, "that a physician's business is to avert disease, to heal the sick, to prolong life, and to diminish suffering?" "I know," he continues, "that many branches of science are of the greatest value as feeders of our medical reservoirs. But the practising physician's office is to draw the healing waters." Of the various

purely medical essays of Dr. Holmes, I suppose the one upon *The Contagiousness of Puerperal Fever* would be generally regarded as constituting his greatest claim to recognition as an achiever in medicine. It was a notable contribution then and would be so now under similar conditions. Of his other essays, I should, perhaps, place *Currents and Counter-Currents* next in value and importance, and, possibly, next to that, his Boylston prize essay on *Direct Exploration*. The essay upon homœopathy is full of keen satire and uncompromising denunciation. The addresses to medical students are full of original and wise reflections, rich in illustration and analogy, and sparkling in epigrammatic expressions. In his literary writings the doctor was always a man of character and ability, a man to be respected. Such were Bernard and Dr. Kittredge in *Elsie Venner*. The latter, as he says, "was a shrewd old man, who looked pretty keenly into his patients through his spectacles, and pretty wide at men, women, and things over them." And in *A Mortal Antipathy* Dr. Butts is described as "an excellent specimen of the country doctor, self reliant, self sacrificing, working a great deal harder for his living than most of those who call themselves the laboring classes. He had that sagacity without which learning is a mere incumbrance, and he had also a fair share of learning, without which sagacity is like a traveler with a good horse who cannot read the directions on the guide boards."

Dr. Holmes loved the old medical masters. In his farewell address at the completion of his thirty-sixth course of lectures, in 1882, Dr. Holmes tells us of his early teachers in Paris, and lives over again his experiences in the French clinics and hospitals. He speaks of Broussais, whom he compared to an "old volcano which has pretty nearly used up its fire and brimstone, but is still boiling and bubbling in its interior, and now and then sends up a spirt of lava and a volley of pebbles"; of Lisfranc, "a great drawer of blood and hewer of members"; of Velpeau, "who came to Paris on wooden shoes," he says, and "whose example may be an encouragement to some of his younger hearers, who are born not with a silver spoon in their mouths, but with the two tined iron fork in their hands." "Noble old Vesalius with his grand frontispiece not unworthy of Titian"; "fine old Ambroise Paré, that quaint and delicious writer, the surgeon of princes, and the prince of surgeons"; Spigelius "with his eviscerated beauties," "who made the liver his perpetual memorial." He was particularly fond of the old authors. Dr. Holmes ever held and taught the profound faith in God and the immortality of the soul. If all else regarding him be forgotten, congregations of devout worshippers will still be praising God in that noble and inspiring hymn of his:—

Lord of all being; throned afar,
Thy glory flames from sun to star;
Centre and soul of every sphere,
Yet to each loving heart how near!

DR. A. JACOB. —The speaker has detailed for us the history and merits of Dr. Oliver Wendell Holmes. It is given to very few to accomplish anything as meritorious as fell to the lot of Dr. Holmes. His services to womanhood and civilization are equalled by few. It was true he was not the first to

suppose the existence of a puerperal fever contagion, but the first to state and to prove aggressively his knowledge. His immediate reward was to be ridiculed by those who claimed more and knew less. His successor fared worse; the prejudice and enmity of German and Austrian university professors drove Semmelweis insane. He died a lunatic. But lately they raised a monument over his bones. For him Holmes might have coined his verses, "Why can't a fellow hear the fine things said about a fellow when a fellow's dead?" Holmes himself to most people is more the beloved friend, author, and poet than the doctor. It would be a mistake, however, to believe that we true physicians appreciate his medical dignity only. If there is a profession to which nothing human is foreign, it is that of medicine. *Nil humanum alienum*. That is why a physician will detail for you what may be said of Holmes as an author, writer, and poet. The gentleman whom I am going to introduce to you represents the very best of the multiple qualities of the great physician and citizen. He has been a physician of wide repute, a teacher of thousands, an influential writer on scientific topics, and the author of philosophical, physiological, and even religious books which combine close reasoning and masterful English diction. Last, not at all least, he has performed the active municipal and general political duties of a citizen, Dr. William Hanna Thomson.

DR. HOLMES AS AUTHOR, POET, MAN.

DR. WILLIAM HANNA THOMSON.—This is a remarkable year for centenaries, and centenaries themselves are remarkable, because they mean that some men are celebrated one, two, and three hundred years after they were born. But it is a question to ask why those men should be celebrated, when untold millions of their fellows are forgotten. They differed between themselves as much as men always differ. But they had one thing in common, and it is a credit to human nature that, it clearly appreciates what this thing in common is, namely, that each one of them was in his own way a great benefactor. Man is as grass, as a flower of the field so he flourisheth, but not so these men, for their memories fade not with the lapse of years, but remain as green as ever, because their good works do follow them.

There has never been in history such a magnificent tribute to two men long dead as this prolonged celebration in New York which we have just been witnessing. One of these men was an intrepid and suffering explorer, whose name is fitly immortalized by New York's splendid river, while farther north a great body of water is called after him in memory of the cruel death inflicted upon him for discovering it. The other man, one hundred years ago, caused the Hudson to witness the first steamboat. How could any one who saw the wonderful naval pageant on the Hudson a few days ago fully appreciate that it was but one hundred years ago that Fulton began it all with his little *Clermont*? But it was also one hundred years ago that Abraham Lincoln was born, *clarum et venerabile nomen*, because he was the saviour from death of a mighty nation which will cherish his memory forever, remembering that he was not only a great but also

a most lovable man. Again, this year the centenary of Charles Darwin was celebrated, the man who has widened the whole horizon of human life by a new conception of what the story of physical life on this earth means. Again, we know that this year is the centenary of a man who was only a poet. Tennyson only a poet! Some think that Darwin, leading us step by step, pauses at the ape to point over his shoulder to the next primate, *Homo sapiens*. But given an eternity to do it in, no ape could develop into a poet any more than he could develop into a saint. What is a poet like Tennyson? Human speech itself is a divine endowment, for no being on earth can speak but man; but when he speaks like Tennyson, we are simply carried into another world, where we hear mighty and glorious spirits communing with us. This year also is the centenary of Samuel Johnson, and no more eloquent tribute ever was paid to a man than recently by Lord Rosebery as he voiced his sentiments about Johnson, not only as a man with a great intellect, but also with a great heart.

But somehow we miss in all this any reference to a figure who bulks very largely in our modern world. Why cannot we even imagine the celebration of the centenary of a great capitalist? No one is ever talked about at present, but death simply snuffs his kind out. However, we in this country have recently discovered how even he may enter the list of remembered benefactors by his endowing a college to be called after him, though it must be added that some persons gravely shake their heads at a college accepting tainted money. So men are remembered because they were world benefactors, and as the world grows better and wiser that title to fame will more and more take precedence. If so, the future will particularly sound abroad the names of great members of the medical profession. The beneficent aims of our profession take in all mankind. The illustrious Pasteur did not work only for his native France, nor Lister only for Britain, nor Koch for Germany. Wherever men live they will have reason to bless their memory, from the great battlefields of the Russo-Japanese war to the many huts of the poor which are darkened by the invasion of ghastly tuberculosis. How fitting, therefore, that we should celebrate to-night the birth, one hundred years ago, of Oliver Wendell Holmes, the great physician, the great author, the great poet, and the most genial of men!

But it is allotted to me to speak of Holmes as author, poet, and man. As an author he can be judged by his inimitable *Autocrat*, and I would specially refer to his lucid, vigorous, and terse style. Many writers seem never to learn that first lesson of what a good style should be, which is, first, find out what you have to say, and then say it in the simplest and fewest words you can find. But to do this well is a great art. Only a few like Lincoln have it by nature, or like the little school girl who, when the subject, Man, was given her for a composition wrote: "Man is a creature with two legs who has to work for a living." Instead, many people think that to write strongly one must pile up the adjectives and the superlatives. But where is this lesson in style best learned? The answer is, in the old Greek and Roman classics, especially the Greek. It vexes one

to hear so many weaklings in our day decrying the time spent heretofore in our colleges on the musty old classics as so much time wasted. How much do the classics qualify a man for modern business? The answer is that their study qualifies a man for everything, including business, for it affords a wonderful mental gymnastics which trains thought as nothing else does. Why is it that in our own profession a man, however able naturally, yet if he be without a preliminary college training, rarely rises afterward above a certain mediocre level? We may be sure that if Oliver Wendell Holmes had not taken the training of that grand old intellectual gymnasium Harvard, he would never have been the Autocrat. But I am to speak of Holmes as a poet. Now, a true poet, which Holmes was, is difficult to describe, because there is so much in him. In the first place, a poet always tells, and finely tells, just where he was born. Thus in one of Holmes's stanzas he says:

And some might say "Those ruder songs
Had freshness which the new have lost;
To spring the opening leaf belongs.
The chestnut burr awaits the frost.

Now, the author of these lines was a native of New England, and certainly not of Old England, nor of Indiana, for there are no chestnut trees and therefore no chestnut burrs either in Old England or in the Hoosier State. For the latter he would have had to fall back on hickory nuts. Now, it is a far cry from Holmes to old Job, but both were great poets, and the picture which some so called Higher Critics give to Job is as lifelike as a winged camel or a feathered pig would be in zoology. Job never saw Palestine and never heard of a Hebrew. Whereas the Philistine poets repeatedly speak of resting under the grateful shade of the fig tree, Job speaks of a great rock in a weary land, but not of a fig tree, because there are no fig trees in Arabia. Likewise, Holmes talks of the meadows and sees the flowers of his native New England. What can equal the sweet freshness of nature in the open air which one finds in his verses, in contrast to the ceaseless chaos of New York streets under foot and the awful sky scrapers overhead? But Holmes was also a wit, which not all poets are, and, like true wit, his often shines out from the most common experiences; thus,

When evening dim
Draws around us, then the lonely caterwaul,
Tart solo, sour duet, and general squall,
These are our hymn.

But many of his stanzas most appropriately get their inspiration from his profession; as in,

Ye healers of men, for a moment decline
Your feats in the rhubarb and ipecac line;
While you shut up your turnpike, your neighbors can go
The old round road to the regions below.

Holmes also never forgot the sufferings which young doctors undergo, and which led him to say,

Talk of your science! After all is said
There is nothing like a bare and shiny head.
Age lends the graces which are sure to please.
Folks want their doctors mouldy like their cheese.

Now, I never had a bare and shiny head, nor do I have one now. But I was always beardless, and when old women showed fright at my supposed youth I hastened to relieve them by referring to my wife and children.

But all this bright playful humor was only a small part of Holmes. Instead, through so many seem-

ingly light hearted sentences, an undertone of deep feeling, if not of pathos, may be noted by those who have feeling. At times it rises to the expression of the noblest sentiment.

Dr. A. JACOBI.—There is nothing for me to say. In the presence of Apollo and the Muses I keep silence. There is no introduction required for a poet who celebrates a poet, Mr. Richard Watson Gilder.

MR. RICHARD WATSON GILDER:

God bless the day; but he hath blest
(And all the grateful world doth know it)
That happy day when, in the West,
Was born the wise and witty poet.

The poet who first to science sought,
And to the Merry Muses after,
Who learned what in no school is taught,
The secret of men's tears and laughter.

Be it, O Time, a weary while
Ere, in the land where spirits greet us,
A shade shall say (with Shakespear's smile)
"There comes the Autocrat to meet us."

Dr. A. JACOBI.—Nor have I anything to add to these proceedings. May I be permitted to recite for Mr. Gilder the two lines of Holmes? You have been

"so gently blending courtesy and art
That wisdom's lips seemed borrowing friendship's heart."

I now call this meeting adjourned. The two hundredth birthday of Dr. Oliver Wendell Holmes will be celebrated in 2009, and I hope you will all be present.

News Items.

Changes of Address.—Dr. B. M. Feldman, to the St. Albans, 515 Cathedral Parkway, New York.

Dr. C. C. Sichel, to 318 West Eighty-second Street, New York.

The Montefiore Home, New York, a hospital for chronic invalids, will celebrate the twenty-fifth anniversary of its establishment on October 26th. An elaborate programme is being prepared.

New Naval Sanatorium in the Philippines.—A site for the new naval sanatorium has been selected in the town of Baguio, in the Island of Luzon. It is said that the naval hospital at Yokohama will be abandoned when the new sanatorium is completed.

Flower Hospital's New Home for Nurses.—The nurses of Flower Hospital, New York, moved on October 12th into their new home, which has just been completed at a cost of \$50,000, and is said to be one of the best equipped in the city. The old quarters of the nurses will be converted into wards.

Lectures at Teachers' College.—Dr. Charles Gilmore Kerley will deliver the last of a series of three lectures on the feeding and general care of infants at Teachers' College, 525 West One Hundred and Twentieth Street, on Monday, October 18th, at five o'clock p. m. The lectures are of a popular nature and are open to the public.

The Society of Medical Jurisprudence, of New York, held its two hundred and twenty-third regular meeting at the New York Academy of Medicine on Monday evening, October 11th. The paper of the evening was read by the Hon. William S. Bennet, member of the Congressional Committee on Immigration, on Our Duty to the Immigrant.

Lectures on Skin Diseases.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give an eleventh series of clinical lectures on diseases of the skin in the out patient hall of the hospital, on Wednesday afternoons at 4:15 o'clock, commencing November 3d. The course will be free to the medical profession.

Medical Association of the Borough of the Bronx.—Tuberculosis was the general subject selected for consideration at a stated meeting of the society held on Wednesday, October 13th. The following papers were presented: Diet in Tuberculosis, by Dr. John A. Cutter; Differential Diagnosis of Incipient Tuberculosis, by Dr. Gustave H. E. Starke; Tuberculosis of the Kidney, by Dr. Winfield Ayres; and an Illustrated Talk on Tuberculosis, by Dr. Thomas Darlington.

Clinic at Roosevelt Hospital for the Surgeons of the Fleet.—As the guests of the trustees of the Roosevelt Hospital, the surgeons of the English, French, German, and Italian warships attended a clinic in the Syms operating amphitheatre of the hospital on Friday, October 8th. Dr. George E. Brewer, the attending surgeon, and his associate, Dr. Charles H. Peck, received the visitors. Five operations were performed, and the visiting surgeons expressed themselves as highly pleased with the conditions existing here.

The New York and New England Association of Railway Surgeons will hold its nineteenth annual meeting at the Academy of Medicine, New York, on November 16th and 17th. A "symposium" will be presented on the Causes of Railway Accidents Individualized. The names of prominent lay officials, attorneys, and surgeons from railways all over the country appear on the programme, which is very attractive and interesting. All interested in this line of work are cordially invited to attend. Dr. J. M. Wainwright, of Scranton, Pa., is president of the association, and Dr. George Chaffee, 338 Forty-seventh Street, Brooklyn, is corresponding secretary.

The Tri-Professional Medical Society, of New York, will hold its twenty-eighth stated meeting on Tuesday evening, October 19th, at 8:15 o'clock. Dr. A. H. Goelet will exhibit a patient with uterine fibroids, and another with lymphosarcoma of the lumbar region. The president of the society, Dr. G. Morgan Muren, will deliver an address on the subject of the education of the venereal patient. Dr. Walter T. Dannreuther will read a paper entitled A Practical Consideration of Accidental Wounds and the Rational Treatment of Such Injuries. There will be a general discussion, which will be opened by Dr. Walter C. Wood. Dr. G. K. Dickinson, Dr. C. P. Bulson, and Dr. A. J. Walshed.

The Medical Association of the Greater City of New York will hold a stated meeting in Du Bois Hall, New York Academy of Medicine, on Monday, October 18th, at 8:30 p. m. After the presentation of specimens, patients, and voluntary communications, Dr. Robert T. Morris, president of the association, and Dr. Wolff Freudenthal will present the report of the delegates to the recent International Medical Congress at Budapest. Dr. Louis Faugeres Bishop will read a paper entitled The Fundamental Functions of the Muscle Cells of the Cardiovascular System with the Suggestion of a Classification of Arterial Disorders. Among those who will take part in the discussion are Dr. William H. Thomson, Dr. Richard Van Santvoord, Dr. Heinrich Stern, Dr. Reynold W. Wilcox, Dr. Edward E. Cornwall, Dr. Robert Abrahams, Dr. Herbert S. Carter, Dr. Haven Emerson, and Dr. Leander H. Shearer.

A Sale of Medical Periodicals.—A notice has been issued from the office of the chief surgeon of the Department of the East, that there will be sold at public auction at the office of the Chief Surgeon, Department of the East, Governors Island, N. Y., on Monday, October 18, 1909, at 11 o'clock a. m., the following medical property, viz.: *American Journal of Medical Sciences*, 217 numbers; *American Journal of Obstetrics*, 212 numbers; *Annals of Surgery*, 60 numbers; *British Medical Journal*, 357 numbers; *Journal of Applied Microscopy*, 100 numbers; *Journal of Experimental Medicine*, 79 numbers; *Journal of Hygiene*, 25 numbers; *The Lancet*, 78 numbers; *Medical News*, 705 numbers; *Philadelphia Medical Journal*, 26 numbers; *Popular Science Monthly*, 136 numbers; *The Sanitarian*, 92 numbers; *Therapeutic Gazette*, 24 numbers; *University of Pennsylvania Medical Bulletin*, 137 numbers; *University of Pennsylvania Medical Magazine*, 28 numbers; and *Virginia Medical Semi-Monthly*, 283 numbers. Property can be inspected any day prior to sale, from 10 a. m. to 2 p. m., and will be sold to the highest bidder. Terms, cash at time of sale, buyer to remove property on October 18, 1909.

Buffalo Academy of Medicine.—At a regular meeting of the Section in Medicine, held on Tuesday evening, October 12th, the following papers were read: Finkelstein's Views on Alimentary Intoxications in Infancy, by Dr. Irving M. Snow; The Relation of Hepatic Sclerosis to Alcoholism, by Dr. A. L. Benedict; Adiposis Dolorosa and Other Abnormal Fat Deposits, by Dr. Irving P. Lyon. On October 20th the Section in Obstetrics and Gynecology will meet, and the programme will include a paper by Dr. Herman E. Hayd entitled Prolapsus Uteri with Reference to Authors' Perineal Operation. At a meeting of the Section in Surgery to be held on Tuesday, October 19th, Dr. B. E. MacKenzie, of Toronto, Canada, will read a paper on the Architecture and Clothing of the Human Foot.

A Conference on the Prevention of Infant Mortality will be held in Lamson Hall, Yale University, New Haven, Conn., on November 11th and 12th, under the auspices of the American Academy of Medicine. The medical, philanthropic, institutional, and educational aspects of the subject will be discussed by physicians, sociologists, and educators. An excellent programme has been prepared, and an invitation is extended to all members of the medical profession to attend. There will be an exhibit by the Boston Committee on Milk and Baby Hygiene, under the direction of Professor Irving Fisher. Dr. James H. McBride, of Pasadena, Cal., is president of the academy, and Dr. Charles McIntyre, of Easton, Pa., is the secretary. Information concerning the conference may be obtained from the secretary of the committee on local arrangements, Professor C. J. Bartlett, 96 Sherman Avenue, New Haven.

The East Side Physicians' Association will hold a regular meeting in Scheffel Hall, New York, on Thursday, October 28, at 8:30 p. m. The following programme has been arranged: Presentation of cases—A case of leprosy and a case of fibroma molluscum and Recklinghausen's disease, by Dr. William S. Gotthel; a case of aneurysm of the internal carotid in a child of six years, by Dr. Max Gherlter, and a dermatological case by Dr. Robert Abrahams. Papers—General Remarks on the Attitude of the Department of Health to Typhoid Fever, by Dr. Thomas Darlington; the Diagnosis and Treatment of Typhoid Fever, by Dr. Warren Coleman; Typhoid Fever from the Surgical Point of View, by Dr. A. E. Isaacs; Typhoid Fever in Children, by Dr. Henry Heiman. There will be a general discussion, and a collation will be served at the close of the meeting, to which members and guests are invited.

Personal.—Dr. J. Hobart Egbert, of the surgical staff of St. Joseph's Hospital, Willimantic, Conn., an authority on tropical diseases, was welcomed home from his recent sojourn in South America by the citizens of Willimantic at a banquet given in his honor at Windham Inn, Thursday evening, October 7th.

Passed Assistant Surgeon John F. Anderson, Public Health and Marine Hospital Service, has been detailed as director of the Hygienic Laboratory, Washington, D. C., vice Dr. Milton J. Rosenau, who recently resigned to become professor of preventive medicine at Harvard University.

Dr. James W. Markoe, of New York, has returned from abroad and resumed practice at 20 West Fifth Street.

The "freedom of the city" was given to Dr. Frederick A. Cook, the Arctic explorer, at a special meeting of the New York Board of Aldermen, held on Friday, October 15th.

Hospital Benefits.—The St. Joseph's Hospital, at Far Rockaway, Long Island, received \$8,500, the net proceeds from the lawn fête and fair held recently in aid of the hospital.

A fair will be held in the Knapp Mansion, Brooklyn, from November 8th to 13th, in aid of the building fund of the Eastern District Hospital, Bedford Avenue and South Third Street.

Under the patronage of a number of prominent society women of New York, a ball for the benefit of the Nassau Hospital will be given on the Mincola fair grounds on October 27th.

Four performances of Victor Herbert's opera "The Rose of Algeria" will be given at the Majestic Theatre, Brooklyn, on the evenings of November 8th, 9th, 10th, and 11th, under the direction of the German Hospital Aid Association, for the benefit of the hospital.

The net proceeds from a "tag day" held recently in aid of the Jamaica Hospital amounted to about \$1,500.

The Health of Pittsburgh.—During the week ending October 22, 1909, the following cases of transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 7 cases, 0 deaths; typhoid fever, 19 cases, 2 deaths; scarlet fever, 26 cases, 1 death; diphtheria, 24 cases, 1 death; measles, 4 cases, 0 deaths; whooping cough, 3 cases, 0 deaths; pulmonary tuberculosis, 26 cases, 13 deaths. The total deaths for the week numbered 109, in an estimated population of 572,000, corresponding to an annual death rate of 13.72 in a thousand of population.

Association of Military Surgeons.—At the eighteenth annual meeting of the Association of Military Surgeons of the United States, held in Washington, D. C., on October 4th, 5th, 6th, and 7th, the following officers were elected: President, Colonel, J. K. Weaver, National Guard, Norris-town, Pa.; first vice-president, Colonel William C. Gorgas, United States Army, Ancon, Panama; second vice-president, Surgeon Charles P. Wertenbaker, Public Health and Marine Hospital Service, Norfolk, Va.; third vice-president, Surgeon W. C. Braisted, United States Navy, Washington; secretary, Major Charles Lynch, United States Army, Washington; and treasurer, Major Herbert A. Arnold, National Guard, Ardmore, Pa.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission announces examinations on October 30th are the following: Medical superintendent of the State Tuberculosis Hospital, Ray Brook, salary, \$3,500 a year; women physicians to State hospitals and institutions, salary, \$1,000 and maintenance; instructors in manual training, male, State School for the Blind, Batavia, salary, \$600 and maintenance; superintendent of New York State Custodial Asylum for Feeble Minded Women at Newark, N. Y., salary, \$2,500 a year and maintenance. Applications should be filed on or before October 23d. For further information and application blanks address the State Civil Service Commission, Albany, N. Y.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statements of the new cases and deaths reported for the two weeks ending October 9, 1909:

	October 2-9		October 9-16	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	438	118	435	144
Diphtheria	180	13	219	9
Measles	98	0	102	7
Scarlet fever	77	4	130	2
Smallpox	1	1	23	1
Varicella	18	1	23	1
Typhoid fever	170	25	147	24
Whooping cough	82	12	39	12
Cerebrospinal meningitis	10	7	6	4
Total	1,074	175	1,075	202

The American Public Health Association will hold its thirty-seventh annual meeting in Richmond, Va., on Tuesday, Wednesday, Thursday, and Friday, October 19th to 22d. The opening meeting will be held on Tuesday morning at 9:30 o'clock, and, after the necessary announcements, will adjourn for section meetings. The general sessions will meet on Tuesday, Wednesday, and Thursday afternoons, with a closing meeting on Friday morning, and the section meetings will be held on Tuesday, Wednesday, and Thursday forenoons. All meetings will be held in the Jefferson Hotel. There are three sections, one on vital statistics, one of municipal health officers, and a laboratory section. Among the subjects mentioned on the preliminary programme which are to be discussed at this convention are public hygiene in modern sociology; popular education movements in public health; industrial hygiene; the registration of vital statistics; typhoid fever; school hygiene; milk and meat; yellow fever; prevention of venereal diseases; water and sewage; diphtheria; tuberculosis; school inspection; disposal of city wastes; morbidity and mortality statistics, etc. Delegates will be present from the United States, Canada, Mexico, and Cuba. The officers of the association are: President, Dr. Gardner T. Swarts, of Providence, R. I.; first vice-president, Dr. R. M. Simpson, of Winnipeg, Manitoba; second vice-president, Dr. J. Chico, of Guanajuato, Mexico; third vice-president, Major Charles F. Mason, United States Army; secretary, Dr. Charles O. Probst, of Columbus, Ohio; treasurer, Dr. Frank W. Wright, of New Haven, Conn.

Scientific Society Meetings in Philadelphia for the Week Ending October 23, 1909:

MONDAY, October 18th.—Medical Jurisprudence Society; Medical Society of the Woman's Hospital.

TUESDAY, October 19th.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

WEDNESDAY, October 20th.—Philadelphia County Medical Society (Business meeting open to members only), Section in Otology and Laryngology, College of Physicians; Franklin Institute.

THURSDAY, October 21st.—Section in Ophthalmology, College of Physicians; Section Meeting, Franklin Institute; Southwark Medical Society; Northwest Branch, Philadelphia County Medical Society; Delaware Valley Ornithologist's Club.

FRIDAY, October 22d.—Philadelphia Neurological Society; Northern Medical Association.

The Health of Philadelphia.—During the week ending Saturday, October 2, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 37 cases, 7 deaths; scarlet fever, 33 cases, 3 deaths; chickenpox, 7 cases, 0 deaths; diphtheria, 64 cases, 8 deaths; measles, 10 cases, 0 deaths; whooping cough, 10 cases, 2 deaths; tuberculosis of the lungs, 81 cases, 43 deaths; pneumonia, 12 cases, 15 deaths; erysipelas, 5 cases, 0 deaths; mumps, 2 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 35 deaths; puerperal fever, 1 death. The total deaths numbered 390 in an estimated population of 1,565,569, corresponding to an annual death rate of 12.95 in a thousand of population. The total infant mortality was 98; 80 under one year of age, and 18 between one and two years of age. There were 36 stillbirths; 20 males and 16 females. There were 3 suicides and 12 deaths due to accidents. There was no precipitation.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending October 2, 1909, there were 1,192 deaths from all causes reported to the department, 8 less than for the corresponding week in 1908. The annual death rate in a thousand population was 13.62 for the whole city, and for each of the five boroughs as follows: Manhattan, 12.94; the Bronx, 15.89; Brooklyn, 13.79; Queens, 13.42; Richmond, 21.41. The total infant mortality was 450; 322 under one year of age; 78 between one and two years of age; and 50 between two and five years of age. Of the total number of deaths of children under five years of age, 155 were due to diarrhoeal diseases. Other deaths from important causes were as follows: Contagious diseases, 48; pulmonary tuberculosis, 118; diarrhoeal diseases, over five years of age, 164; organic heart diseases, 97; Bright's disease, 80; cancer, 50; pneumonia, 51; bronchopneumonia, 72. There were 11 suicides, 56 deaths from accident, and 1 death from homicide, making a total of 68 deaths by violence. There were 109 stillbirths. Five hundred and ninety-eight marriages, and 2,179 births were reported during the week.

Conference of Medical Inspectors.—County medical inspectors and chiefs of tuberculosis dispensaries throughout the State of Pennsylvania met in Philadelphia recently for their second annual conference. This conference was called by Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania, because the one held last year was found to be very successful. The principal subject of discussion was tuberculosis and the latest methods of fighting it, but every phase of the work of the Health Department was discussed. Among the speakers were Dr. Eugene H. Porter, Commissioner of Health of New York State; Dr. Thomas Darlington, Commissioner of Health of New York City; and Surgeon General Wyman, Public Health and Marine Hospital Service. The programme included a clinic on tuberculous meningitis, by Dr. Joseph Sailer, at the Philadelphia General Hospital; a clinic on surgical tuberculosis, by Dr. Robert G. Le Conte, at the Pennsylvania Hospital; a lecture on tuberculosis of the viscera, by Dr. James M. Anders, at the Medicochirurgical Hospital, and one at the Jefferson Hospital on tuberculosis of serous membranes, by Dr. James C. Wilson. Dr. Samuel G. Dixon entertained the visiting physicians at luncheon at his country estate, Black Rock Farm, Bryn Mawr. His guests presented Dr. Dixon with a handsome loving cup.

Society Meetings for the Coming Week:

MONDAY, October 18th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, October 19th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, October 20th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society of New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, October 21st.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

FRIDAY, October 22d.—New York Society of German Physicians; Academy of Pathological Sciences, New York; New York Clinical Society.

SATURDAY, October 23d.—West End Medical Society, New York; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society, New York.

Gifts and Bequests to Charity.—By the will of Mrs. Catherine T. Buttrick, late of Lowell, Mass., the Lowell Day Nursery Association will receive \$5,000, and St. John's Hospital, Lowell, will receive \$26,000, of which \$6,000 is to be devoted to the establishment of a bed to be called The John H. Buttrick Free Bed.

By the will of Ann Carr, late of Philadelphia, the St. Joseph's Hospital, St. Vincent's Home, and the Home for the Aged will each receive \$200.

The will of Moses Kahn, late of Philadelphia, includes a bequest of \$100 to the Hebrew Hospital of Baltimore, Md.

The German Hospital, of Brooklyn, will receive \$500, by the will of former magistrate Charles Naehr.

By the will of Phoebe Ann Thorne the Miriam Osborne Memorial Home Association receives \$10,000; the Home for Incurables, of Fordham, N. Y., receives \$10,000, half of which is to be used for the endowment of a bed to be known as the Lydia Ann Thorne bed; the Women's Hospital, the General Memorial Hospital, and the Society for the Relief of Ruptured and Crippled Children receive \$10,000 each, one half in each case to be used for the endowment of a bed to be known as the Lydia Ann Thorne bed; the Children's Aid Society receives \$10,000, one half of which is to be used in procuring homes and employment for children; the New York Skin and Cancer Hospital receives \$10,000; the New York Infirmary for Women and Children, the Manhattan Eye and Ear Hospital, the New York Eye and Ear Infirmary, the Association for the Improvement of the Poor, the Colored Home and Hospital, the Society for the Relief of the Destitute Blind, the Colored Orphan Asylum and Association for the Benefit of Colored Children, the New York Society for the Prevention of Cruelty to Children receive \$5,000 each; and the Friends' Home Association receives \$6,000.

Under the terms of the will of Mrs. Sarah Morris, late of Chicago, bequests of nearly \$400,000 are made to charitable institutions. Principal among these is a gift of \$300,000, previously made known, for the erection and endowment of a convalescent home or hospital for children in memory of Nelson Morris and the testatrix. Other bequests range from \$2,500 to \$10,000. The institutions to receive \$10,000 are: The Cleveland Jewish Orphan Asylum of Cleveland, Ohio; the Home for Jewish-Friendless and Working Girls, Chicago; the Chicago Home for Jewish Orphans; the Home for Aged Jews, Chicago; and the Michael Reese Hospital, Chicago.

By the will of Mr. Thomas Hill the Home for Incurables, Brooklyn, will receive \$500.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

September 30, 1909.

1. A Practical Diet Chart, By HORACE D. ARNOLD.
2. Nasal and Nasopharyngeal Conditions as Causative Factors in Middle Ear Diseases, By G. A. LELAND.
3. The Diagnosis of Phthisis, and Its Association with Certain Simulating Diseases, By CLEVELAND FLOYD and WILSTON W. BARKER.
4. Distinction between the Psychoneuroses not always Necessary, By G. L. WALTON.
5. Some Observations on the Ophthalmotuberculin Reaction, By FRANCIS P. MCCARTHY.

1. **A Practical Diet Chart.**—Arnold describes two charts which will give all the practical regulation of the diet in such a form that calculations about the diet can be readily made and the results can be conveniently recorded. As scientific work in connection with the diet must be based on the caloric value of food and the amount of each of the three ingredients, protein, fats, and carbohydrates, contained in the food, the quantitative regulation of food is as important as its qualitative regulations. These charts are applicable whenever the diet needs regulation in any condition.

4. **Distinction between the Psychoneuroses not always Necessary.**—Walton says that after eliminating, from the cases presenting nervous symptoms without known organic basis, those whose features are sufficiently marked to justify their classification under hysteria, hypochondria, or manic depressive insanity, there remains a large number whose symptoms are not distinctive. The effort to place each of these cases under one or the other category is unsatisfactory. The efforts of the textbooks to distinguish between the minor forms of these conditions are confusing, the symptoms given being practically identical. To apply the term "neurasthenia" to all these cases is neither logical nor satisfactory, since this term implies a condition distinct from the other psychoneuroses, to say nothing of the fact that the term implies the asthenic condition which is far from constant. In the present state of our knowledge and study of these conditions, the most satisfactory solution seems to be to place under the diagnosis hysteria, hypochondria, and manic depressive insanity such cases only as have dominant features characteristic of these disorders, and to group the remainder under the general term "psychoneurosis" until definitely diagnostic features appear.

5. **Ophthalmotuberculin Reaction.**—McCarthy reviews the results received in over two hundred and fifty cases of ophthalmotuberculin reaction. He remarks that the ophthalmotuberculin reaction is of considerable value in the diagnosis of tuberculosis. It is especially valuable in cases of incipient tuberculosis with only suspicious signs of the disease in the chest, with negative or no sputum. In these cases the reaction is usually marked. It is a safe test, easy of application, and produces no constitutional symptoms. A negative reaction does not rule out the presence of tuberculous disease, as a good many cases of advanced tuberculosis fail to react. The use of the conjunctival test should take the place of the subcutaneous method; in many in-

stances it is just as accurate and less troublesome to the patient. In the great majority of cases no constitutional symptoms are associated with the reaction. No alteration occurs in the physical signs, such as frequently occurs following the administration of tuberculin subcutaneously. A certain proportion of typhoid fever cases give a positive reaction. None of the fevers of the typhoid group caused by the paratyphoid and paracolon bacilli gave the reaction. Healed cases of tuberculosis do not give the reaction.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
October 9, 1909.

1. Diet in Typhoid Fever, By WARREN COLEMAN.
2. Intradural Tumor of the Middorsal Cord. Operation: Complete Recovery of Sensation and Partial Restoration of Motion, By JULIUS GRINKER.
3. The Endometrium and Some of Its Variations, By WILLIAM S. GARDNER and EMIL NOVAK.
4. Myiasis Intestinalis Due to Infection with Three Species of Dipterous Larvæ, By E. F. CAMPBELL and H. J. CORPER.
5. Prevention of Malaria, By SEALE HARRIS.
6. Minor Gynecological Matters often Overlooked, By I. S. STONE.
7. The Sanitary Regulation of San Francisco, By N. K. FOSTER.
8. The Government Tobacco Factory at Issy, near Paris. Hygienic Notes, By FRANCIS DOWLING.
9. Factors Which Contribute to a Reduction in Mortality in Abdominal Surgery, By F. F. SIMPSON.
10. Vaccine and Serum Therapy in Children, By CHARLES GILMORE.
11. Massage in General Medicine, By JOHN K. MITCHELL.
12. Intestinal Autointoxication as a Factor in the Causation of Pathological Conditions of Ear, Nose, and Throat, By J. A. STUCKY.

1. Diet in Typhoid Fever.—Coleman shows that the practice of partial starvation, at present followed in the treatment of typhoid fever, is highly detrimental to the patient's welfare. It is not only desirable but necessary that the typhoid patient be given sufficient food to cover his energy expenditures. The amount of food required for this purpose will vary with different patients, but may be estimated approximately on the basis of forty calories per kilogramme of body weight each day. He has studied forty-six cases of typhoid fever. The diet he used consisted, in the main, of milk, cream, milk sugar, and eggs; also small slices of stale bread or toast with as much butter as the patient wished. The daily quantities of these articles of food were about one and a half quarts of milk, from one to two pints of cream, from one half to one and two thirds pounds of milk sugar, and from three to six eggs.

4. Myiasis Intestinalis.—McC Campbell and Corper report a case of myiasis intestinalis. Myiasis occurs both within the body and on its external surfaces. Thus we have myiasis interna and myiasis externa. In the former should be included those cases in which the fly larvæ invade the dermis and subcutaneous tissues (myiasis hypodermatica) and those in which they invade the intestines (myiasis intestinalis). In the latter should be included those cases in which the larvæ invade wounds and open abrasions of the epidermis and dermis (myiasis dermatosis). The following entomological facts are given by the authors: Some of the flies do not lay eggs, living larvæ issuing from the female (vivi-

parous). It has also been noted that when certain of the dipteræ become parasitic no wings are developed. Nothing seems to be known as to whether the larvæ may reproduce, as has been noted in the embryonic types of some other low forms of animal life. The sexual organs in the larvæ, according to most entomologists, are not completely developed until after the adult fly stage is reached. The larva is entirely different from the adult fly, and during the pupal stage which intervenes all the organs of the larva, except the reproductive, undergo degeneration and are regenerated. Such an arrangement suggests a very high specialization of these organs and it may be possible that when these larvæ become parasitic within the body reproduction may take place. It seems positive that the eggs can hatch and the larvæ grow to full size in the intestine of man. It has also been observed that larvæ may exist for very long periods of time within the body. There seems to be four possible explanations for the continued presence of the larvæ within the body. 1. Persistence of the larval state for two to seven years. It must be assumed that very large numbers of eggs or very young larvæ were ingested, bearing in mind the number which have been passed. There is one case in the literature of twelve years' standing. 2. The reproduction of the larvæ within the intestine. This would most easily account for the large numbers passed for a series of years. 3. The completion of the cycle by the hatching of the larvæ into the adult parasitic fly (wingless) and the laying of eggs by these flies in the intestines. 4. The continued re-infection by the eating of eggs or larvæ, or the deposition of eggs around the anus and their subsequent invasion of the intestine.

5. Prevention of Malaria.—Harris says that to prevent malaria, 1, the infected individual should be (a) isolated (placed under a mosquito net or in a screened room) to prevent his infecting anopheles mosquitoes; (b) the mosquitoes in the house should be destroyed by burning sulphur or pyrethrum; (c) the persons in the house or others exposed to the bites of infected mosquitoes should have preventive doses of quinine (3 grains, morning and night); (d) after the patient has been relieved of all symptoms he should take six grains of quinine a day for a period of at least three months, to be certain that he cannot infect the anopheles mosquitoes in his community (Thayer). Malaria should be classed as a reportable disease. Physicians should be required to report to the city and county health officers the name and location of each patient suffering from malaria, just as is now done with yellow fever and typhoid; and, as in those diseases, the source of infection should be searched for and removed if possible. To protect the inhabitants of a community, whether in the city or in the country, efforts should be made to destroy all anopheles mosquitoes. Every accumulation of stagnant water, whether large or small, which can become a breeding place for mosquitoes, should be drained or filled in, or oiled, when those measures are not practicable. The débris, green moss, and decaying vegetable matter on the surface of the water along the banks of slowly running streams should be removed because that is a favorite place for the breeding of

anopheles mosquitoes. When it is not possible to destroy all mosquitoes in any community, every person should sleep in screened rooms, or under mosquito nets, from early spring until the mosquitoes are destroyed by the frosts of winter. In badly infected communities (malarial localities) every person should take prophylactic doses of quinine during the summer and autumn months.

8. **Tobacco Factories in France.**—As is well known the tobacco industry is a monopoly in France. Dowling gives an interesting report of the factory of Issy les Moulineaux, near Paris. As to the influence of tobacco on man, Dowling remarks that in the minor the use of tobacco in any form is highly injurious, interfering with the normal development of the mental powers, producing various nervous disturbances, especially nervous disturbances of the heart, as manifested by palpitation, weakness, irregular action, irritability, and anginal pains. On those who are more advanced in life, from forty upward, tobacco seems to spend its force more particularly on the eyes, producing a gradual but progressive reduction of the visual power, together with a confounding of colors for central vision. The deleterious effects of tobacco on the system in general, or on the eyes, is due, as we all know, to the presence of a poisonous ingredient called nicotine. This oily, colorless fluid diffuses itself into the blood with as much rapidity as prussic acid, and a poisonous dose has been known to kill an adult in three minutes. Nicotine, when heated to 250° F. becomes volatilized and decomposed, but if watery vapor is present volatilization takes place without decomposition. When dry tobacco is smoked, the greater part of the nicotine is decomposed by the heat and passes off with the smoke. The more moist the tobacco—and the cheaper grades are usually damp—the more this is retarded. The cheaper grades of tobacco contain more nicotine than the more expensive ones, and consequently are more injurious to the consumers. The tobacco used for chewing purposes is usually very rich in nicotine. The action of nicotine on the blood is an interesting one; it first produces a temporary increase in the blood pressure; this is followed by a more prolonged reduction of the pressure, and this again is followed by an increase in the blood pressure. On the blood corpuscles themselves nicotine exerts a marked influence. The red corpuscles become serrated in appearance, and when the drug is administered in large doses partial disintegration of the corpuscles takes place. If the poison is added to the specimen under the microscope, the red corpuscles appear to disintegrate, and their diameter becomes smaller, whereby, for the most part, their concavity is diminished and they become colorless and transparent. Vas has shown that in chronic tobacco poisoning the number of red corpuscles is reduced, whereas the number of white corpuscles is increased. The action of the poison is particularly marked on the white corpuscles. Their motion, which on the artificially warmed slide continues, is immediately retarded by the addition of nicotine; the blood corpuscle, on its part, breaks up into eight or more divisions, which from time to time separate and swim in the fluid independently of each other. These di-

visions are round in appearance and bear a strong resemblance to the red corpuscles. The globular shape which the white corpuscles often assume does not appear after the addition of nicotine, but the protoplasm remains without change in the condition in which it appeared when motion was suspended. Nicotine exerts a direct action on the oxyhemoglobin, and it is probable that it is in the reduction of the latter that nicotine acts as a causative agent in the production of asphyxia. The disintegration of the red corpuscles points to the correctness of this conclusion; therefore, death following nicotine poisoning is not simply in consequence of the usual asphyxia from depression of the respiratory centre *per se*, but is due to the fact that the hemoglobin fails to carry oxygen to the various parts of the body.

MEDICAL RECORD

October 9, 1909.

1. On the Development of Gastroenterology in America, By JULIUS FRIEDENWALL.
2. A New Method of Catheterizing the Pylorus and Duodenum, By MAX EINHORN.
3. The Clinical Results of Gastroenterostomy; a Preliminary Report, By HENRY WALD BETTMAN and FRANKLIN W. WHITE.
4. Gastric Symptoms and Gallbladder Disease, By HARRY ADLER.
5. Cæsarean Section in Placenta Prævia with Report of a Case, By VICTOR E. MARSHALL.
6. Chronic Varicose Ulcers of the Leg, By ALFRED J. BUKA.
7. A Case of Trichinosis, By LINDLEY DOBSON.
8. Permanent Blood Pressure Records, By BRYCE W. FONTAINE.

4. **Gastric Symptoms and Gallbladder Disease.**—Adler thinks, from his observations, that by Rosin's test we are able to show choluria in many cases where there is no suspicion of jaundice, and thereby furnish an invaluable aid in this difficult field of internal medicine. The test may also be of value in proving whether a yellow sclera is due to bile or simply to subconjunctival fat. The explanation of the choluria in these cases in which there is no occlusion of the common duct lies probably in the extension of the inflammation of the gallbladder during the attack to the bile passages with interference with the flow of bile, as brought out by Riedel; or on the basis of Minkowski's theory that a disturbance in the function of the liver cells is produced which results in a secretion of the bile in an abnormal direction (icterus by parapetesis). He describes Rosin's method with tincture of iodine as follows: Tincture of iodine is diluted with alcohol until about the same color as that of the urine to be examined. It is carefully run down on a small amount of the urine so as not to mix but to form a layer. If bile is present at the plane of contact a pale green ring of biliverdin is formed. It is best seen by holding it against a white background. If the amount of bile present is extremely small the ring appears only after standing a few minutes. This test is by far the most sensitive of simpler methods, giving positive results, when Gmelin's test or its modifications are negative.

5. **Cæsarean Section in Placenta Prævia.**—Marshall suggests the following tentative indications for Cæsarean section in placenta prævia: 1. Central or lateral prævia (when these

can be diagnosticated) associated with rigid os— with or without profuse hæmorrhage. 2. Child at term and living. 3. Sterile birth canal, *i. e.*, normal temperature of mother and favorable surroundings. 4. Just minor pelves. Conjugate vera $3\frac{1}{2}$ inches or under. 5. Deformed pelves. 6. History of previous operative deliveries. Finally, to perform Cæsarean section for placenta prævia requires the exercise of individual judgment in any particular case, and no set of rules can be formulated that will help much in the decision. Much will depend on the attitude of mind of the operator, his belief in his own aseptic technique. And in addition to these, in private practice at least, he must have the unqualified confidence of his patient.

6. Treatment of Varicose Ulcers.—This is fully abstracted in our Therapeutical Notes, page 755.

THE BRITISH MEDICAL JOURNAL.

September 25, 1909.

THE SEVENTY-SEVENTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, HELD AT BELFAST, JULY 27, 28, 29, and 30, 1909.

Section in Medicine.

1. Discussion on the Medical Aspects of Athleticism, Introduced by W. TYRELL BROOKS.
2. A Natural Experiment in Cardiac Strain, By CLIVE RIVIERE.
3. Administration of Oxygen in High Percentage, By BENJAMIN MOORE.
4. A Case in which Pneumaturia was Apparently the Sole Indication of Glycosuria, By FRANK C. EVE.
5. The Influence of Soil on Phthisis as Illustrating a Neglected Principle in Climatology, By WILLIAM GORDON.
6. The Gastroscope and its Uses, By HENRY S. SOUTTAR and THEODORE THOMPSON.
7. Hourglass Contraction of the Stomach, By A. GORDON GULLAN.
8. Tic Douloureux: the Technique and Results of Schöller's Method of Treatment, By PURVES STEWART.
9. The Treatment of Tabes Dorsalis, By TOM A. WILLIAMS.
10. Pruritus in Lymphadenoma, By H. D. ROLLESTON.
11. The Value of Mental Symptoms in Diagnosis, By W. J. MAGUIRE.
12. Misconceptions Concerning the Riviera, By D. W. SAMWAYS.

Section in Pathology.

13. Introductory Remarks, By W. ST. CLAIR SYMMERS.
14. Observations on the Pathology of Innocent Goitre, By HELEN CHAMBERS.
15. On the Absence of Altmann's Granules from Cells of Malignant New Growths, By HENRY BECKTON.
16. A Case of Cancer of the Pylorus, By J. LORRAIN SMITH.
17. X Ray Carcinoma, By C. W. ROWNTREE.
18. On the Ætiology of Dysentery, By MARC ARMAND RUFFER and J. GRAHAM WILLMORE.
19. On the Value of Colored Substrata for the Detection of Differentiation of the Typhocoli Group, By E. J. MCWEENEY.
20. On Heterologous Agglutinins, more Particularly those Present in the Blood Serum of Cerebrospinal Fever and Typhus Fever Cases, By W. JAMES WILSON.
21. Portals of Entry of Tubercle Bacilli into the Body, By L. COBBETT.
22. On the Protozoan Origin of Tumors, By W. FORD ROBERTSON and M. C. W. YOUNG.
23. Effect on the Growth of Microorganisms of Different Percentages of Oxygen, By BENJAMIN MOORE and R. STENHOUSE WILLIAMS.

Section in Ophthalmology.

24. Introductory Remarks, By J. WALTON BROWNE.
25. Discussion on Eye Injuries in Relation to Workmen's Compensation, By FREELAND FERGUS.

26. The Ipsilaterality of Optic Neuritis and the Lesion Causing It, By SIR VICTOR HORSLEY.
27. Acute Orbital Periostitis Consequent on Dental Disease, By N. BISHOP HARMAN.
28. Adenoids and Asthenopia, By W. M. KILLEN.
29. A Case of Compressed Air Illness Cured by Decompression, By G. C. C. DAMANT and E. R. LOCKWOOD-THOMAS.

5. The Influence of Soil on Phthisis.—Gordon has examined the question of influence of soil on phthisis. He considers the soil as it affects phthisis prevalence in the streets of Exeter and in a number of country parishes. In Exeter the nature of the subsoil of each street is exactly known, and he gives it as gravel, sandstone, and clay (made soil being excluded because of its varying and uncertain composition). In the country parishes the geological formation in each is given. The influences, other than soil, which are at present known and may be reasonably supposed to affect the prevalence of phthisis in Devonshire are: Winds (strong, prevalent, and rain bearing), altitude, rainfall, density of population, poverty, occupation, insanitation, race, closeness of intermarriage, and date of observation. Wind and date of observation can be at once eliminated by only considering sheltered populations and contemporary records. Altitude, race, and closeness of intermarriage may be neglected, since he finds no evidence of their exercising any influence in Devon, except that, in exposed situations, altitude seems to aggravate the effects of exposure. Insanitation may also be set aside, because in Exeter streets and in Devonshire rural districts no relation is discernible between general death rate and phthisis death rate. Moreover, in the country parishes the results of inquiries indicate no important differences in sanitary conditions. Occupations in the country villages do not appreciably differ, and in Exeter there is no large injurious industry which could exert a considerable effect. Rainfall in Exeter may be regarded as uniform and neglected. But in the country parishes it varies greatly; therefore he gives the probable rainfall for each parish, which was found not to cause difficulty. Poverty and density of population cannot here be separated. In the country parishes these conditions are too uniform to affect the figures. But in Exeter they must be taken into account. He thinks all these influences can be eliminated, and tries to prove that soil is the only influence, to our knowledge, which plays a part in phthisis.

14. The Pathology of Innocent Goitre.—Helen Chambers points out that the condition of the vesicles of the thyroid gland in some forms of inflammation, such as follows a tracheotomy wound, may be identical with that found in cases of Graves's disease. Primary Graves's disease is occasionally found to occur associated with changes in the thyroid which are focal in character. In other forms of goitre than Graves's disease—namely, adenomatous and adenoparenchymatous—the presence of nervous symptoms is commonly associated with the occurrence of histological changes in the thyroid gland tissue consisting of local accumulations of round cells and alteration to a more or less extent in the surrounding vesicles. In certain forms of goitre the histological characters are such as to suggest a diffuse chronic inflammatory condition, namely, marked plasma cell infiltration

and endarteritis; and in other cases, including some of Graves's disease, similar changes are found in localized areas.

25. Eye Injuries in Relation to Workmen's Compensation.—Fergus refers to the Labor Act passed to insure workmen against injuries. He points out that many employees have the idea that the Act is a sort of accident insurance. A workman who gets any injury, no matter how trifling, is often apt to regard it as entitling him to a certain amount of money, and the problem that often occurs to him is as to how he is to make the most out of it. An insurance company knows that the expenses of fighting are considerable, and thus often settles for a larger sum than the injured person is strictly entitled to receive. But that was never the intention of the Act. It did not aim at accident insurance. All it sought to accomplish was compensation for incapacity, which is a legitimate enough object. This erroneous view has given rise to considerable malingering, and even to a certain amount of neurasthenia. No wonder that insurance premiums have been increased. For one class of work the premium was at first 2s. per £100 of the wage bill; to-day it is 30s. The author also speaks of the medical referee. A medical referee should be forbidden by law to act for a workmen's friendly society or for an insurance company doing workmen's compensation business. Further, to remove the case from all local bias, the referee for one particular district should reside in another.

THE LANCET.

September 25, 1909.

1. Modern Moods and Movements in Medicine.
By Sir THOMAS OLIVER.
2. The Treatment of Lupus Erythematosus.
By Sir MALCOLM MORRIS.
3. A Study of Spinal Anesthesia in Children and Infants. From a Series of 200 Cases, By H. TYRELL GRAY.
4. A Case of Acute Torsion of a Wandering Spleen; Splenectomy; Recovery.
By IAN MACDONALD and W. A. MACKAY.
5. A Case of Arteriovenous Anastomosis for Gangrene.
By DONALD J. ARMOUR and E. ARCHIBALD SMITH.
6. The Treatment of Syphilis by Intramuscular Injection of Insoluble Salts of Mercury as Contrasted with the Inunction Method: A Critical Rejoinder.
By H. C. FRENCH.
7. Congenital Dislocation of the Hip Joint: The Ultimate Results of the Manipulative Operation, and a Note on a New Open Operation for Relapsed Cases.
By J. JACKSON CLARKE.
8. A Case of Juvenile Myxædema.
By DAVID A. THOMSON.

2. The Treatment of Lupus Erythematosus.—Morris reminds us that there is no specific for lupus erythematosus. The guiding principle is that internal remedies should be used when the disease is associated with vasomotor disturbance in the extremities, and where there is evidence of autointoxication by poisonous substances circulating in the blood. External applications are to be relied upon only when no signs of systemic disturbance exist. The treatment is therefore constitutional or local; often both may be required. Any disorder of metabolism, or disease of the kidney or liver, must be dealt with by appropriate measures. The bowels should be carefully regulated by means of saline aperients in the morning, together with occasional small doses of calomel. Antisepsis of the mouth

and teeth is very important. Anything that is apt to give rise to flushing of the face is contraindicated; for this reason alcohol should be absolutely forbidden; curry and other heating condiments should be forbidden. Coffee, tea, and tobacco should be avoided. Conditions indicative of lowered vitality should be treated on general medical and hygienic principles. Where the circulation is defective, as evidenced by liability to chilblains and the other conditions, the patient should if possible spend the winter in a warm climate. The diet must be carefully regulated so as to minimize the risk of disordering the digestion or loading the intestine with materials that may form a favorable soil for infection. Salol in doses of ten grains, three times a day, may be given after each meal; salicin and bismuth in tablet or in pill are often useful. They may be combined with quinine, but this drug should not be given in cases where there is a tendency to chilblain circulation. He has not observed any particular benefit from arsenic, which is recommended by some, or digitalis, which is also recommended. Belladonna is of use in middle aged or elderly people. Ergotin he has not found serviceable. Where there is any abnormality of circulation he gives ichthyol internally, as recommended by Unna; it not only regulates the circulation, but acts as an intestinal disinfectant and prevents the formation of gas. In certain cases at the period of the menopause, when ichthyol has failed, he has given small doses of opium, beginning with 1-30th of a grain in pill, three times a day, and gradually increasing up to doses of one fourth of a grain. Adrenalin may be of use for the same purpose. In some very acute cases of lupus erythematosus he has had good results from the use for short periods of exclusively meat diet washed down by copious draughts of hot water. This cleanses the intestinal tract by preventing the formation of gas which is produced by farinaceous substances, and promotes the elimination of waste products by flushing the kidneys. In acute cases the meat and hot water may be continued for ten days at a time. Calcium chloride has been found by some beneficial in the treatment of chilblains, and on the ground of its alleged action on the circulation it might possibly be of advantage. The high frequency current is often of service, chiefly in promoting metabolism and maintaining a healthy state of the intestine. In general terms it may be said that the patient should lead a healthy outdoor life as far as circumstances will allow. In regard to local treatment, it may be said generally that in the early stages active interference often does harm. Here careful study of the idiosyncrasies of the patient and the peculiarities of the disease is especially necessary. In the hyperæmic stage, cooling lotions (calamine, subacetate of lead, etc.) should be applied. No ointments should be used as a rule. Hebra's soap rubbed in with flannel or lint is useful for the removal of scales and the protection of the surface. Ichthyol in the form of a lotion has almost a specific action on the circulation, and is the most useful of local remedies. Among other topical applications which may be found beneficial in individual cases are resorcin (10 per cent. in collodion); salicylic acid (3 to 6 per cent. in collodion), and pyrogallol acid, applied in

the form of a plaster. These applications should be used when the disease is very chronic. Resorcin in particular is apt to cause blistering if used in strength; it should therefore never be applied to inflammatory patches. Iodine liniment is also useful, especially when combined with quinine internally. Compression by collodion he has not found of much use. In the case of small patches, linear scarification or light touches of the thermocautery often give good results. A dressing of iodoform or a salicylic acid plaster mull should be applied afterward. In chronic cases he has used the Finsen light with success. In acute cases the light treatment does harm, and its effects should always be carefully watched. These agents, which are apt to be injurious in the early stages, are particularly useful in the later stages, when there is thickening of the integument. X rays have, in his hands, proved uncertain. Radium may be applied to limited areas. In short, the object aimed at in using these agents is to set up a certain amount of local reaction. Hence they should never be used when there is acute inflammation. At present there are no rules to guide us in the selection of the particular agent; one will succeed where another fails. They must therefore be used more or less empirically.

7. Treatment of Syphilis by Inunction or by Inoculation.—French considers that intramuscular injection of insoluble salts of mercury may possibly supplement but never supplant treatment by inunction methods where this latter excellent method is practicable in the early stages of syphilis. He adds two tables showing important figures and facts from the Royal Herbert Hospital, Woolwich, which show that in the British army gonorrhoea apparently causes as much medical inefficiency in hospital as, if not more than, syphilis owing to the greater number of cases and the longer duration of stay in hospital.

8. A Case of Juvenile Myxoedema.—Thomson reports such a case in a girl, eighteen years of age, who looked like a child six or seven years of age. Her height was forty inches, her weight 58 pounds. Her face was large and bloated, the eyelids were puffy, and the teeth were the decayed remnants of the first set. The skin was dry, and the hair was thin and also dry. In the supraclavicular regions large pads of "fat" were evident. The abdomen was very swollen; her mother said she thought that a growth must be present there. The facial expression was indicative of mental inadequacy. The menstrual period never developed. She received two grains of desiccated thyroid substance for a fortnight, the dose being then doubled. Four weeks after commencement of treatment iodothyrene was given for three months, beginning with one grain mornings and evenings, increasing to five grains three times daily. At this juncture she began to show signs of overdosage, and her weight remained stationary for some time. But attempts were made to find the dose requisite for the stage at which she had arrived, and finally she was given one grain daily, which dose never required to be increased. She then neither gained nor lost weight. Her height and weight at the time of writing were as follows: Weight, forty-seven

pounds; height, forty-two inches. Her face is intelligent and has lost the dull, heavy, idiotic expression. She engages in conversation. In her studies she has made remarkable progress. Menstruation has not yet appeared.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 16, 1909.

1. Lupus or Tertiary Syphilis? Sarcoma or Primary Syphilis? By NEISSER.
2. The Relations between Tumor Resistance and the Histological Construction of Transplanted Tumors in Mice. By J. A. MURRAY.
3. Antagonistic Treatment of Tuberculosis and Reversible Phylogenesis. By EDWIN KLEBS.
4. Further Contributions Concerning the Inhibition Reaction of Human Sera to Cobra Venom. By E. L. BRÜCKNER and H. MUCH.
5. Manifold Binding Properties of the Complements of Some Sera (from Patients with Leprosy) and Their Signification. By FRUGONI and PISANI.
6. Vitalismus and Teleology in the Natural Sciences. By THÖLE.
7. Psychopathology of Fear. By DUBOIS.
8. Specific Substances in the Diagnosis and Treatment of Tuberculosis. By J. MITELESCU.
9. The Relations of Diseases of the Eye to Obstetrics. By ERNST RUNGE.

1. Lupus or Tertiary Syphilis? Sarcoma or Primary Syphilis?—Neisser exhibited two patients, mother and daughter, who had suffered extensive losses of the tissue of the face as the result of a condition diagnosed and treated as lupus but which proved on examination of the blood to be tertiary syphilis and yielded promptly to the influence of mixed treatment. He also reported a case in which extirpation of the uterus for sarcoma of the cervix, diagnosed microscopically from an excised portion, was about to be performed when the usual secondary symptoms of syphilis appeared and the lesion proved to be a primary lesion.

4. Inhibition Reaction of Human Sera to Cobra Venom.—Brückner comes to the conclusion that this reaction in its present form, though of great theoretical serological interest, is not useful for diagnostic purposes. Much gives the technique of the reaction in detail and agrees that it is of little practical use.

8. Treatment of Tuberculosis.—Mitelescu says that in sanatoria we may commence treatment immediately with tuberculin in small doses gradually increased according to the indications of the case as an aid to the constitutional treatment, but recommends in private practice to begin with mixed treatment, first with passive and then, after the organism has become toned up and the tendency to hypersensibility has become less, with specific substances by way of the digestive tract, and finally to pass over to subcutaneous treatment.

9. Eye Diseases and Obstetrics.—Runge refers particularly to the albuminuric retinitis and uræmic amaurosis, the treatment of which is promotion of the excretion of the toxins producing the condition by aiding secretion through the skin and kidneys, and then speaks of ecchymoses of the conjunctiva and hemorrhages into the orbit and vitreous. Then come the septic inflammations of the eye due to puerperal sepsis and the visual disturbances induced by loss of blood, which may be due to acute anæmia, but may also be due to autointoxication from toxic products of metabolism. Thus may be

produced paralysis of the eye muscles, opacities of the lens, hæmorrhages into the vitreous, optic neuritis, choked disc, retrobulbar neuritis and neuro-retinitis.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 17, 1909.

1. The Dependence of Albuminuria upon the Acidity of the Urine. By VON HÖSSLIN.
2. The Treatment of Fractures with Nail Extension. By ANSCHÜTZ.
3. Plastic Use of the Uterus in the Operation for Carcinoma of the Rectum. Carcinoma of the Sigmoid Flexure Removed through the Vagina, By VON FRANQUE.
4. Intravenous Chloroform Narcosis, By BURKHARDT.
5. The Reduction of the Sensitiveness to Tuberculin in Tuberculous Persons during an Attack of Measles, By GRÜNER.
6. The Bactericide Capacity of the Intestine, By SCHÜTZ.
7. The Changes in the Blood Pressure Produced by Compressed Air, By SCHÖPPNER.
8. Anticipation Neuroses in the Region of the Eyes (Psychic Asthenopia), By SALZER.
9. Symptoms of Psychic Origin in the Upper Air Passages, By GRÜNWALD.
10. Diagnosis and Treatment of Pleural Adhesions, By ROTHSCCHILD.
11. Ulcus Rodens Permagnum, By LOSSEN.
12. A New Fibrin Method, By HERXHEIMER.
13. A New Spit Cup for Operations on the Mouth, Neck, and Nose, By LÖWENSTEIN.
14. The Legal Technique of Autopsies, By BLUMH.
15. Jakob Henle, By SUBHOFF.

1. Dependence of Albuminuria upon the Acidity of the Urine.—Von Hösslin concludes that in many cases albuminuria and cylindruria are directly dependent on the acidity of the urine. In these cases the albuminuria and cylindruria diminish or disappear as the acidity of the urine is reduced by the administration of sodium bicarbonate. In all cases of albuminuria its relation to acidity of the urine should be determined. The doses of soda necessary in each case may be ascertained by quantitative estimations of the albumin and of the acidity. The volumetric estimation of the albumin by means of the centrifuge is very convenient.

4. Intravenous Chloroform Narcosis.—Burkhardt reports four cases in which he produced a deep, prolonged narcosis from the intravenous infusion of physiological salt solution saturated with chloroform without the production of the least pathological symptom on the part of the respiration or heart. He asserts that this method presents advantages over the production of narcosis through the inhalation of chloroform, but admits that it presents certain disadvantages also.

5. Reduction of the Sensitiveness to Tuberculin in Tuberculous Persons during an Attack of Measles.—Grüner finds that when a person suffering from tuberculosis is attacked with measles his sensitiveness to tuberculin is enormously decreased, and that it returns, not gradually, but rapidly about the eighth day after the outbreak of the exanthem.

8. Psychic Asthenopia.—Salzer reports several cases in which he believes the asthenopia to have been caused by a pathological concentration of the attention. It does not seem to the reviewer that every physical cause of asthenopia had been excluded in these cases.

9. Psychic Symptoms in the Upper Air Passages.—Grünwald states that functional and sen-

sory disturbances are met with in the upper air passages that are not dependent on systemic diseases, are not associated with known general neuroses, and are not hysterical, but are of isolated psychic origin. Therapeutic consists of mental treatment with suggestion, sometimes of hypnosis.

10. Pleural Adhesions.—Rothschild says that he has found fibrinolysin to be the sovereign means for the dissolution of pleural adhesions and shrunk-in indurations.

ROUSSKY VRATCH.

August 22, 1909.

1. Comparative Value of the Methods of Surgical Treatment in Cancer of the Uterus, By D. O. OTT.
2. Changes in the Spinal Cord in Cholera, By M. D. KHANUTINA.
3. Transplantation of Muscles in the Repair of the Abdominal Wall, By I. I. GREKOFF.
4. On the Specific Treatment of Tuberculosis by Means of Tuberculin Purum, By F. F. BOEHM.
5. Endotin, or Pure Tuberculin, and its Value in Pulmonary Tuberculosis, By U. I. ZAVOLZHSKYA.
6. On the Influence of Alkaline and Alkaline Earthy Metals upon Hemolysis (*To be Concluded*), By S. M. POGGENPOL.
7. Experiments with Deodorization of the Air by Means of the Electric Ozonator, By N. P. KORNILOVITCH.

1. Operative Treatment of Uterine Cancer.—Ott, in a paper read before the International Medical Congress at Budapest, compares the results of various methods of operation in uterine cancer. There are three principal methods now in use: The removal of the uterus by the radical method, either through the abdomen or through the vagina, and the removal of the uterus in the ordinary (conservative) way through the vagina. Ott compares the results obtained by Wertheim by the method of radical abdominal hysterectomy; the results of Schauta by the radical vaginal method; and finally, his own results with ordinary vaginal hysterectomy. Ott finds that the radical operations are fatal in a much larger proportion of cases than the conservative methods, the mortality being eleven times greater in Wertheim's series than in his own. Five years after operation, Wertheim found 58.6 per cent. of his patients still living, Schauta 38.2 per cent., and Ott 36.2 per cent. On the other hand, the primary mortality in Wertheim's cases was 23.5 per cent., in Schauta's series 19.1 per cent; in Ott's 2.1 per cent., and it may be said to vary inversely as the number of patients remaining alive five years after the operation. There is no question but that the extensive abdominal method presents the greatest possible chances for a radical cure, and that the chances for a cure are about one and a half times greater than in the vaginal method. The differences between the radical vaginal and the conservative vaginal method are smaller. From a practical viewpoint we must remember that the patient subjected to one of the radical methods risks her life at the operation itself, and that this risk is eleven times greater than when the operation is vaginal and conservative. In addition, patients operated upon by the abdominal method are subjected to the risk of hernia and of injuries to the urinary organs. All these disadvantages materially lessen the advantages of radical abdominal operations. Ott favors, therefore, the conservative vaginal method. His figures, however, apply to cancer of the cervix. A comparison of the figures relating to cancer of the uterus proper also are in favor of the conserva-

tive vaginal method. The ideal method is one which combines (1) the large percentage of operable cases amenable to radical vaginal hysterectomy, with (2) the primary mortality of the conservative vaginal method, and (3) the percentage of radical cures obtained with the abdominal method. Yet, for the present, the principle of *ne nocceas* should guide us, and the ordinary vaginal hysterectomy should be the method of choice.

7. **Deodorization of the Air by Means of the Ozonator.**—Kornilovitch describes a method of removing disagreeable odors from the air of dissecting rooms, etc., by means of the ozonator, an apparatus devised by Otto, which resembles in appearance an ordinary "graphophone." It consists of a high tension transformer and a static ozonator in a suitable box on top of which is an electric motor driving a ventilator, furnished with a horn into which ozonized air is driven with great force. The apparatus is intended for use with the 110 volt street current. It rapidly removes penetrating odors, such as those of the dissecting room. It is said that in order to study anatomy one needs the hand of an artist, the patience of an angel, and while Kornilovitch agrees with this, he does not agree with the idea that one also needs for this purpose the "stomach," or more accurately, "the nose, of a pig."

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

September, 1909.

1. Valvular Disease of the Heart with Anomalous Symptoms, By JAMES LITTLE.
2. Hæmophilia, By J. E. M'CAUSLAND.
3. Clinical Reports of the Rotunda Hospital (*Continued*), By E. HASTINGS TWEEDY, J. R. FREELAND and BETHEL A. H. SOLOMONS.

2. **Hæmophilia.**—M'Cauleland remarks that the best treatment consists in careful prophylaxis by avoiding, as far as possible, traumatism of every form, whether accidental or surgical. If any operation becomes absolutely necessary the patient should be placed on a mixture containing calcium chloride for some time in advance. The value of this, however, is doubtful. If hæmorrhage is once established local measures should be adopted as patients are unwilling to submit themselves to a purely expectant treatment. In the only really severe case in which he was associated during actual hæmorrhage, all the various styptics were tried with little or no result. The various preparations of the suprarenal gland have all been warmly praised and just as warmly denounced. They apparently give temporary relief in mild cases, but the bleeding almost always recurs. Calcium chloride applied locally is also of very little use, though perhaps the best routine treatment, for want of a better, is cold compresses soaked in adrenalin and the above salt. The local application of ice sometimes does good, while for bleeding from the gums a paste composed of resin, 3iv; phenol, 3ij; and chloroform, 3ij; may be tightly applied. Fibrin ferment is apparently of no value,* while the application of iron perchloride and similar styptics—such as alum—is in general to be avoided. Gelatin injections have been recommended, but it is questionable if the remedy is worth the risk of the hæmorrhage that might follow the subcutaneous injection. Local applications of gelatin are of no

value. Thyroid extract internally and also dilute sulphuric acid and sodium sulphate are all recommended, but the author has never tried them. When collapse occurs large saline enemata, and even transfusions, may become necessary. Luckily, however, the hæmorrhage often ceases when the patient is apparently on the point of death, and recovery then may be rapid. For the large subcutaneous ecchymoses that occur ichthylol and collodion are very efficacious, while for the joint hæmorrhages absolute rest and the local applications of cold. Opium may be necessary to relieve pain, but it should be given by the mouth.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Twenty-second Annual Meeting, Held in Fort Wayne, Ind., September 21, 22, and 23, 1909.

The President, Dr. WILLIAM HENRY HUMISTON, of Cleveland, O., in the Chair.

The Advantage of the Combined Intraperitoneal and Extraperitoneal Ureterolithotomy for the Removal of Stones from the Lower Ureter.—Dr. ERNST JONAS, of St. Louis, called attention to the respective value of the various methods of examination in the diagnosis of ureteral stone and emphasized the importance of not relying upon any one of these methods, but upon a combination of all of them. He laid stress particularly on repeated examinations of the urine, especially after attacks of kidney colic, thorough physical examination, with repeated vaginal and rectal examinations, good radiographs, and cystoscopic examinations, with catheterism of the ureters.

The proper operation for the removal of stones from the lower ureter (from the brim of the pelvis down to the bladder) must not only offer the simplest technique for the removal of the stones, but must permit an examination into possible ætiological factors. Such factors were adhesions around the appendix, tubes, and ovaries or in connection with retroflexion of the uterus, etc. Such conditions might produce ureteritis or periureteritis or increase the normal bend of the ureter to such a degree that it became kinked. As a result, small kidney stones might be arrested and increased in size in the ureter, or a stone might be primarily formed in the ureter and remain there. The only operation which enabled us to remove these causes for ureteral stone and thus prevent recurrence of the stone was the combined intraperitoneal and extraperitoneal ureterolithotomy. The intraperitoneal steps served for the repair or removal of such pathological conditions, and in addition facilitated the finding of the ureteral stone. The extraperitoneal steps served for the removal of the stone. He advocated, therefore, the combined operation for the removal of stones from the lower ureter.

Dr. JOHN YOUNG BROWN, of St. Louis, stated that in his own work and in watching the work of others he had frequently been impressed with the fact that the appendix might be removed when

macroscopically there was no indication that it was at fault. If one considered the anatomical relationships of the appendix and ureter, as he had been doing in the last year by cross section work and by injecting the appendix with bismuth, doing skiagraphic work in all cases sent to his clinic with a diagnosis of appendicitis, in which he had found stones in the ureter, but the appendix not being diseased and the cause of the trouble, it made a most interesting series of cases. He did not know of any condition that was more difficult to distinguish than certain forms of chronic appendicitis and stones in the ureter. In the last year he had had nine cases, in three of which the diagnosis had been exceedingly difficult. In one case he found a shadow of a supposed stone in the ureter, but it proved to be a concretion in the appendix.

Dr. ALEXANDER HUGH FERGUSON, of Chicago, said that a man presented himself at the Chicago Hospital on September 15, 1909, with the following history: Four years before he had a very severe attack of colic in the left kidney. He was laid up two weeks, and since then had had several minor attacks, referable to the region of the ureter. The patient was a healthy man, fifty-eight years of age. The radiographs showed a stone in the lower end of the left ureter, between one and two inches from the bladder. The sound and cystoscope revealed nothing of the nature of calculus in the bladder. The left ureteral orifice protruded somewhat and was a trifle redder than normal. The patient was given, besides the usual preparation for laparotomy, urotropin and methylene blue. The anæsthetic was ether, given by the drop method. A skin incision was made directly over the external ring, extending upward along the course of the inguinal canal for five inches. The aponeurosis of the external oblique muscle was opened freely, exposing the entire inguinal region and the internal oblique muscle. The internal abdominal ring was enlarged without opening the peritoneal cavity. The transversalis fascia was severed along the entire length of the incision, exposing the deep epigastric vessels, which were ligated and cut. The vas deferens was taken as the guide to the ureter. It was followed by blunt dissection to the base of the bladder. The sigmoid flexure and small bowel were pressed toward the median line by gauze sponges. To obtain sufficient room to admit the hand, the origin of the internal oblique and transversalis muscle was severed from Poupart's ligament for a distance of two inches. This afforded sufficient room to reach and explore the ureter from the pelvic brim to the base of the bladder. The stone was felt in the ureter. An effort was then made to "milk" it into the bladder or toward the kidney. Both these measures proved impossible. An incision was made into the ureter, parallel to its long axis, about an inch below the brim of the pelvis. A stout catgut ligature had been passed around the duct as a guy rope. The ureter was empty. There was no staining of the tissues with methylene blue. It was thus evident that anuria existed in the left kidney. An olive pointed, flexible bougie was passed into the ureter and the stone located. The grating of the probe against the stone could be distinctly heard. Another attempt was made to shove the stone into the bladder, but

it was unsuccessful. Then a long curved alligator jawed forceps was passed into the opening in the ureter. The stone was seized in its blades and carefully extracted. The entire course of the ureter from kidney to bladder was now explored and found perfectly clear. No attempt was made to suture the ureter. The loose tissues on either side of the wound were drawn together, and the same suture caught about a gauze drain, covered with rubber tissue. This drain was brought out at the upper angle of the wound. The cord was left behind the transversalis fascia. This structure, with the transversalis and internal oblique muscles, was sutured to Poupart's ligament. The lower angle of the wound was drained with a cigarette drain, which passed down to the side of the bladder. The external oblique was closed with continuous catgut suture, and the skin with silkworm gut sutures. A catheter was passed into the bladder to keep it empty.

The procedure varied with the side of the body. If the colicky attacks were on the right side, we should think of the appendix, and there was an indication for opening the abdomen. If the attacks were on the left side, and the patient was a man, there was no indication for opening the abdomen to remove such a stone, because it could be done more safely without the complication of an additional cut in the peritonæum. In women these stones could be reached through the bladder, when they were low down, depending upon their size, etc.

Dr. H. W. LONGYEAR, of Detroit, had seen many operations on the appendix that were not justified and were prompted by the pain in the ureter under a mistaken diagnosis.

Dr. MILES F. PORTER, of Fort Wayne, recalled a recent case in which there was typical ureteral colic with anuria. The patient had for years had Bright's disease. In this case, as the subsequent post mortem examination revealed, there was no calculous formation. Moreover, the case illustrated the value of the skiagraph. The skiagram showed no ureteral calculus.

Dr. C. C. FREDERICK, of Buffalo, said there was no question but that there were many cases of pain in the right ureter for which the appendix in the past had been removed. He had seen a number of cases of this kind in his own practice as well as in that of others, and he had been forced during the last three or four years to a realization of the fact that pain upon the right side on pressure deep down over McBurney's point did not always mean that a patient had chronic appendicitis, and he believed in many instances the trouble was in the ureter.

Dr. M. I. ROSENTHAL, of Fort Wayne, said that some four or five years ago he read a paper in which he reported a case of ureteral stone complicating appendicitis. Since then he had been careful to investigate the right ureter in operations for appendicitis, and he had not met with another such case. This would indicate that this complication was not frequent, although it did occur.

Dr. HUGO O. PANTZER, of Indianapolis, stated that in operating in a case of gangrenous cholecystitis, with a discharge of the contents of the gallbladder into the peritoneal cavity, he was led to examine lower down and found at the bifurcation of the abdominal aorta a number of stones which were hard

and fixed to the feel. He removed one of these stones and found it to be a calcareous degeneration of tuberculous glands. The history of the case would seem to show that the patient, a woman, fifty years of age, had in early life had tuberculosis appertaining to this lower part.

Dr. JOHN W. KEEFE, of Providence, said that in one case he introduced a wax tipped catheter and found markings on the wax. The catheter was introduced into the pelvis of the kidney, and on the day the patient was to be operated on he again passed the wax tipped catheter to the kidney, made his incision in the loin, and found the catheter in contact with the stone in the kidney, showing that the first markings on the wax were correct.

Dr. K. I. SANES, of Pittsburgh, cited a case illustrating the difficulty of making a diagnosis between ureteral trouble and appendicitis, saying that this difficulty was met with not only in chronic, but in acute cases of appendicitis.

The Surgical Treatment of Tumors of the Bladder.—Dr. JOHN W. KEEFE, of Providence, said that the surgery of tumors of the urinary bladder was in a transitional state. The last word had not been said. While the perineal and vaginal routes had been abandoned by most surgeons, some now preferred the urethral, others the suprapubic (extraperitoneal), and yet others the abdominal intraperitoneal route or a combination of both. The medical treatment of tumors of the bladder was often prolonged until surgery was of no avail. The suprapubic operation was the method most frequently employed at the present time, although the abdominal intraperitoneal route had many points in its favor. It gave one plenty of room in which to operate, and one could see exactly where to excise or cauterize the growth. The choice of the anæsthetic was important in the removal of bladder tumors, as the patients were often in a debilitated condition from loss of blood, sepsis, or diseased kidneys. Nitrous oxide gas and oxygen were preferable on account of their safety and the nonirritation of the kidneys. The operation might be rapidly performed, and took much less time than it did to describe it.

The author summed up as follows: "1. Cystoscopic examination to determine the site and character of the tumor. 2. Ureteral catheterism. The catheter is left in the ureter as a guide during the operation. 3. The high Trendelenburg position. 4. Opening the abdominal cavity to locate the growth accurately, to aid in separating the peritonæum from the bladder over the site of the tumor, and also to allow plenty of space in which to operate. 5. An assistant locates the growth in the bladder with a cystoscope during the operation. 6. Closure of the peritoneal cavity, the growth now being removed through an extraperitoneal wound. 7. Immediate suture of the bladder. 8. The patient voids urine or is catheterized at frequent intervals."

Dr. FREDERICK had operated in three cases for malignant disease of the bladder. In the first case the tumor was located in the posterior wall of the bladder, in a woman, just back of the trigonum. Following the removal of the tumor she made a good recovery, went on for two or three years, and he supposed was going to get perfectly well. But she had a recurrence to the left side of the original scar.

She did not have a secondary operation, and eventually died of anæmia.

Dr. JONAS said that with the cystoscope we were usually able to settle definitely the size of the tumor, but not its character.

Dr. M. I. ROSENTHAL, of Fort Wayne, related a case of cancer of the uterus which involved the bladder. In this case he did a radical operation for the removal of the uterine cancer, also removing a piece of the bladder. The patient, fifty-eight years of age, was still in fairly good health.

Operative Enlargement of the Pelvis of the Nonpregnant Woman.—Dr. JOHN N. BELL, of Detroit, stated that the operation of pubiotomy as a means of effecting delivery in moderately contracted pelves, where a trial at labor had taken place and efforts to deliver with the forceps had failed, was now an established operation. The writer did not wish to be placed in the position of advocating this procedure in preference to premature delivery at the eighth month, or primary Cæsarean section at term, but for discussion assumed that the operation was a justifiable one, and to that end presented arguments tending to such a conclusion. After pointing out the dangers and disadvantages of the operation, its indications, the author reported a case in which he performed pubiotomy and said the question of the advisability of this procedure was now to be determined.

Dr. E. GUSTAVE ZINKE, of Cincinnati, said he could not see what we could possibly gain by attempting to enlarge the pelvic ring in the nonpregnant state in the hope of facilitating labor at term. The skiagraph presented by the author showed very little space gained in the line of separation of the bone by the pubiotomy that was performed. From what he had learned in listening to this paper, he felt no inducement to adopt the procedure mentioned.

Dr. ALBERT GOLDSPOHN, of Chicago, pointed out that the chief objection to this procedure was that when such a separation in the pelvic ring was made at the time of childbirth, a very much greater separation of this bone occurred during the transit of the child, a separation of two inches occurring in extreme cases.

Dr. RALPH WALDO LOBENSTINE, of New York, could not see any possible advantage in doing this operation, with all due respect to the author. With the test of labor in a pelvis that would allow a baby to go through, with only a gain of one centimetre by pubiotomy, the baby would pass through without such an operation. In this particular type of pelvis, just minor pelvis, the most surprising results occurred without any operation where there was an external conjugate of seventeen centimetres, and the other measurements corresponded, because there was marked flexion of the child's head, whether we were dealing with an exterior or posterior position, this flexion permitting the head to be driven out through the just minor pelvis.

Chylous Cyst of the Iliac Mesentery.—Dr. CHARLES E. CONGDON, of Buffalo had operated upon a boy, five years and eleven months old, making the usual incision as for an appendix operation. On opening the abdomen a tense cystic tumor presented. The tumor resembled an ovarian cyst, but

was more elastic, and it had the color of omentum. On enlarging the abdominal incision, the tumor was found to be the distended iliac mesentery, beginning about eighteen inches above the ileocaecal valve. It was ovoid, with a valley lodging the bowel, and dwindling toward the posterior mesenteric attachment into a wedge shaped separation of the mesenteric layers. The ileum corresponding to the mesenteric cyst was compressed into a white cord, while above it was distended. After incising the cyst, about two quarts of milky fluid gradually drained away, there was a reduction of tension, allowing the vessels of the bowels to fill and the pallor disappear, while the relief of pressure caused the lumen of the bowel to become patulous, and the distention above passed away. The cyst was sutured to the abdominal incision, and was drained by a rubber tube, held in place by a stitch; otherwise the abdominal incision was closed with through and through sutures of silkworm gut. Relief was almost immediate.

Dr. MILES F. PORTER, of Fort Wayne, related a case in which, upon opening the abdomen, he found he had a volvulus to deal with, but in unraveling the volvulus he found it was due to what proved to be chylous cysts of the mesentery. He made a resection of the gut, but the patient died from the continued progress of the peritoneal infection.

Dr. JONAS said, in regard to intestinal obstruction produced by chylous cyst, that he wished to emphasize the importance of not giving medicines with a view to relieving such intestinal obstruction when it was caused by the cysts. We should never try at this stage in surgery to remedy ileus by medicines given by the mouth, as it was impossible to accomplish anything by them in any case of true obstruction.

Dr. FERGUSON had never encountered a case of chylous cyst of the mesentery, and he thought it was well in discussing such papers to point out the relative infrequency of these cases.

The President's Address.—The PRESIDENT discussed the Gilliam operation for retroposition of the uterus, saying he had employed it in a large number of cases with gratifying results.

Some Phases of Puerperal Sepsis.—In this paper Dr. PANTZER reported a number of cases.

The Embryo Abdominal Surgeon with Inadequate Preparation and Knowledge.—Dr. J. HENRY CARSTENS, of Detroit, said that in every large centre, say the county seat, there ought to be a hospital and a surgeon, or surgeons, who had been prepared by a thorough course of hospital training, and they should limit their practice to surgery, and not compete with their colleagues. State boards should take up this question and issue a special license to those who wished to practise special lines of surgery. In conclusion, he would say: "1. Abdominal surgery by embryo surgeons should be prohibited. 2. Thorough preparation in a proper hospital, as an assistant for one year, should be the minimum requirement. 3. Those who want to practise abdominal surgery should furnish evidence of qualification. 4. Nothing herein contained should prevent any general practitioner from doing abdominal surgery in an emergency."

When Shall We Operate for Ruptured Ectopic Gestation?—Dr. R. R. HUGGINS, of Pittsburgh, said it was his habit to delay operation for a few hours when all signs pointed toward a temporary cessation of the hæmorrhage. In the vast majority of instances the hæmorrhage had ceased temporarily when the consultant was called. The length of time which had transpired since the hæmorrhage began varied. The attending physician would usually say that when he first saw the patient she was in a state of collapse, but that now, which was several hours later, there was some improvement. The pulse was slightly better, the air hunger had disappeared, etc. A pulse which was hardly perceptible when he first saw the patient was now easily counted and was of better volume. Reaction had already begun. The formation of a clot in the pelvis had plugged the bleeding point and the force of the blood stream was now so low that for a time at least there was little danger of recurring hæmorrhage. Who could say, and by what means were we to determine, how long this period of apparent rescue from death by Nature's efforts might continue.

Doubtless in many cases hæmorrhage did not recur, but the experience of the writer in the study of his own cases and many that were reported in literature convinced him that some further advance must be made in diagnostic skill before it could be said that hæmorrhage, severe and even fatal, might not recur in a given case. A series of experiments upon fifty dogs showed the coagulating time of the blood to average nearly three minutes and a half. The average time in fifty normal individuals taken by the same instrument was six minutes, forty-five seconds. There was undoubtedly greater protection against continued hæmorrhage in the dog because of the rapid coagulation of the blood. We all knew, owing to the increased blood supply to the pelvic organs during pregnancy, how profusely a small wound made in the uterus or in fact in any part of the pelvis would bleed. Without careful consideration of the demonstrated facts, experiments upon animals in the study of this subject were of no practical importance. It was irrelevant to compare hæmorrhage from other parts of the body with that which occurred from the torn vessels of a congested gravid tube. It was the opinion of most men that in the vast majority of cases the amount of blood thrown into the peritoneal cavity either from abortion or from rupture was not sufficient to produce death at the time of the primary hæmorrhage.

In five or six per cent. of the cases of ruptured tubal gestation sacs the hæmorrhage was tremendous and the symptoms were correspondingly grave. The patient was pulseless and usually restless, with the anxious look so characteristic of extreme hæmorrhage. The blanched mucous membranes and deathly pallor indicated the gravity of the condition and at once suggested the diagnosis.

There must always be grave doubt whether hæmorrhage in the latter class of cases would cease unaided, and it was the consensus that death usually ensued in a few hours if an operation was not performed. The gravity of the symptoms indicated that the hæmorrhage must escape from a large ves-

sel or from an area which was extremely vascular. Recent papers advocating delay in operation had served an important purpose, because they had emphasized the fact that the patient usually rallied from the primary hæmorrhage and that it was unnecessary as a rule to operate while the patient was in extreme shock. It was undoubtedly true that in a large percentage of the cases a few hours could be well spent in allowing the patient to react so that an operation would be attended by less danger. That it could be postponed indefinitely without great risk to the patient had not been true in the experience of the writer. It was unnecessary to dwell on the dangers of peritonitis, intestinal obstruction, and prolonged convalescence, which would result occasionally if the operation was indefinitely postponed.

Dr. LONGYEAR said there should be no hesitation on the part of the surgeon in regard to the necessity of operating immediately in cases of a recent ruptured tubal gestation sac.

Dr. PANTZER stated that, standing as we did in this class of cases oftentimes in the presence of doubt, where life was menaced, we could not decide otherwise than to take the chances with the doubt in favor of an operation.

The PRESIDENT said that this was an important paper, especially after the information had been given out from other sources that in a large majority of cases we could not delay operation and that perhaps an operation might not be necessary. Delay was dangerous. There should be very little trouble in making a diagnosis. If the rupture was sufficient to cause shock, one could not tell whether the shock would be overcome or not, and he did not hesitate to operate in all of these cases whether the patients were in shock or not.

Dr. THOMAS B. NOBLE, of Indianapolis, thought it was bad teaching to advise delay. When Dr. Robb advocated procrastination, he said that some women would die as the result of such teaching.

Dr. A. B. MILLER, of Syracuse, N. Y., said we should not procrastinate in operating in these cases. In over a hundred cases of immediate operation he lost only three patients.

Dr. BROWN had seen quite a number of cases of ectopic gestation, and he had not been able to figure out from this experience why gynecologists should differ as to the proper time to operate. With our modern methods of combating shock, and particularly by the use of salt solution by hypodermoclysis and by the method which Andrews had accentuated in the treatment of gunshot wounds, where the hæmorrhage was severe, viz.: buttonholing the upper abdomen as soon as it was opened, and starting the salt solution to flow immediately upon the opening of the abdomen to combat shock, if not for irrigation, a large majority of these patients could be saved by prompt action.

Dr. GOLDSPOHN said that of something like eighty cases of ectopic gestation that he had dealt with in one way or another, he had only known two patients to die from this affection who were not operated upon.

Dr. FREDERICK had operated in about 130 or 140 cases. Five per cent. of these had been rapidly bleeding cases, and the other ninety-five per cent. were cases in which rupture had taken place and there were symptoms of recurrent bleeding extend-

ing over a period of two, three, four, or five weeks or even six months. He had operated on women who had recurrent hæmorrhages five or six months after the primary rupture. He recalled one case in which hæmorrhage stopped, the woman did not have another rupture, and she was not operated on. All things considered, he was in favor of an early operation. He believed we should insist on stopping hæmorrhage in these cases, as well as bleeding in any other part of the body, namely, by tying the bleeding vessel.

Dr. ROSENTHAL said it had been his practice to operate as soon as the diagnosis was made. In all of the cases of early diagnosis and operation there had been no deaths, but in late operations death occurred in each case.

Dr. ZINKE said it was just as wrong to say that every woman with ectopic gestation must be operated on as it was that every case of this nature did not need an operation. There were patients who recovered without an operation. This should not be forgotten. The members probably knew of instances where an operation had been proposed, with counsel and without counsel, but declined by the family, and the patients had recovered and "had the laugh" on the operators. He agreed with Dr. Robb and said he must protest against operating in every case.

Dr. CARSTENS said that if a woman was suffering from an internal hæmorrhage she ought to be operated upon promptly. He believed in operating in these cases promptly and arresting the hæmorrhage.

(To be concluded.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Biology and its Makers.—With Portraits and Other Illustrations. By WILLIAM A. LOCY, Ph. D., Sc. D., Professor in Northwestern University. New York: Henry Holt & Co., 1908. Pp. xxvi+469.

Though this book was published in 1908, it was only recently sent to us. It is a handsome book and a very valuable one. We must add Professor Locy to the list of the very few scientific men who possess the art of writing on recondite subjects in a way to make themselves easily understood by readers whose education has been only of a general nature. In the form of entertaining biographical sketches he contrives to impart a very fair insight into the rudiments of biology, and his style is charming. We suppose that it is by inadvertence that he says of Harvey (on page 47): "But he did not actually see the blood moving from veins to arteries, and he knew not of the capillaries." And the slip is repeated in the next sentence, where also there is such a misuse of tenses as is getting to be too common in writing that is otherwise excellent. It is gratifying to be reminded that so many of the great investigators whose lives are sketched in the book were medical men, and their portraits are valuable additions to the text. Some of them are very rare.

Practical Gynecology. A Manual for Nurses and Students.

By NETTA STEWART, Sister in the Gynecological Wards of the Royal Infirmary, Edinburgh, and JAMES YOUNG, M. B., F. R. C. S. E., Clinical Tutor in Surgery and late Resident Gynecologist. Royal Infirmary; Physician to Lauriston Pre-Maternity Home, Edinburgh. Numerous Illustrations and Plates. New York: William Wood & Co., 1909. Pp. xvi-327.

A conglomerate book of this character is most difficult to write. There is too much knowledge for the nurse, and much which the physician or medical student does not require. It can hardly be said that the combination has been successful in this case. If the portions which refer exclusively to the work of the physician and the gynecologist were omitted, the book would serve as an excellent manual for nurses, and this is the suggestion which we would make.

Bier's Hyperemic Treatment in Surgery, Medicine, and the Specialties. A Manual of its Practical Application.

By WILLY MEYER, M. D., Professor of Surgery at the New York Postgraduate Medical School and Hospital, etc., and Professor Dr. VICTOR SCHMIEDEN, Assistant to Professor Bier, University of Berlin, Germany. Second Revised Edition, Enlarged. Illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 280. (Price, \$3.).

In our review of the first edition of this book we remarked: "The profession will certainly welcome this addition to our literature, . . . and will now have the means of trying this method of treatment, and may accept or decline it." That inside of ten months it has become necessary to publish a second edition is proof that the book was very timely. Several changes have been made, brief histories of interesting cases have been added, and a catalogue of the literature has been collected. We congratulate the authors on their success.

Severest Anæmias: their Infective Nature, Diagnosis, and

Treatment. By WILLIAM HUNTER, M. D., Edin., Fellow of the Royal College of Physicians of London; Physician and Lecturer on General Pathology and Morbid Anatomy, Charing Cross Hospital; Physician to the London Fever Hospital. Volume I, with Historical Schemes, Charts, and Plates. London: Macmillan & Co., Limited, 1909.

The work of Dr. Hunter is devoted to an exposition of the author's views on the nature of the disease commonly known as progressive pernicious anæmia, but which he prefers to call Addisonian anæmia.

Dr. Hunter believes that it is a specific infective disease caused by an infection of the gastrointestinal tract and characterized by glossitis, gastritis, and enteritis, more particularly by the former. The infection of these organs, which is due to a streptococcus, produces a marked hæmolytic, which takes place particularly in the portal system and which produces the symptoms and the pathological changes in the blood and the liver and other organs, the latter changes being especially the deposition of iron pigment in these organs.

Dr. Hunter has made an exhaustive study of the literature of this disease, our conception of which, as he rightly maintains, is and has been much complicated by the developmental period through which the ideas concerning it have been passing. He maintains, and again rightly, that many and diverse anæmic states have been grouped together by various writers and given the title progressive pernicious anæmia. This fact he deplors, and again

rightly. He deprecates the classification of anæmias into the primary anæmias, those for which no ætiological factor can be found, and secondary, those for which a definite ætiological factor can be found. In this position we cannot agree with him. We think this classification a valuable one, particularly in the absence of definite ætiological knowledge of certain cases. He minimizes the value of hæmatological studies, apparently because these studies are responsible for the classification in the same group of anæmic conditions of widely divergent cause, for example, the anæmia attendant upon infection with the broad tapeworm, *Dibothriocephalus latus* and his own Addisonian anæmia.

We think that the anæmias are of two distinct classes, as indicated by pathological changes in the blood. 1. Those with a low color index and no very great change in the leucocyte formula and with changes in the erythrocytes of a severity varying with the intensity of the ætiological factor, the chloroanæmias. 2. Those with a high color index, a diminution of the polymorphonuclear elements, an increase of the uninuclear elements, and great changes in the erythrocytes—the anæmias of the pernicious type—which are in all probability dependent upon hæmolytic of varying cause. We agree with the author that the classification into normoblastic and megaloblastic anæmias should be abandoned. So far as a definite ætiology can be shown for an anæmia, either of these groups, so far may the various members be removed from the primary and placed in the secondary group. The French observers particularly have maintained that there is no such thing as chlorosis as a primary disease; that when the blood picture is that of a chloroanæmia a careful examination of the patient will show the presence of an incipient tuberculous lesion, a beginning nephritis, or some other beginning organic disease. There are, however, cases in which the most minute study of the patient fails to reveal any such condition, and these cases are rightly called chlorosis. On the other hand, there are cases of anæmia of the pernicious type in which the most painstaking examinations have failed to discover the ætiological factor; such cases may properly be called primary anæmias, progressive pernicious anæmias, or Addisonian anæmias, depending upon the nosological proclivities of the diagnostician.

As between the name progressive pernicious anæmia and Addisonian anæmia, we confess that we prefer the former, because of the undesirability of further complicating medical nomenclature by proper names. We are in hearty accord with the attempt of Dr. Hunter to demonstrate a definite cause for a group of these anæmias in an infection of the alimentary tract with attendant hæmolytic, and we predict that a careful study of individual cases will show many cases of pernicious anæmia which are secondary to such an infection. Consequently we may soon be able to say that all cases of this sort are secondary and not primary. Careful study in the future from the viewpoint so ably indicated by the author will undoubtedly discover his ideas to be well founded. In regard to the septic anæmias, upon which Dr. Hunter lays so much stress, as being similar to his Addisonian anæmia,

we are of the opinion that these cases have such a distinct pathology, an increase of the polymorphonuclear neutrophile leucocytes, that they may be readily separated from anæmias of the pernicious type.

The study of the literature is admirable and exhaustive, the evidences of original work are of the first order, and we shall look forward with pleasure to the appearance of the second volume of the work.

Vaccine and Serum Therapy. Including also a Study of Infections, Theories of Immunity, Opsonins, and the Opsonic Index. By EDWIN HENRY SCHORER, B. S., M. D., Assistant Professor of Parasitology and Hygiene, University of Missouri, etc. Illustrated. St. Louis: C. V. Mosby Medical Book & Publishing Co., 1909. Pp. 131.

This book gives an excellent account of our present knowledge concerning bacterial vaccine therapy and of the opsonic index as a guide in such treatment. The book opens with a short discussion of infection and immunity, and gives brief though clear digests of the several theories which have been devised to explain the observed facts. The opsonin theory is explained in sixteen pages, following which is an extremely judicious chapter containing criticisms of Wright's opsonic index determinations. The second half of the book deals with vaccines and serum therapy, and contains a great deal of valuable information. Altogether, this book can be cordially recommended to practising physicians as a clear, impartial, and reliable guide in carrying out treatment with bacterial vaccines or specific immune sera. The book is marred by a number of typographical errors, which, we trust, the author may soon have an opportunity of correcting in a second edition.

Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Für Aerzte und Studierende. Von Dr. BANDELIER, Oberarzt der Dr. Weicker'schen Lungenheilstation in Göbersdorf, und Dr. ROEPKE, dirigierendem Arzte der Eisenbahnheilstätte in Melsungen. 3. erweiterte und verbesserte Auflage. Mit einem Vorwort von Winkl. Gehl. Rat Prof. Dr. R. Koch, Excellenz. Mit 19 Temperaturkurven auf 5 lithographischen Tafeln, 1 farbige lithographische Tafel und 4 Textabbildungen. Würzburg: Curt Kabitzsch, 1909. Pp. xi-221. (Price, Mk. 6.)

This is an excellent guide for every one interested in tuberculin treatment, and it has already established itself as an authority. To a large extent this is due, we believe, to the fact that the material is not merely collated, but is carefully analyzed in the light of the authors' vast experience. The arrangement of the material is the same as in the preceding editions, and is clear and logical. Considerable space is given to the newer methods of tuberculin diagnosis, and colored plates are added to show the appearance of the various cutaneous and conjunctival reactions. We have nothing but praise for this volume, and commend it heartily to the medical profession.

Les opsonines et la thérapeutique opsonisante par les vaccins de Wright. Par le Dr. RENÉ GAULTIER, chef de clinique à la Faculté de médecine de Paris, etc. Paris: J. B. Baillière et fils, 1909. Pp. 76. (Price, 1.50 f.)

This is a very brief account of Wright's work with opsonins and bacterial vaccines, and may serve to instruct those absolutely unacquainted with that investigator's theories. No attempt is made to discuss the merits of the opsonic index, and the

reader is given the impression that the results obtained with bacterial vaccine treatment, guided by determinations of the opsonic index, leaving nothing to be desired.

Erholungs- und Kurorte nach ihren Höhenlagen. Zusammengestellt von LASIRFA. Berlin: August Hirschwald, 1909. Pp. 66.

This is a very good list of European spas according to the altitude the place is located in. The places on the Atlantic Ocean are given first, followed by watering places of the Mediterranean Sea, the Adriatic, the North, and the Baltic Seas. These places are arranged alphabetically. Then comes the list of spas with elevation, Albano, Italy, with twelve metres altitude, taking the first place, while Riffelalp, Switzerland, with 2,227 metres, is the last name of the list. Added to the name of the spa is a very short description mentioning the country, situation, properties of the waters, and the special treatment indicated.

Nouveau traité de chirurgie. XII. Maladies des veines et des lymphatiques. Par PAUL LAUNAY, chirurgien des hôpitaux de Paris, et HENRI BRODIER, ancien chef de clinique chirurgicale de la Faculté de médecine. Avec 39 figures intercalées dans le texte. Paris: J. B. Baillière et fils, 1909. Pp. 266.

This book is divided into two parts, one written by M. Launay, the other by M. Brodier. Paul Launay, in sixty-two pages, describes the traumatic lesions of the veins. He speaks of the treatment of hæmorrhages due to varices, and their complications. The different forms of phlebitis and their treatment are thoroughly gone into, also the prophylaxis of embolism and pyæmia. Henri Brodier is the author of the part on diseases of the lymphatic vessels, which occupies 262 pages. We find here treated of infection of the lymphatic system; lymphangitis with dermatitis and phlegmons; affections of the vessels proper, of the thoracic duct, and of the lymphatic ganglia; and lymphangiectasis.

It is a thoroughly scientific work, giving a few but very good illustrations, thus avoiding the present style of so many medical books with innumerable pictures, more or less useful, usually less.

MEDICOLITERARY NOTES.

There has been an awful fuss in the office of the *Ladies' Home Journal*, as disclosed in the October number. Many ladies have written objecting to the pictures of corsets, because men, young men especially, sometimes read the periodical. The publishers have decided to continue the awful pictures, but not to disclose any more of the "nood figger," as advertisers usually call it, than is necessary. We think that, in a properly conducted home, no young man would dream of looking at this paper except in the presence of his father or an experienced uncle. In reply to the young man's timid questionings, we believe it the duty of parent or guardian to disclose what is necessary as to this sacred secret of womanhood, even going so far as to tell him that his mother used to wear a corset. Many a future home would be made the happier by such discreet revelation, the expectant husband learning that he may be called upon some day to cinch up his bride. Curiosity on this subject is perfectly wholesome

and natural to the young male mind, but it should be satisfied by a solemn elderly relative and not left to the irreverent and possibly inaccurate comments of the youth's companions made in a billiard room or similar unsuitable place.

Before us lies the issue of the *Survey* for October 2d. Who would guess from the name that it was a journal of constructive philanthropy? We commend the publication to all who are interested in their neighbors, the poor: it is a near sighted citizen who cannot see that poverty and disease strike directly at him and his children. To our mind, the saying "The poor ye have always with you" was not merely a curse to be accepted with a sigh of resignation, but a terrible dictum of contemptuous irony, bitterly denunciatory of ignorance and selfishness and intended to stir up a complacent audience to take an obvious first step towards righteousness.

In the latest *Harper's* Rudyard Kipling concludes his ghost story, *The House Surgeon*, in a most satisfactory manner. Mr. Kipling has lately acquired a large medical and surgical vocabulary which he uses with the fluent accuracy that distinguished, we are told, his employment of the respective argots of military matters and machinery. Well may medical lovers of good literature rejoice that it is so, for it has led to the writing of a Puck of Pook's Hill story for the October *Delineator*, *A Doctor of Medicine*. Despite the croakers who aver there is no longer a Kipling, we hail this polished mosaic of science, astrology, history, pathos, humor, and art as Kiplingese of the finest quality. It is a tale of the celebrated Nick Culpeper. We do not know what American children make of these Pook's Hill stories, but to well to do English youngsters, who can hardly wander anywhere on their tight little island without stumbling over a royal or military relic, they must be "ripping, no end." However, all doctors, of whatever nationality, will enjoy Culpeper's mastery of the plague by destroying the rats, no less than the reasoning by which he is led to his therapeutic methods.

Our esteemed colleague, Dr. Rast, the creation of James Oppenheim, makes an October reappearance, this time in *Everybody's*, in a story called *The Family*. It is a strong and pathetic sketch of the family physician in a rôle referred to lately in our editorial columns as that of comforter. Mr. Oppenheim's grasp of the Oriental temperament of our lower east side seems to be sure, and the somewhat unusual relations of the physician of like antecedents with his patients may well be drawn from life.

The Beast and the Jungle, by Judge Ben B. Lindsey, of Denver, in the same magazine, promises to make some sensation before it is concluded; we consider it the duty of every physician to read this article, which treats, among others, of things he has long and vainly combated.

Actresses are undoubtedly very charming people, and we are glad to see that the drama is beginning to excite deserved attention in our land, but it is the least bit monotonous to see the mummer's physiognomy staring at us from the page of every magazine and to have to pass over several pages of gush about plays that do not deserve the mental effort necessary to pen a condemnation. The October

American, a magazine we have always liked, is the latest to join the chorus apparently in training by the theatrical trust. Among things in this still admirable publication that our friends will probably like are: *The Confidences of a "Psychical Researcher,"* by William James; a short sketch of Dr. William Osler; the conclusion of the delightful serial, *Margarita's Soul*; and the sensational and disquieting *Barbarous Mexico*.

After a sigh of envy at the happy lot of Mr. Theodore Roosevelt, as described in his *African Game Trails*, that begins in the October *Scribner's*, our colleagues whose hunts are confined mainly to intestinal fauna and flora will probably read it with interest and admire the good pictures. A thoughtful article, meriting the attention of well to do parents of youth, is *Are We Spoiling Our Boys Who Have the Best Chances in Life?* by Paul Van Dyke. An editorial treatise of the bad manners of New York "at every ganglionic centre of civic circulation," a very tangible subject.

Sir Arthur Conan Doyle's yarns have always been full of clashing swords or thudding gloves; in the October *Strand* he unveils in *Some Recollections of Sport* how he acquired knowledge of these matters from personal experience. As sure evidence of approaching middle age as Sir Arthur's acknowledgment is a hitherto undeveloped tendency to moralize.

We think it a pity that such a master of the short story as W. W. Jacobs is so little known in this country; *Sentence Deferred* is his entertaining contribution to this number.

The October *World's Work* contains portraits of our colleagues, Dr. Frederick Van Eeden, the sociologist, and Dr. Frederick A. Cook, of arctic fame; *How I Got Well*, by The Patient, a story of recovery from tuberculosis; an editorial on the Enemies of the Pure Food Law; *The Flying Wonders at Rheims*, an account of the most astonishing aerial phenomena seen from the historic town since the jockeyday brought back the cardinal's ring; and many other things stranger than fiction.

Robert W. Guiler, M. D., writes in the October *National Magazine* on *The Age of Discovery*. We are introduced to a very refined and blithesome hospital where the matron is a refined lady with a cheerful smile, the nurses are refined young ladies with cheerful smiles, a refined, scholarly medical man injects something into a guinea pig, and an orthopedic patient, not specified as refined, still displays the cheerful smile. There is a horse, too, being tapped for serum, which is neither refined nor smiling cheerfully. If some of this general ecstasy and refinement had been edited out, the writer's plea for a common sense attitude on the part of the public toward harmless and necessary vivisection would have been made stronger.

Those who wish to be in a position to understand the arguments when Dr. Cook and Mr. Peary begin to exhibit their proofs of having been at the North Pole may read to advantage *How an Explorer Can Know When He Reaches the Pole*, by Anthony Fiala, in the October *Travel Magazine*.

The editor of the *Century* thinks, in the October number, that much of Oliver Wendell Holmes's verse will soon be forgotten and his prose even

more thoroughly supplanted than it now is; but that he was truly a poet and that some of the finer fruits of his imagination will be kept always in the anthology of worthy English verse. A beautiful decorative drawing by Charles A. Winter forms the frontispiece of this number, and there are, as usual, other beautiful pictures.

Machaon and Podalirius, sons of Æsculapius, were the first army surgeons; the latter is said to have invented bleeding. At the siege of Troy their surgical skill was so highly thought of that they were excused from fighting. Machaon seems to have invented the cocktail; for once, when wounded in the shoulder, before allowing any treatment to be undertaken, he hastily mixed together wine, flour, and cheese, and drained off the mixture, probably to the health of Nestor, who had brought him back to the tent.

NEW PUBLICATIONS.

Lie, H. P.—II. Internationale wissenschaftliche Lepra Konferenz abgehalten vom 16 bis 19 August 1909, in Bergen, Norwegen. Mitteilungen und Verhandlungen. I. Band. Mit 2 Porträts und 3 Karten. London: Williams & Norgate; Leipzig: Johann Ambrosius Barth; Paris: Masson et cie; New York: Lemcke & Buechner, 1909. Pp. 153.

California Eclectic Medical College. Thirty-first Annual Commencement. Session, 1909-1910. Pp. 32.

Schall, Hermann, and Heisler, August.—Schemata zum Einzeichnen von Kurven bei Stoffwechselkrankheiten. Würzburg: A. Stuber, 1909.

Schmidt, C. L. A.—University of California Publications in Physiology. Table of H and OH Concentrations Corresponding to Electromotive Forces Determined in Gas Chain Measurements. Berkeley: The University Press, 1909. Pp. 113.

Stevens, A. A.—Modern Materia Medica and Therapeutics. Fifth Edition, Thoroughly Revised, in Conformity with the Eighth Revision (1905) of the United States Pharmacopoeia. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 675.

Coblentz, Virgil.—A Manual of Volumetric Analysis. Second Edition, Revised, Completely Reconstructed, and Enlarged, by Anton Vorisek. With 37 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. viii-234. (Price, \$1.75).

Bacon, Gorham.—A Manual of Otolgry. With an Introductory Chapter by Clarence John Blake, M. D., Professor of Otolgry in Harvard University. Fifth Edition, Revised and Enlarged. With 147 Illustrations and 12 Plates. New York and Philadelphia: Lea & Febiger, 1909. Pp. 508.

Starr, M. Allen.—Organic and Functional Nervous Diseases. A Textbook of Neurology. Third Edition, Thoroughly Revised. Illustrated with 300 Engravings in the Text and 29 Plates in Colors and Monochrome. New York and Philadelphia: Lea & Febiger, 1909. Pp. ix-911.

Ott, Isaac.—The Parathyroid Glands from a Physiological and Pathological Standpoint. Pp. 34.

Pereira, Antonio Pacifico.—As Mofestias Infectuosas na Bahia. Bahia: Lithotypographia Almeida, 1908. Pp. 68.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending October 8, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
District of Columbia—Washington.	Sept. 18-25.	2	
Georgia—Macon.	Sept. 15-21.	1	
Illinois—General.	Aug. 1-31.	1	

Places.	Date.	Cases.	Deaths.
Illinois—Danville.	Sept. 18-25.	1	
Illinois—Peoria.	Aug. 1-31.	9	
North Dakota—General.	July 1-31.	27	
Texas—General.	July 1-31.	92	
Texas—San Antonio.	July 1-31.	2	
Utah—General.	Aug. 1-31.	101	
Utah—Salt Lake City.	Aug. 1-31.	17	
Washington—Seattle.	July 1-31.	2	

<i>Smallpox—Foreign.</i>			
Chile—Valparaiso.	Aug. 21-28.	Present	
China—Hankow.	Aug. 18-25.	1	
Egypt—Cairo.	Aug. 26-Sept. 2.	1	1
France—Paris.	Sept. 4-11.	1	
India—Bombay.	Aug. 31.	6	
India—Madras.	Aug. 18-20.	1	
Italy—General.	Sept. 5-12.	7	5
Java—Batavia.	Aug. 14-21.	2	
Mexico—Mexico.	Sept. 12-19.	2	
Persia—Mazanderan.	July 1-31.	2	Epidemic
Portugal—Lisbon.	Sept. 4-11.	1	
Russia—Moscow.	Aug. 28-Sept. 4.	7	2
Russia—Riga.	Sept. 4-11.	2	8
Russia—St. Petersburg.	Aug. 21-Sept. 4.	25	8
Spain—Barcelona.	Aug. 28-Sept. 11.	1	
Spain—Valencia.	Aug. 28-Sept. 11.	1	
Spain—Vigo.	Sept. 4-11.	1	

<i>Yellow Fever—Foreign.</i>			
Brazil—Para.	Aug. 28-Sept. 7.	9	6

<i>Cholera—Insular.</i>			
Philippine Islands—Manila.	Aug. 14-28.	3	2
Philippine Islands—Provinces.	Aug. 14-28.	342	249

<i>Cholera—Foreign.</i>			
China—Amoy.	Aug. 14-28.	39	
China—Hankow.	Aug. 18-25.	1	
India—Bombay.	Aug. 18-31.	9	
India—Calcutta.	Aug. 7-21.	2	
India—Madras.	Aug. 14-20.	1	
India—Rangoon.	Aug. 14-20.	6	
Japan—Karatsumi.	Sept. 1-2.	2	
Japan—Mitajiri.	Sept. 1-2.	2	
Korea.	Sept. 2.	2	Epidemic
Manchuria—Liaoyang.	Aug. 10-14.	1	
Manchuria—Mukden.	Aug. 10-14.	1	
Manchuria—Tashichiao.	Aug. 10-14.	1	
Manchuria—Yinkow.	Aug. 10-14.	6	
Russia—General.	Sept. 3-10.	716	257
Russia—General.	Sept. 11-17.	940	251
Russia—St. Petersburg.	Sept. 3-10.	167	45
Russia—St. Petersburg.	Sept. 11-17.	246	87

<i>Plague—Foreign.</i>			
Chile—Iquique.	Aug. 18-Sept. 5.	6	
China—Amoy.	Aug. 14-28.	1	1
China—Hongkong.	Aug. 14-21.	1	
India—General.	Aug. 14-21.	1,821	1,376
India—Bombay.	Aug. 18-31.	64	
India—Calcutta.	Aug. 7-21.	31	
India—Rangoon.	Aug. 14-21.	23	
Japan—Kobe.	Aug. 26-Sept. 4.	5	
Japan—General.	Aug. 28-Sept. 4.	13	
Zanzibar—Zanzibar.	July 23-24.	2	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 6, 1909:

ALTREE, G. H., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 2, 1909, without pay.

ANDERSON, JOHN F., Passed Assistant Surgeon. Detailed as director, Hygienic Laboratory, to take effect October 1, 1909.

BANKS, CHARLES E., Surgeon. Granted one day's leave of absence, October 3, 1909.

BIERMAN, C. H., Pharmacist. Granted thirty days' leave of absence from September 30, 1909.

BILLINGS, W. C., Passed Assistant Surgeon. Granted five days' leave of absence from October 6, 1909.

BOGGESS, J. S., Passed Assistant Surgeon. Leave of absence for seven days from September 24, 1909, amended to read six days from September 24, 1909.

CLEBORNE, A. B., Acting Assistant Surgeon. Granted seven days' leave of absence from October 2, 1909, under paragraph 210, Service Regulations.

DEERHAKE, WM. A., Acting Assistant Surgeon. Granted one day's leave of absence in September, 1909, under paragraph 210, Service Regulations.

ELDRIDGE, M. B., Pharmacist. Granted twenty-four days' leave of absence from September 28, 1909.

GLEASON, C. M., Acting Assistant Surgeon. Granted fifteen days' leave of absence from October 1, 1909.

GREGORY, G. A., Acting Assistant Surgeon. Granted ten days' leave of absence from October 1, 1909.

- GUTHRIE, M. C., Passed Assistant Surgeon. Granted thirty days' leave of absence from October 10, 1909.
- HOLT, J. M., Passed Assistant Surgeon. Granted six days' leave of absence from October 4, 1909.
- HUME, LEA, Acting Assistant Surgeon. Granted ten days' leave of absence from September 30, 1909.
- HUNTER, W. R., Acting Assistant Surgeon. Granted fourteen days' leave of absence from October 5, 1909.
- LYON, R. H., Assistant Surgeon. Granted two days' leave of absence in September, 1909, under paragraph 191, Service Regulations.
- MACCAFFRY, W. B., Acting Assistant Surgeon. Granted two days' leave of absence in September, 1909, under paragraph 210, Service Regulations.
- ONTF, B., Acting Assistant Surgeon. Granted two days' leave of absence from September 21, 1909, under paragraph 210, Service Regulations.
- ROGERS, EDWARD, Pharmacist. Granted three days' leave of absence from September 23, 1909, under paragraph 210, Service Regulations.
- ROSENAU, M. J., Surgeon. Granted two days' leave of absence from September 29, 1909, without pay; relieved as director, Hygienic Laboratory, to take effect October 1, 1909.
- SINCLAIR, A. N., Acting Assistant Surgeon. Granted fifteen days' leave of absence from September 5, 1909.
- SWEET, E. A., Passed Assistant Surgeon. Leave of absence granted September 9, 1909, for twenty-one days, amended to read twenty-two days from September 9, 1909.
- WALKER, R. T., Acting Assistant Surgeon. Granted nine days' leave of absence from October 18, 1909.
- WETMORE, W. O., Acting Assistant Surgeon. Granted one day's leave of absence, September 20, 1909, under paragraph 210, Service Regulations.
- WOOD, C. E., Assistant Surgeon. Granted sixteen days' leave of absence from October 5, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 9, 1909:

- CHURCH, J. R., Major, Medical Corps. Granted leave of absence for one month.
- DEWITT, WALLACE, Captain, Medical Corps. Ordered for examination at Washington, D. C., instead of San Francisco, Cal.
- DUNCAN, W. A., Captain, Medical Corps. Granted an extension of ten days to his leave of absence.
- ENDERS, W. J., First Lieutenant, Medical Corps. Relieved at Fort McKinley, Maine, and ordered to Fort Greble, R. I., for duty.
- FOLEY, T. M., First Lieutenant, Medical Reserve Corps. Granted leave of absence for fourteen days.
- GIBSON, P. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Yellowstone, Wyo., for duty.
- GRUBBS, R. B., Captain, Medical Corps. Granted leave of absence for one month.
- HEREFORD, J. R., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month and seven days.
- HOLLAND, J. H., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Barrancas, Fla., for duty.
- PARSON, J. A., First Lieutenant, Medical Reserve Corps. Relieved at Fort Yellowstone, Wyo., and ordered to proceed to his home.
- PENROSE, T. W., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Plattsburg, Bks. N. Y., for duty.
- RAYMOND, H. I., Lieutenant Colonel, Medical Corps. Granted an extension of one month to his leave of absence.
- SANFORD, J. L., First Lieutenant, Medical Reserve Corps. Relieved at Fort Barrancas, Fla., for duty.
- SMART, W. M., Captain, Medical Corps. Granted leave of absence for four months, when relieved from duty in the Philippines Division.
- STALLMAN, G. P., First Lieutenant, Medical Reserve Corps. Granted an extension of fifteen days to his leave of absence.
- WALKUP, J. O., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Snelling, Minn., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 9, 1909:

- ALLEN, A. H., Assistant Surgeon. Ordered to the Naval Recruiting Station, Pittsburgh, Pa.
- CURLER, J. T., Pharmacist. Discharged from treatment at the Army and Navy Hospital, Hot Springs, Ark., and ordered to the Naval Academy.
- EXTINGE, E. O. J., Passed Assistant Surgeon. Detached from the *Wolverine* and ordered to the Naval Hospital, Norfolk, Va.
- RAISON, T. W., Assistant Surgeon. Ordered to duty at the Naval Hospital, Navy Yard, New York, N. Y.
- REED, T. W., Assistant Surgeon. Ordered to the *Wolverine*.
- SHIPP, E. M., Surgeon. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to duty at the Naval Hospital, Philadelphia, Pa.
- SMITH, H. W., Passed Assistant Surgeon. Detached from the Navy Yard, Boston, Mass., and ordered to duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.
- TOLFREE, H. M., Passed Assistant Surgeon. Ordered to the Naval Magazine, Iona Island, N. Y.

Births, Marriages, and Deaths.

Married.

JURESCO-PEREYRA.—In Philadelphia, on Thursday, September 30th, Dr. Nathaniel Juresco and Miss Isabel R. Pereyra.

KELLER-WALTON.—In Philadelphia, on Monday, September 27th, Dr. William A. T. Keller, of Stroudsburg, Pa., and Miss Sallie A. Walton.

MCGINLEY-POWELL.—In Boston, on Saturday, October 3d, Dr. M. C. McGinley, of Philadelphia, and Miss Mabel Powell.

SHEPHERD-SUTHERLAND.—In Toronto, Canada, on Friday, September 17th, Dr. William Gordon Shepherd, of Lynn, Mass., and Miss Jean Sutherland.

Died.

BEAMAN.—In Ithaca, New York, on Wednesday, October 6th, Dr. Charles P. Beaman, aged forty-nine years.

CHARTER.—In West Union, West Virginia, on Wednesday, September 29th, Dr. William Charter, aged ninety-four years.

CLEBORNE.—In Washington, D. C., on Saturday, October 2d, Rear Admiral Christopher James Cleborne, medical director, United States Navy, retired, aged seventy years.

DAVIDSON.—In Shickshinny, Pennsylvania, on Friday, October 1st, Dr. Paul Davidson, aged thirty years.

DE CUNTO.—In New York, on Wednesday, October 6th, Dr. Pasquale de Cunto, of Denver, Colorado, aged forty-three years.

DENENHOLZ.—In New York, on Saturday, October 9th, Ida Denenholz, wife of Dr. Aaron Denenholz.

FERGUSON.—In Kemptville, Ontario, Canada, on Thursday, September 30th, Dr. Charles F. Ferguson, aged seventy-four years.

GARRISON.—In West Collingswood, New Jersey, on Monday, October 4th, Dr. Daniel Garrison, aged sixty-three years.

HAMILTON.—In Batavia, New York, on Tuesday, October 5th, Dr. David Hamilton, aged seventy years.

HAWKINS.—In Hoboken, New Jersey, on Sunday, October 3d, Dr. Charles Oscar Hawkins.

IRVIN.—In Des Moines, Iowa, on Saturday, September 25th, Dr. John F. Irvin, aged eighty years.

MCCLURE.—In Chicago, on Wednesday, October 6th, Dr. James McClure, of Marietta, Ohio.

MORRISON.—In Sheridan, Pennsylvania, on Sunday, October 3d, Dr. Robert Morrison, aged fifty-four years.

POITRAS.—In Brockton, Massachusetts, on Friday, October 1st, Dr. Joseph F. X. Poitras, aged forty-three years.

QUIRK.—In Chicago, on Monday, October 4th, Dr. John Joseph Quirk.

SARGENT.—In Tyrone, Schuyler County, New York, on Monday, October 4th, Dr. Joseph B. Sargent, aged fifty-eight years.

STERNER.—In Philadelphia, on Thursday, September 30th, Dr. Harvey Sterner, aged forty-eight years.

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WHOLE No. 1612.

Original Communications.

MUNICIPAL CAMPAIGNS FOR REDUCING INFANT MORTALITY.*

By S. W. NEWMAYER, M. D.,
Philadelphia.

While there have been stirrings of interest on the subject of infant mortality in the past ten years in scattered points of this and foreign countries, there remains the true awakening to the magnitude and seriousness of this most important public problem. Every contagious disease and even obscure tropical diseases have received their quota of consideration from the government, the state, and the municipality, but except in the past year little attention has been given to the preventable deaths of infants. Any of the contagious diseases is but a pigmy against this giant destroyer, and our supposed archenemy, tuberculosis, sinks into insignificance, when the true facts and figures of infant mortality are unfurled. Tuberculosis at all ages in the United States claims annually 150,000 victims, and in the extreme narrow margin of only the first year of life about 400,000 infants are sacrificed annually. This conservative estimate is about fifteen per cent. of those born. With these awe inspiring figures before me, I attempted to find out the truth of the statements; what has been done by the medical profession, the health departments, and the philanthropists to counteract this death rate; what methods have been employed and with what success; and by a close study of this direct information I have tried to formulate plans that may assist a practical campaign. With these objects in view I communicated with the health authorities, organizations, and individuals throughout the United States, who were interested in this subject, and also to the health officers of cities and towns of Pennsylvania, I sent a series of questions pertaining to infant mortality, and the methods used by them to combat this death rate.

I regret that the short time allotted to the reading of this paper necessitates my greatly condensing the subject, and even only calling attention to facts that should receive closer study and considerable discussion. If, however, I succeed in arousing among the members of this society an interest that is well deserved on this subject of infant mortality, so that the State of Pennsylvania will not come trailing in ten years hence, but before many days will occupy the foremost rank of all States in an

intelligent practical campaign for reducing infant mortality, then I will feel that this paper has accomplished its object.

I desire to express my appreciation for the courtesies and aid given to me by the many health officers, organizations, and individuals. Among these I would mention our own commissioner of health, Dr. Samuel G. Dixon and his staff; our director, Dr. Joseph S. Neff; the members of the New York Association for Improving the Condition of the Poor; the able, unselfish editor of the *Delineator*, Miss Edith Howe; Mr. R. H. Bruere, and Dr. S. J. Baker, of New York, and Dr. Gerstenberger, of Cleveland.

DEATH RATE PER 1,000 BIRTHS.

Country.	Year.	Rate per thousand births.
Russia	1901	279
Germany	1901	210
Germany	1902	184
Germany	1903	202
Germany	1904 and 1905	204
Germany	1906	198
Bavaria	1905	252
Prussia	1906	194
France	1903	137
Sweden	1903 and 1905	128
Norway	1906	79
Ireland	1906	96
England and Wales	1903	125
Scotland	1903	128
United States	1902	142
American whites	1902	135

CENSUS 1900—UNITED STATES.

106 cities	excess of	175
49 cities	between 175 and 200	
38 cities	between 200 and 250	
10 cities	between 250 and 300	
4 cities	excess of	300
Charleston, S. C.		419.5
Savannah, Ga.		387.5
Mobile, Ala.		344.5
Key West, Fla.		341.5
Atlanta, Ga.		341.0
Birmingham, Ala.		339
Fall River, Mass.		334.7
Lynchburg, Va.		331.7
Richmond, Va.		330.7

A FEW CITIES CONDUCTING CAMPAIGNS.

Rochester, N. Y.	1907	200
Rochester, N. Y.	1908	197
Providence, R. I.	1902	217.73
Providence, R. I.	1908	217.09
Cleveland	1907	200
Cleveland	1908	159
	July, 1908	1908
	July, 1908	1908
	July, 1908	1908
New York, infants under two years	1907	1908
	17,437	15,758
Baltimore	2,423	2,215
Boston	2,352	

NEW YORK, 1908, DEATHS UNDER ONE YEAR.

Causes.		Rates per thousand deaths.
Congenital debility and ill defined causes	5,177	329
Diarrheal diseases	3,445	126
Respiratory and tuberculous diseases	3,477	121
All other diseases	1,958	124
	15,758	1,000

*Read before the Medical Society of the State of Pennsylvania, September 28, 1909.

ROCHESTER, N. Y. (Dr. George W. Goler).

	Number of deaths under five years.
1886 to 1896, period of no milk ordinance.....	723 to 963
1897 to 1902, milk ordinance, laws enforced.....	439 to 408
1903 to 1909, milk ordinance, laws not enforced.....	551 to 615

PENNSYLVANIA—CENSUS, 1900.

Carlisle.....	345.4
Steelton.....	244.6
Altoona.....	213.8
Phoenixville.....	206.7
Pottstown.....	204.1
Philadelphia.....	201.0
Plymouth.....	201.4
Johnstown.....	199.2
Reading.....	198.9
Allentown.....	192.5
Norristown.....	186.4
Easton.....	184.4
Mt. Carmel.....	183.4
Pittsburgh.....	180.5
Philadelphia.....	180.0
S. Bethlehem.....	178.2
Altoona.....	178.0
McKeesport.....	175.0

DEATHS IN INFANTS UNDER TWO YEARS FROM DIARRHOEA AND ENTERITIS ONLY.

	1906.	1907.	1908.
Philadelphia.....	2,184	1,886	1,709
Pittsburgh.....	749	706	740
Altoona.....	274	209	208
Scranton.....	196	202	208
Erie.....	74	57	49
Harrisburg.....	32	39	32
Reading.....	131	97	78
Wilkes-Barre.....	65	91	85
Allentown.....	51	74	61
Altoona.....	30	40	37
Chester.....	28	36	43
Easton.....	23	40	14
Johnstown.....	31	40	60
Lancaster.....	35	58	37
McKeesport.....	70	90	84
Newcastle.....	43	37	32
Norristown.....	26	33	22
Williamsport.....	23	20	13
York.....	43	50	44

Pennsylvania population, 7,000,000. Population under five years, 803,000—11.59 per cent.

DEATHS AT ALL AGES, 1907.

Typhoid fever.....	3,538
Pneumonia.....	7,849
Smallpox.....	1
Measles.....	714
Scarlet fever.....	657
Pertussis.....	1,285
Diphtheria.....	2,138
Tuberculosis of lungs.....	9,317
Diarrhoea and enteritis in children under two years.....	5,622

Total deaths in Pennsylvania, 114,435; rate per thousand population, 16.5; urban, 18.1; rural, 15.1; under five years, per thousand of corresponding age, 48.5; under two years, 34,032, 29.8 per cent. of all deaths; under two years, diarrhoea and enteritis, 9,795.

DEATHS IN ALL DISEASES IN CHILDREN UNDER TWO YEARS.

	1906.	1907.
Both parents native.....	14,623	
One or both parents foreign.....	14,411	
White.....	30,262	
Colored.....	1,494	
All diseases under two years.....	34,033	31,750
Diarrhoea and enteritis.....	9,796	8,622
Cities.....	5,070	4,522
Rural.....	4,726	4,100

I can merely ask you to study these statistics, and the truth of the situation is evident. It has been appalling and remains so. We have made very little progress in reducing it, although a number of cities have recently shown small reductions, in a number of cases they are deceiving themselves. The misfortune is universal, and while some foreign countries like Russia and Germany show greater infant death rates than the United States, there is no solace for us, for our loss of life is great, and we have not awakened to our full responsibility, while those abroad report progress in the past two years. Paris now leads the world with 150 institutions doing special work to control this death list. Their infant consultation clinics are receiving attention in several countries. These classes and milk stations have

been started in a number of cities of Germany, England, and Austria. Although there has been a marked decrease in the mortality of most every other disease, that of gastroenteritis in infants remains almost stationary. This is all the more surprising when we consider that the greater part of this mortality is as preventable as tuberculosis or any other contagious disease.

In the State of Pennsylvania, the mortality of infants under two years from diarrhoea and enteritis is greater than the combined mortality from scarlet fever, diphtheria, measles, smallpox, and whooping cough; greater than that of pneumonia, and almost equals the mortality at all ages from tuberculosis of the lungs. While we are more fortunate than some other States, we remain high in the list. Some of our cities have a percentage rate per thousand births, equal to unfortunate Russia and Germany. In Pennsylvania there were under two years, 34,033 deaths in 1906 or 29.8 per cent. of all deaths. And of this 9,796 died of enteritis and diarrhoea. This was 87.1 per cent. of the deaths from these causes at all ages. 6,878 or 70.1 per cent. of these deaths occurred from July 1st to October 1st. One child out of every forty dies at these ages from this disease. It is interesting to note the proportionate death rate among the colored and white race, also those between native parents and those of foreign born. These statistics may disillusion some of us. Considering the extreme narrow age limits, diarrhoea and enteritis in infants under two years, with the exception of no other disease levies such a toll upon the human race. Of course we are grateful for those advances in the past twenty-five years; in the medical science which have reduced the mortality from the other diseases, especially the contagions. We can here thank such blessings as vaccination, antitoxine for diphtheria, and some other sera, school inspectors and nurses, advanced methods of antiseptics, health laws and sanitary precautions by efficient bureaus of health. Thanks to our able commissioner of health, Dr. Samuel G. Dixon and his staff, aided by the local bureaus, our State of Pennsylvania can proudly state that in one year from 1906 to 1907 there has been a decrease in deaths from measles 749, pertussis 263, diphtheria 300, premature births and congenital affections 1,486. And even in diarrhoea and enteritis in infants under two years a saving of 1,184. The latter I believe to be due to an effort to improve the milk supply of the cities.

What have we done to lower the infant mortality? Previous to this year but twelve cities in the United States made any effort in this direction. In most of these cities the work was neither practical nor organized. This year about seventy-five cities and towns have some form of organization or attempt to reduce this mortality. About ninety per cent. of this work consists of educating mothers at meetings conducted by women's clubs and charitable organizations, and the distribution of literature. A great part of this is due to the encouragement and organization of the enterprising and philanthropic editor of the *Delineator*, Miss Howe. Considerable aid has been given by the newspapers by publicity and the distribution of ice and milk free to the poor. In some cities, like New York, philanthropists, like

Mr. Strauss, have given impetus to the work by their care and distribution of pure or pasteurized milk. One can readily see what little has been done by the medical profession.

The greatest good accomplished by the many noble women in this work is to awaken us to a sense of our responsibility.

Mothers' meetings.—These meetings to lecture to and educate the mother as to the proper care of her infant would give results if one could devise means of bringing the mother to the meetings. Various methods have been used. Committee women have visited homes in the vicinity; health bureaus have used the birth records and addressed circulars to each mother with a recent born infant; the time and place of meetings have been announced in schools and churches; inducements have been offered at the meeting by giving lunches, and even entertainment such as music and stereopticon pictures. Yet with all this, many of the meetings had few or no mothers in attendance. At a record of ten meetings there were in attendance a total of twenty-five mothers, of these nine were brought to a school meeting by an enthusiastic principal scouring her immediate neighborhood while the lecturer was waiting for an audience. A total of five meetings on one day netted eighteen mothers, and five more meetings in the same section one week later netted eight mothers. Other cities have, in some instances, shown similar results. If we desire to accomplish anything we must not deceive ourselves, and we should set aside municipal and personal pride and egotism. We must look at this problem in a truthful way.

Education of the mother is a necessity, and education of the medical student, the physician, and the midwife is equally so in their duties and responsibilities in solving the problem. Much of the literature distributed to the parent loses its aim because it is too complex and voluminous. Again, few use practical methods of distribution and placing the circulars in the homes where needed. If you could see the variety of literature collected from many cities, some so complicated and filled with tables and statistics as to require the careful study of a man with a good scientific education, you would then be impressed with the uselessness of much of this printed material. Several cities have different instructions by different organizations, and the advice is conflicting. More of the circulars lie dormant in closets or reach ash barrels than are used by mothers. If a mother's infant is well when a circular arrives, or notice of a meeting, she has no use for them, forgetting that the next day may make her child a victim of illness. A novel and effective method was employed in Philadelphia last month. A few very simple instructions to mothers were printed on large paper bags. These bags were supplied to the milk dealers free of cost, and they were to place every bottle of milk sold in one of these bags. Every milk pitcher or can left on the door step for milk, was to be covered with a bag. This serves the double purpose of distributing simple directions daily for one or two weeks directly in the homes of the milk users, and prevents the contamination of the milk served loose.

Posters.—Among the methods used to educate

the public is the use of posters. They are used by Boston, New York, Chicago, Fall River, and Lawrence, Mass., and consist of large cards with printed instructions on the care of the infant, and an attractive picture. They are for display in windows or on billboards, and is an effective method of education.

Circulars.—The methods used to distribute circulars are varied. Some health bureaus mail them to each mother on receipt of a report of a birth. Literature is distributed through milk stations, settlement houses, libraries, public school meetings, visiting nurses, and medical inspectors.

Clinics for infants.—Among the educational methods must be mentioned the consultations and clinics for infants, copied from the same institutions in Paris. These exist in New York, Boston, and Cleveland. The latter city has four such institutions or dispensaries for well infants, and one central dispensary for sick infants. These are extremely helpful, providing the public is impressed with the fact that they are to serve the well babies, to weigh and examine them, to talk to and advise the mothers, and solely to prevent illness. These consultations may be held at the milk stations, hospital dispensaries, or in open air tents especially provided for this purpose. It seems unnecessary to state that these clinics should be in charge of physicians and nurses who are interested in the work. These fresh air tents are used in Cleveland, Chicago, and Providence, R. I. In Cleveland in order to encourage the parents to bring their infants regularly to the clinic, mothers can obtain pure milk free if too poor to pay, or at six cents a quart, only by bringing the infant once in two weeks for a thorough examination, or bringing a note from an attending physician stating the condition of the infant and that it is under his supervision. The effect of these clinics combined with other methods has shown the following results in Cleveland: In 1907 twenty per cent. of all children born died before reaching the age of one year, twenty-six per cent. of these deaths were due to gastrointestinal diseases. In 1908, the mortality was reduced to fifteen per cent. for the city, and 8.8 per cent. for infants brought to the baby dispensaries.

Visiting nurses and physicians.—Visiting nurses and physicians are used in New York and Chicago, while Philadelphia has physicians only. A house to house canvass by these nurses and physicians does not give practical results commensurate with the time and energy expended. In large cities, during the summer months but a small area can be covered. In New York, in 1907, a large staff of physicians and nurses visited 175,272 families finding 44,130 infants under the age of two years; among these 1,783 were sick, and 688 were attended by the physicians of the health bureau, the remaining sick infants being under physicians' care. From this you can see that a physician and nurse had to visit one hundred families to find one sick child, and five hundred families to find three infants requiring their attention. Then each of these 700 infants received an average of two visits. True, at the same time they were distributing literature and advice, but how much effective advice can be given in these few moments, and how many mothers with

well infants store up such advice. New York, in 1908, made a change by increasing the number of nurses, who visit the parents as soon as a birth is reported, and instruct the mother in the care of her infant. They have 157 physicians and 141 nurses under a Bureau of Child Hygiene. The nurses cover the entire city. Each infant was visited for the year on an average of one and a half times. New York, in 1908, from June 1 to August 1, had 2,137 deaths in infants under two years from diarrheal diseases, and in the same period 1909, there were 1,417. The house to house canvass proves futile because of the small area covered, and the chances of more often finding the infant well or the mother absent, and possibly before the physician is two blocks away the same infant may become ill and die. A physician cannot make more than twenty visits a day in such work, and studying the cards for reports used by some cities, the excessive clerical work may allow scarcely more than ten visits a day.

Milk supply.—There can be no dispute about the absolute necessity of a pure, clean milk supply. It is the awakening to this fact that has saved many lives of infants. Many cities have regulations and laws for the sale of milk, but some have not the means of enforcing them, while those of other cities are not stringent enough to be of much value. The State of Massachusetts has stringent laws covering the entire State. The recent new milk laws for Philadelphia drafted by our director, Dr. Joseph S. Neff, bid fair to give our city the best supply of clean, wholesome milk in the country. The assertion that twelve per cent. of the milk furnished to Philadelphia previous to June 21, 1909, was infected with tuberculosis, and the recent investigation of the dairies of Pennsylvania, where there were found 176 cows suffering from tuberculosis among 930 examined, is sufficient to demand that all cows be tuberculin tested. The many questions that arise in obtaining a pure milk supply for our cities would make a voluminous article. I can merely mention some facts. Every city and State must have practical laws which they can enforce. They must include the farm, the dairies, the shipper, and the dealer. Again with all the care possible what is accomplished if the milk is contaminated by the carelessness of the consumer. I believe the greatest source of trouble is the sale of loose milk. The time must come when it will be unlawful to sell milk loose. Boston has enforced such a law since August 1, 1909. Milk should best be bottled at the farm. All stores and depots selling milk should be licensed, especially those places selling bottling milk, and these should be few enough to keep a close supervision over them. A number of questions are still under consideration: The comparative results of the use of pasteurized milk or clean, pure unpasteurized milk, and the advisability of supplying modified milk. It seems evident that pasteurized milk is safer than a pure, clean one that runs the uncertainty of contamination before its ultimate use. So called pasteurizing by the family is seldom done properly, and some milk, though in looks beautiful, can not be made fit for use with any amount of pasteurizing. Many people believe that the

pasteurizing overcomes any amount of dirt or abuse that the milk may previously go through. The use of modified milk would be well, providing we could educate the mother that the formula must not be made to suit the age of the child but its weight and general condition.

There are about thirty-five cities in the United States which have milk stations. Most of these supply milk to the poor, and some also supply ice. One city, Cleveland, loans ice chests where needed. These stations are great help to a city in the work against infant mortality. They should not only supply milk free to the poor, but at a moderate price to those who cannot afford to pay a large price for pure milk. Dr. Goler, of Rochester, believes that the saving of 1,500 lives in the past ten years was chiefly due to the operation of milk stations during the summer months. This city inaugurated such stations in 1897.

One of the chief objects of all milk stations, physicians, nurses, literature should be the encouragement of breast feeding. This should never be abandoned unless there is not the slightest hope of using this means of feeding. Many an infant could have been saved by a little perseverance. This lies mainly in the power of attending physicians and midwives. Several cities give this special warning in emphatic terms in all literature. One country showed a mortality of infants among the Christians of 324.1 per thousand, and the same country showed 140.4 among the Mohammedans, and this because their law compels the mother to nurse her infant.

In summing up the ultimate results of milk stations we must not be unmindful of the fact that these depots even in well organized cities supply the nourishment of a very small fraction of the artificially fed infant population. We must not deceive ourselves with the amount accomplished by them, for they are but valuable subsidiary means of reducing infant mortality.

A close study of the poor and foreign population of a large city, watching their mode of living and their peculiarities, shows their fixed and stubborn views on rules of health, their superstitions, manner of dress, methods of feeding and choice of food, their inherited abhorrence of fresh air, their inborn mistrust of strangers, especially those connected officially with municipal departments. Even with a pure or pasteurized milk furnished to them free they insist on adding to the diet watermelon, cucumber, and soda water flavored with cheap syrups. Because they believe every cry means hunger, and it is impossible for an infant to exist on a little milk and water given every three or four hours, they resort to irregular overfeeding. Fortunately among the Russians and Italians the majority of the infants are breast fed. Italian mothers seldom go to work in factories, but bring work to their rooms so as to be near their families. While Russian mothers nurse their infants they often place them in day nurseries. While some work in factories many spend their time idly in the neighborhood, and take little time to attend to the cleanliness and care of their infants and home. The colored mother is often shiftless, and her infants are more often reared by some other colored woman

whose business is caring for these infants. These are small, private houses, not registered baby farms, and are the chief source of death among this race.

The infants of many American mothers are equally unfortunate in that the mother believes nursing the child is a great trouble, and interferes with her personal pleasures and mode of dress. She realizes society and nursing infants are incompatible. Actual statistics will show that the infant of the foreigner fed at the breast, while kept in a foul tenement house is more immune against illness and death than the American infant reared in luxury but fed artificially.

Conclusion.—To sum up some of the vital points:

We must first know the true causes of the great infant mortality.

To know these causes we must have accurate, trustworthy statistics of the kind and manner of feeding, and the sanitary condition of the dwellings of infants who die. We should know if the parent is employed away from home. There was no city in this country with such a bureau, until a few weeks ago when Dr. Neff, in Philadelphia, attempted to obtain such information. Several cities make house to house canvasses to find how the well child is fed. This is of very little value, because there is no limit to what infants have been fed on and still live and thrive. Time and again have I watched an Italian infant devour a raw cucumber, and then I would pass the house daily for the next week looking for crepe which did not appear. The vitality of some infants is great enough to withstand all abuses, and these successful mothers are the advisers of the unfortunate neighbor who has an ill infant.

Pure fresh milk is necessary but not the sole key to the problem. Breast feeding gives a certain amount of immunity against illness, and it is necessary for physicians and midwives to encourage it, and oftentimes insist on it.

Campaigns of education are necessary, but it not only must reach every mother, but be plain and simple enough to be readily understood by even the most ignorant. Newspapers, journals, and posters are valuable aids. The medical student must be taught practical and scientific methods of feeding infants. The physicians and midwives must realize their share of the responsibility. The education of the midwife is no minor factor in preventing infant mortality, when one considers that in all cities and towns some fifty per cent. to eighty-five per cent. of the births are under the care of midwives, and these housekeeper nurses have the full care of the infant for the first few weeks of their lives. Much can be done by the intelligent and properly trained midwife in advising the mother.

Every large city needs as an addition to its health bureau, a department of child hygiene, similar to the one existing in New York for the purpose of studying and planning for the health of children and infants.

The work of physicians, health officers, organizations, and societies must not overlap. There should be cooperation, and this can only be done by having one central branch or clearing house, with a proper systematic division of labor. Mothers' associations are valuable aids in the campaign.

In some cities the obstacle to results is not poor legislation, or lack of laws, but the lack of applying existing laws in a practical manner.

We are in need of a law that would forbid any employer or factory from knowingly employing in factories a woman or girl within four months after she has given birth to a child.

While the sanitary condition of the slums is not what we desire, and in places needs considerable improvement, to direct the bulk of our time and energy in this direction is a great mistake. When one considers that the foreign population of the United States, that is those with one or both parents of foreign birth is 34.5 per cent. of the total population, that as a rule there are more children born to this class than to the native population, and then study the comparative infant death rate for both classes, one can realize how universal infant mortality is. To be effective a campaign against infant mortality must include all sections of the city and country, all classes and sects, and, above all, must not be confined to three summer months but extend throughout the year.

1306 PINE STREET.

PREVALENT DISEASES OF TROPICAL AMERICA.

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The sojourner in Spanish America, from the tropic of cancer to the tropic of capricorn, is impressed by the general evidence of physical infirmity among the native population. Not only along the coast and lowlands, but also in the uplands of the interior, where the climate is salubrious and delightful, and the environment free from enervating and compromising influences.

In the cities and towns of the coast, sanitary conditions are generally bad. There both anopheles and stegomyia mosquitoes are usually found in abundance, to spread pernicious malarial and yellow fever, while the plague also frequently exists. But in the uplands of the interior stegomyia and, generally, anopheles are not found, and the plague does not menace, yet in this climate, scarcely surpassed in salubrity in the whole world—the natives are a sickly, forlorn lot. And why? The answer is plain and may be given in a few words, but before stating it let us consider briefly the diseases which are not only prevalent, but almost common to the entire native population.

Throughout the entire length and breadth of tropical America one finds almost everywhere the so called *calentura*—a fever of malarial type and varying in manifestation from simple continued fever through *terciana* to *perniciosa*. These *calenturas* are quite as prevalent in the mountains where anopheles is never found as in the lowlands of the sea coast, where anopheles is common; and yet, regardless of etiology, these fevers are universally pronounced to be simply "malarial" and treated as such with quinine.

Let us look at a typical case of each of the par-

ticular varieties of *calentura*. We might easily report thousands of cases from actual records, but in all there are scarcely more than three clinical pictures presented. The first, and perhaps most common, manifestation is as follows: Patient—child or adult, male or female—complains of having recently suffered either a violent chill or general chilling of body which may have been repeated in twenty-four, forty-eight, or seventy-two hours, the interval of recurrence often varying widely in a given case, followed by general bodily pains and pronounced headache. Usually there is more or less nausea and abdominal pains, with aching and heaviness of shoulders and extremities. The bowels may be regular or there may be constipation or diarrhoea. The liver may be congested, as also the spleen, and the abdomen is often protuberant—constituting “pot belly.” The tongue is usually moist and quite clean. The pulse is usually somewhat accelerated and the temperature somewhat elevated. The complexion (especially in the ordinary type of Spanish-Indian) shows little change, and the skin may be dry and warm, or perspiration may be quite profuse. The chief complaint of the patient is the chilling of the body (*Me hielo todito el cuerpo*, he will say), the headache and general bodily pains, and the lassitude. Such is the ordinary picture of the upland *calentura comun*—an affection in which the plasmodium malarie may often be found in the blood but which is almost invariably associated with, and has as an exciting cause, lumbricoid worms—which the patient frequently, during the occurrence of the chill or the course of the fever, vomits in quantity. The treatment is plain and the cure—except in cases where repeated attacks have led to malarial cachexia, with chronic enlargement of liver or spleen—prompt. A full dose or two of *santonin* and *calomel*, followed by moderate doses of quinine, will usually afford prompt relief.

In the second variety, the clinical picture is similar to that of the first, with the added symptom of persistent and disturbing diarrhoea, which frequently leads to considerable prostration. The nausea and abdominal pains are generally augmented and tenesmus is usually complained of. In this form lumbricoid worms also play an important part. In the treatment, in addition to the vermifuge, Warburg's tincture, without aloes, and *salol* have been found of special value.

The third form of *calentura* presents the same general subjective symptoms as the first described variety, though these are generally modified and continued over a considerable period of time. Moreover, there is added an important objective symptom—a dirty yellow or clay color mixed in the natural swarthy complexion, with anæmia of mucus surfaces. This variety, like the preceding ones, has for its cause an intestinal parasite, but a parasite more serious than the *ascaris*, viz.: the *uncinaria*, or hook worm. *Uncinariasis* is a disease which has been largely overlooked in most parts of tropical America, and yet we have found it common in both South and Central America, demonstrating the parasites and their ova again and again in the excreta of patients. The clinical picture presented by those suffering from hook worm disease is commonly interpreted as malarial cachexia and, ignorant and re-

gardless of cause, quinine and allied drugs are administered and consumed in quantity. The number of persons harboring these parasites is legion. The disease they occasion—though preventable and curable by proper means—is usually unrecognized and, regardless of the relief more or less constantly sought in *remedios* of every conceivable sort, continues to spread and to enervate, incapacitate, and even destroy life. The further consideration of *uncinariasis* and its proper treatment merits a separate paper.

Another disease of tropical America, not nearly so common as the *calenturas* yet occurring with considerable frequency and often having serious consequences, is tropical, or amebic, dysentery. The characteristics of this disease are doubtless more or less familiar—the chief symptom being persistent diarrhoea, with moderate or no tenesmus, the stools, which are mucoid and fluid and generally marked with blood, being more frequent at night or early morning. The *Amœba coli* can be found in the evacuations and make certain the diagnosis as well as the necessary plan of treatment. The treatment, in the earlier stages and in young, well nourished subjects is not difficult. A diet of boiled milk and continued moderate doses of quinine by mouth will frequently do much toward a cure, but quinine by rectum and bichloride of mercury in small doses by mouth, will do more. This disease must be carefully guarded against by *gringos* (white foreigners) in tropical countries. The safest way is to see that all drinking water and water used for culinary purposes is boiled. When this is impossible, pure water from rapidly flowing streams should be employed and, when possible, either filtered through unglazed earthen percolators or run through absorbent cotton.

Another disease very common throughout tropical America is gonorrhœa—troublesome and often resulting in serious sequelæ in the male, but productive of still more serious ill in the female. The loose morals and filthy habits of the natives lead to a wide dissemination of venereal disease, especially *purgación*, or gonorrhœa. Multiple attacks are common, and lead to chronic urethral, prostatic, and vesical disease in the male, and to uterine, tubular, and ovarian disease in the female. The fecundity of the females, in spite of the general prevalence of this disease has long been a marvel to us. Syphilis and leprosy both occur but, fortunately, are less widely disseminated. Pustular and ulcerative diseases of the skin are common.

Without devoting special attention to smallpox, which sometimes invades and rapidly depopulates special districts, or to the minor epidemics of measles, mumps, whooping cough, chickenpox, etc., which are by no means uncommon, we are now in position to answer the question, already propounded: Why are the natives of the uplands, as well as of the lowlands, unhealthy and generally sick? Because they are almost universally unclean and disobedient to every principle of hygiene. They are dirty of body, seldom bathing hands, feet, or face. They live in filth, corralled together with vile pigs, forlorn cats, and mangy dogs. They seldom clean their places of abode or really cleanse utensils used for the preparation or serving of food. With many,

the hands—practically always unwashed—often serve as knife, fork, and spoon, while any old thing serves as plate and table. Is it therefore strange that intestinal parasites are ever present among them and that disease, once established, is most difficult to eradicate?

So far as I know, I am the first to point out the true exciting cause of the common *calenturas* of the uplands of tropical America. In our earlier observations of these malarial manifestations in regions where anopheles, and practically all mosquitoes, were absent, we believed that the almost ever present flea *Pulex irritans*, was largely responsible for their transmission, but as many foreigners who easily escaped the *calenturas* were almost daily the hosts of various fleas, the premise became untenable. It was not until I had repeatedly seen round worms vomited by patients suffering from *calentura* that the association of these worms with the *calentura* dawned upon me, and it was not until I had found, in the excreta of patients, the hook worm and its microscopic ova that the existence of uncinariasis among the natives of the interior of tropical America was proved.

The religion of personal cleanliness—physical and moral—is sadly wanting in most parts of tropical America. In many places it would seem that only the excellence of the climate and the general out door life which is led stand between the people and prompt and absolute annihilation.

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ESPERANTO IN RELATION TO MEDICINE.*

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I will not insult the intelligence of this audience by discussing the question whether some mode of international communication which, being learned, shall put members of all nationalities once for all in possession of a means of communication with every kind of foreigner is or is not desirable. The evidence that it is, is too overwhelmingly apparent, and in nothing more than in the International Congresses, which have now become so important a feature of every activity of life. The need has been recognized also with regard to warfare, to the operations of the Red Cross, particularly in war and in the presence of great calamities, and was conspicuously felt during the allied operations in China at the time of the Boxer rising. This is the age of internationalism, and by consequence of the need of international methods of communication, and the hindrance thereto afforded by the diversity of tongues has been too loudly and widely lamented to admit of any doubt on the matter. We will therefore confine our discussion to the questions: Is such a mode of international communication practicable? And if so, in what direction is it to be sought?

There are three possibilities: 1, The restoration of a dead language, which practically means Latin, for to speak of reintroducing classical Greek would naturally be met with a smile of derision; 2, the selection of some existing living tongue; and 3, the

invention of an artificial language, to be learned as an auxiliary to their mother tongue by people, and especially by the children of the future, of all nationalities, so that one tongue would be all that was required to enable them to communicate with foreigners of any kind.

1. To Latin the obvious objection is that it is too difficult for the majority to learn at all, and even the fairly well educated who have taken a classical course at school, know from their own experience that their capacity to converse in it is practically nil. Even for those of more than ordinary education, to master it sufficiently to be able to converse in it would require more time than they could well afford to give it. Moreover, Latin is daily growing more and more out of gear with the needs of modern civilization. It would, therefore, be necessary materially to alter it in two important respects, viz., first by simplifying it to such an extent as entirely to alter its structure; and secondly by importing so much foreign material into it that it would be no longer Latin. It would thus become practically an artificial language. But if we are to have an artificial language at all, it is surely better to construct one up to date than to attempt to put new wine into old bottles.

2. The second possibility, the selection of an existing language, has insuperable difficulties. First, there is the difficulty of learning any foreign language, which all persons of whatever nationality experience in a greater or less degree. Let any one of you who has learned more or less well any language other than his own, ask himself whether he thinks there is the least probability* of the great masses of the people of any nationality, or even the great mass of any learned profession, being able to acquire a mere every day speaking acquaintance with any second national language. When you contemplate going abroad for postgraduate studies, are you not cautioned that it is largely waste of time to go to a foreign country with the language of which you have not a fair acquaintance, lest the whole of the time you can allow yourselves, be entirely taken up in learning enough of the language to profit by the teaching, even though you place yourselves under the most favorable circumstances by living *en pension* and mingling as much as your ignorance will permit with natives?

But there is an even greater difficulty. I cannot do better than state it in the words of a thesis for the doctorate of Paris (November, 1908) by a French physician, Dr. Pierre Corret, of whom more anon. He says: "Truly, French would offer great advantages, that we cannot deny. Its intrinsic qualities render it indeed eminently fitted to treat of scientific subjects. Its adoption would relieve us [the French] of the necessity for studying any foreign language, and only the other people would have to learn ours. What advantages the selection would give us! The time that foreigners devoted to studying our tongue we should have for scientific research, and the official recognition of French as the international language would confer on us an incontestable advantage over all the other nations." "But," he continues, "it is just these advantages to the profit of the nation whose language should be chosen, which will always prevent the different peo-

*Read by request at the meeting of the Association of American Medical Editors at Atlantic City, June, 1909.

ples coming to an agreement on the adoption as an international tongue of that of any one of them."

There are some who fondly believe that time will solve that problem by making English the international tongue, and doubtless it is destined to spread very widely, but the time of its hoped for supremacy is a long way off, and meantime the need for such a tongue presses and becomes daily more and more urgent, owing to the rapidly increasing intercommunication of the nations. And in nothing is that need more acutely felt than in the cosmopolitan republic of the sciences, not the least of which is that of medicine.

3. The third possibility is the construction of an artificial language, which shall be so simple that the least educated can learn it with ease, and without any overtaxing expenditure of time, money, or effort; so flexible that it can be made, without violence to its natural genius—such as would have to be used in any attempt to impress a bastard Latin into service—to express anything that the mind of man can conceive; and so accurate that if employed according to rule it can express the most exacting ideas with precision and without ambiguity. Many international languages have been offered, beginning with the *Logopandektision* of Sir Thomas Urquhart, in 1653, and finishing up with a batch of languages, forty-nine in number, which have burst upon the world since Bishop Schleyer, in 1879, first promulgated Volapük. But of all these the only ones that have ever gained any practical following at all are Volapük, which died a natural death from its complexity, and Esperanto, which, in consequence of its simplicity—it has been aptly termed "the least common multiple of languages"—is now fast progressing toward its aim. It is of the latter that I shall now speak.

Esperanto was invented by a Polish oculist physician, Dr. L. L. Zamenhof, who, under the pseudonym of Dr. Esperanto, after very many years of unobtrusive study and unwearied labor, first promulgated it in 1887. It did not, however, receive any appreciable public recognition until after the first International Esperantist Congress, held at Boulogne, France, in 1905. That congress was attended by 800 Esperantists from very many countries, all nervously anxious to see how the new means of intercommunication which they had been learning, some of them for only a few weeks and nearly all from books alone, would work out in practice when tried face to face with foreigners speaking different mother tongues, with pronunciations, accents, and idioms differing from their own. The effect when Dr. Zamenhof opened the congress with an address in the new tongue, and men and women of the most diverse speech found, to their intense delight, that each could understand as well as though he were being addressed in his own mother tongue, is described as having been electrical. In the following years congresses were held at Geneva, Switzerland (1906), at which 1,000 were present; at Cambridge, England (1907), with 1,400 in attendance, the Belgian government sending an official delegate, and in August, 1908, at Dresden, Germany, at which were present official delegates from the governments of Japan and the United

States.¹ The last congress was attended by upward of 1,500 people, representing forty-two different languages and nationalities and also by a delegate from the International Committee of the Red Cross, who was not an Esperantist, but attended to give impartial testimony. From the report of this delegate, M. Moynier, let me quote the following passages:

Dr. Thalwitzer, of Dresden, gave an interesting display at which I had the pleasure of assisting. General Schmidt had placed at his disposition a bearer section of the Saxon Red Cross. In ten lessons he had succeeded in giving them sufficient instruction to permit of thirty men who knew only German, executing orders given in Esperanto, and replying to questions put to them in that tongue.

Some hours suffice to a person of moderate education to apprehend the mechanism of Esperanto. At the end of some weeks of study, even without a teacher, one easily is able to read it. A few months suffice to understand and speak it fluently.

It is very difficult, when listening to a person speaking Esperanto fluently, to recognize what is his national tongue, that was one of the facts that struck me most in hearing representatives of more than thirty different nations talk.

The delegate of the United States government to the same Congress, Major Philip Straub, of the army, also not an Esperantist then, though he has since become one, made his report, which was published in the *Army and Navy Register*, January 6, 1909. He says in part:

The Esperanto language is constructed on such simple and practical lines that one can learn to read it in an incredibly short time. The rules in grammar are few, and as there are absolutely no exceptions, it requires but a few hours' study to master them.

I am quite convinced that Esperanto, which has been on trial for twenty years and found to fulfil the conditions required of an international language, is destined to perform an important rôle in international intercourse and will eventually become of great economic value in facilitating trade relations between various nations.

From a military point of view, the most important application of Esperanto at this time would appear to be in the sanitary service, and I am of the opinion that the government would be justified in giving it official countenance. It is suggested that a beginning be made by introducing it into the National Red Cross Association. . . . The officers of the European Red Cross organizations, especially those of France and Germany, have taken active interest in the propaganda, and many high officials of their organizations were present at the congress.

It is quite easy to understand, whether spoken by Russian, German, Turk, Japanese, or American.

The delegate accordingly urges its adoption into the American Red Cross, and that the coming National Esperanto Congress in the United States in August, 1909, be given such governmental assistance as may be necessary in order to make it a success. This report and its recommendations were officially indorsed by the surgeon general of the army and the secretary for war.

The next international Esperanto Congress will take place in Barcelona, Spain, in August of this year.

What, then, is this Esperanto? It is made up of a few primary words, complete in themselves, all being prepositions, conjunctions, interjections, or adverbs, and a number of roots, selected on a basis of internationality, so that as many words as possible shall be recognizable at sight by as many people as possible. These roots become verbs, nouns, adjectives.

¹At this congress was established the Tuttnum Esperanta Kuracista Asocio (All World Esperantist Physicians' Association), which now numbers nearly 1,000. As United States representative thereof I shall be glad to give any information concerning it to physicians.

tives, and adverbs respectively on the addition of grammatical terminations, which are *always the same for the same part of speech*. Any root therefore can be made any or all of these parts of speech if the sense of the root permits of it. Thus the root *parol-* expresses the general idea of "speak." Add the noun terminal, *o*, and it becomes *parol-o*, speech, the adjective terminal, *a*, and we get *parol-a*, oral, add *e* and we have *parol-e*, orally; and finally, add *i*, and it signifies *parol-i*, to speak. By this means the 2,000 roots of Esperanto, being as it were multiplied by the four grammatical terminations give us approximately 8,000 substantives, adjectives, adverbs, and verbs, without imposing on our memory any other effort than that of recalling the four terminations *a, e, i, o*, with their respective significations. Many of the primary words mentioned in the foregoing, also, can be converted into other parts of speech by addition of the respective terminals, thus: *apud* is a preposition meaning near to, by, *apud domo*, near the house; but by adding the adjective terminal *a* to *apud*, it becomes an adjective; thus *apud-a domo*, signifies a nearby house. *Jes* (pronounced yes) is the affirmative adverb, and means just what it does in English. But by adding *a*, it too becomes an adjective and serves where we have to use a word from a different root, thus: *jes-a respondo*, an affirmative answer. *Jes-i* means to say yes, to affirm.

Then the verbs, the crux of every language to foreigners. They are as simple as the rest. There is only one conjugation, and that is very short, and every verb without exceptions conforms absolutely to it. It is formed as are the other parts of speech, by adding a grammatical termination to the root. Thus: *As* is the sign of the present; *is*, that of the past; *os*, that of the future; *us*, that of the conditional; *u*, that of the imperative and subjunctive (or dependent). There are three participles, present, past, and future, both active and passive, the time letters (present *a*, past *i*, and future *o*) again coming into play. Thus, take the verb *don-i*, to give; we have present, *don-as* (the form is the same for all persons and both numbers, the noun or pronoun alone distinguishing sufficiently); past, *don-is*; future, *don-os*, conditional, *don-us*; imperative and dependent, *don-u*. Participles: active, *don-anta*, *don-inta*, *don-onta*; passive, *don-ata*, *don-ita*, *don-ota*. The participles, too, may be used either as nouns, adjectives, or adverbially. Thus, *kantanta birdo*, a bird singing; *la kantanto*, the singer, the person who is singing, but—and here is a fine and very useful distinction—*la kantinto*, the singer (who was singing) and *la kantonto*, the singer (who is about to sing).

In nouns, adjectives, and participles, the plural is made by adding *j* (sounded as *y*) to the *a* or *o* with which the word ends. Thus *viro*, man, *viroj*, men, *bona viro*, a good man, *bonaj viroj*, good men. The adjective, it will be noted, takes the plural when its noun does, for a reason that will be presently explained.

The accusative, to signify the direct object of a verb, is made by adding *n* to the *o*, *aj*, *o*, *aj*, of the noun and adjective singular or plural. Thus: *Mi amas bonan viron*, or *bonajn virojn*, I love a good man, or good men.

There is a real practical value to the accusative,

for it allows a certain variation in the order of words such as would cause great ambiguity in English (and sometimes does in poetry, etc., where inversion is used). For instance, in "the son the father loves," we are not quite certain, apart from the context, whether it is the son that loves the father or the father that loves the son, but there could be no such doubt in Esperanto, where the meaning is clear whether we say *la patro amas sian filon* or *sian filon amas la patro*. Moreover, by being compelled in English, in order to avoid misapprehension, to follow strictly the logical order of thought in speech we lose many of those fine shades of meaning that we used to see in our Greek and Latin reading. These, the retention of the accusative case in Esperanto enables us to secure.

The last point to mention is the way in which words are built up by a system of prefixes and suffixes of invariable meaning, which, being interposed between the root and the grammatical termination, not only modify the meaning of words, but increase our vocabulary vastly with little expenditure of effort, by rendering unnecessary many words derived in other languages from different roots. Thus the prefix *mal* signifies the exact opposite of anything. *Bona* being good, *malbona* necessarily means bad or evil. *Fermi* being "to shut," *malfermi* means "to open." And so forth. Again, *in* signifies the female. *Viro* being "a man," a woman is necessarily *virino*. If, therefore, you know the name of any male thing in Esperanto, you know what the term for the female must be, though you may never have heard it. *Eg* and *et* are augmentative and diminutive, etc. By this means about one third of the entire vocabulary of most languages is rendered unnecessary and there are so many thousand fewer roots to learn.

Finally all the scientific and technical terms as well as many others, derived from the Greek and Latin, which are already practically international in substance, are adopted bodily into Esperanto, merely conforming to its spelling, as they do in other tongues that use them—a process which takes place in nearly every language—except that the spelling is not, as it is in Esperanto, phonetic. Thus therapy becomes *terapi*; physiology, *fiziologio*; telegraph, *telegrafo*; astronomy, *astronomio*, etc.

As to pronunciation, the vowels take the continental sounds of *ah, eh, ee, o, oo; aj* is long *i* (sigh), *oj* like "oy" in "boy," etc. Some of the consonants vary from the English. *G* is always hard, as in "get." *C* is like *ts* in "Tsar," *j* like *y*, and there are six special characters for the sounds *tch*, as in "church"; soft *g*, as in "gem"; guttural *h*, as in German *auch*; soft *j*, as in "pleasure"; *sh*, as in "shell," and *au* as in "cow." These new letters are represented by *ĉ, ĝ, ĥ, ĵ, ŝ*, with a circumflex accent over them, and *ŭ* with the sign of a short vowel, while *q, w, x, and y* are omitted.

In Esperanto there is only one sound to one letter and one letter to one sound. Every letter is sounded: There are no silent letters to bother one. And last and most important of all, the *accent is always on the last syllable but one*. An error in pronunciation is therefore almost impossible when once the rules are known.

And that is all there is to it, except to learn a suf-

ficient number of roots, which is easily done by reading, seeing that about eighty-three per cent. of the roots are easily recognized by an English speaking person of moderate education.

Now let us look for a moment at what Esperanto has already accomplished. Practically unknown, its acquaintance being confined to a few thousands, if not hundreds, only five years ago before the First International Esperanto Congress at Boulogne, it has now over a million adherents divided among every civilized country in the world. A year later there were 639, while in November, 1908, the number had risen to 1,130, and has since increased very materially though I have not the official figures available. No less than twenty-six international congresses devoted to various pursuits have either recommended or sanctioned the use of it in their sessions. The Pan-American Scientific Congress in Chili, which you will remember was a quasi governmental affair, being officially participated in by the various governments of this continent and having representation from twenty nations and most of the important American universities, passed resolutions recommending to the respective governments that it be made a subject of instruction in all primary schools. And finally it has been recognized officially at the International Medical Congress at Budapest, for communications and discussions. Unfortunately the time of its acceptance was so long delayed that not many esperantists had time to prepare papers within the prescribed limits, but eight or ten at least will be presented. The Congress of Climatology at Algiers this year sent out its programme in Esperanto and accepted that language for papers and discussions. Other congresses which have undertaken to adopt it at their next conventions are the Eleventh Russian Surgical Congress of Pirogoff, and the International Peace Society.

As to education, apart from private enterprise, it is taught now at several universities and colleges, including in this country the universities of Chicago and Wisconsin, the Boston Institute of Technology, and the Roxbury Latin School. It is a subject for the local examinations of the University of Oxford. It was made part of the regular curriculum in no less than forty public schools of Great Britain last year and is part of the regular course in several countries abroad, in some instances being subsidized by the government. The London Chamber of Commerce has included it among the subjects for its commercial certificates. England and Russia have accepted it as an official language for telegrams.

In literature it is represented, not only by national journals in fifty-four nations, but by a literary review and a scientific review, both of high class; by numerous special journals devoted to such varied pursuits as commerce, stamp collecting, Christian endeavor, Catholicism, socialism, medicine, etc.; by translations of many of the world's great classics, and by original novels, tales, and plays.

I cannot allow this opportunity to pass without mention of the fact that a young French physician, Dr. Pierre Corret, whom I have already mentioned, selected as his subject for the *Thèse de Paris*, November, 1908, The Utility and Possibility of the Adoption of an Auxiliary International Language

in Medicine. This thesis attracted the profoundest attention from his judges,—men whose names are well known to you,—Professor Bouchard (president), Professor Chantemesse, Professor Renon, and Professor Balthazard,—with the result that it obtained the rarely granted commendation of "very good." Professor Chantemesse, moreover, was converted on the spot and expressed his intention of learning Esperanto immediately. The thesis ended with five conclusions, from which the following are extracted:

Esperanto being very easy of acquisition for all, and suited for treating of all medical subjects; the experience of the international Esperantist congresses having moreover demonstrated that it makes possible the immediate discussion of the most diverse subjects between congressists of different tongues, incapable of understanding one another in any of the national tongues; it is desirable that its use should become generalized more and more in the international medical congresses, and to that end that it should henceforth always be admitted to the number of official languages of these congresses. . . . It is equally to be desired, and for the same reasons, that authors of articles and medical works presenting general interest, should append to their works a résumé in Esperanto, as was done notably by Dr. Lambert in his Zurich thesis on the theory of torsion of the humerus, and as the Russian review, *Khirurgiya*, will henceforth do.

It is worthy of note also that these conclusions were officially subscribed to by the president, Professor Bouchard, Professor Landouzy, dean of the faculty of medicine, and by Professor Liard, vice-rector of the Paris Academy.

How can Esperanto especially help physicians? In the first place by helping the progress of medicine. This it can do a, through congresses; b, through literature; and c, through promoting the interrelations of physicians of divers nationalities.

What is the present condition of things as regards international medical congresses? Speaking on this topic, the *British Medical Journal* of February 8, 1902, said: "There can be no doubt that the linguistic difficulty which began at the tower of Babel is a most serious obstacle to the progress of science." Later, in its issue for February 6, 1904, it said: "At each of the three or four last meetings of the International Medical Congresses the confusion of tongues has made serious discussion difficult, and in some cases has reduced to the proceedings to an unedifying farce. . . . The curse of Babel is on the International Medical Congress, and must inevitably bring it to ruin unless means can be found of preventing its being treated by the natives of the country in which it happens to be held, as their own particular preserve." Indeed, an International Medical Congress has been facetiously described as "a ceremony at which individuals of various nationalities gather without understanding one another, to purchase by their presence the right of having their communications figure in the Transactions, and to take part 'on the side' in certain fêtes and excursions at a reduced price." Think, then, what a boon it would be if there could be a common language which every one could understand, even if he could not perhaps speak it fluently, in which the proceedings could be carried on.

What has been said applies in a lesser degree but even more universally to medical literature. Even a highly educated physician rarely reads more than three languages. Think what a simplification would

take place if every original communication were accompanied by an author's résumé in Esperanto. This plan has already been adopted by the Russian journal *Khirurgiya*. No waste of time and money over translation, possibly resulting in an entire misapprehension of the author's meaning, but the author's own main points hot and fresh from his own pen, in a language understood by all.

Finally, consider the enormous advantage of feeling that you can communicate with any physician in any part of the world; with the author of that Japanese article, for instance, in which you are so intensely interested; with the physician to this spa or that health resort abroad, to which you are sending one of your best patients, not to mention the social acquaintance opened to us, as I have good reason to know, from my correspondence with many Esperantist physicians in various countries.

There is another aspect, also, to this side of the question. Not more than a few weeks ago appeared an editorial in the *British Medical Journal*, suggesting the great advantage that would accrue from an international consideration of the ethical code in regard to some matter or another. That very course is an accomplished fact among Esperantists. The *Voĉo de Kuracistoj* for twelve months has been conducting an international enquiry into the status of the professional secret in various countries.

I have already referred to the great advantage such a language would confer in time of war or of dire catastrophe, in which in these days of internationalism all the world runs out to help. In his book, *Esperanto et Croix-Rouge*, Lieutenant Bayol, instructor at the special military school of St. Cyr, France, gives many specific instances of the misunderstandings that occurred during the Chinese troubles, of which I select the following, not because it is the most convincing, but because it is the shortest: "At this moment an American officer having misunderstood a verbal report that a French officer had transmitted to him from a Japanese general, supposed the affair finished, and so reported to his commanding officer. The Americans advanced immediately into the open to the east of the city and suffered great losses." This is not a medical incident, it is true, but who can doubt that similar *contretemps* occurred in medical matters in that same campaign?

It is true this language will have to be generally learned in all countries to afford that relief to the present conditions that necessity demands. Well, there is no reason why every one should not learn it. As I have endeavored to show, it is simplicity itself. Let me give you my own personal experience. I did not take it up voluntarily. As many of you perhaps know I have always been something of a classicist, advocating strenuously the restoration of Latin as an international language of science. But one day there drifted into the office of the journal on which I was engaged, a communication in a language not recognizable as any of the ordinary European tongues, and it fell to my lot to struggle with it. I judged it to be Esperanto, and as it was evidently intended for publication I forthwith spent a few cents on the necessary books and began to study them on the car going home.

Within the next twenty-four hours a translation of the communication was in the printer's hands. In three weeks I was reading the Frenchiest of French novels composed in, not translated into, Esperanto, and long within three months I had written and mailed to the editor of an Esperanto medical journal published in Lwow, Austria (the *Voĉo de Kuracistoj*, now the official organ of the All World Esperantist Physicians' Association), an article on the Professional Secret in the United States, as part of the international discussion on the subject already referred to. A copy of the journal containing this article it gives me great pleasure to submit to you at this moment. And I used no time in study, properly so called, except the novel reading which I did for sheer amusement, save that going to and fro in the cars between my office and my residence. Now I confidently ask any linguist here whether he knows of any national language in which, with all his advantages of previous linguistic attainment, he will undertake to do the like.

There is another great advantage in Esperanto, which, however, as this paper is already too long I will not attempt to prove or illustrate, but will content myself with merely stating; that is, that a knowledge of Esperanto materially aids in the acquisition of any Indo-European tongue, for two reasons: First, it simplifies all grammar and idiom, reducing them from an artificial position to a logical scheme; and secondly it aids in the acquisition of a cosmopolitan vocabulary, for of the 2,446 original root words, the average English speaking person is already familiar with eighty-three per cent.; sixty-four per cent. of these words occur in Latin; eighty-eight per cent. in French; eighty-five per cent. in Italian, eighty-two per cent. in Spanish; eighty-one per cent. in Portuguese; seventy-six per cent. in German; and forty-two per cent. in Russian.

Finally, not to refer again when dealing with the relations between physicians and patients to the already well discussed subject of warfare and public calamities, is there any country in the world where a much greater mixture of races can be found, particularly among the lower classes, laborers, and the like, than in the United States? Surely, the use of a common language here would be of inestimable advantage to a mutual understanding between physician and patient. Do not be in a hurry to laugh at this as a *reductio ad absurdum* of the whole question. You may perhaps think that at least the benefits of such a common language, if it were ever established would necessarily be confined to those with a fairly good education. But there you would be wrong. Esperanto can be easily learned by any one who can read, is being learned to-day by very illiterate people. Not long ago an acquaintance of mine, not an Esperantist, who had just returned from a large mining camp, told me that in consequence of the great mixture of nationalities among the men employed, who could understand neither one another nor their foremen, the camp, consisting of Italians, Poles, Bohemians, Greeks, Scandinavians, Germans, etc., was learning Esperanto under the direction of the foremen and officers, as a means of mutual understanding. Will you tell me that the great body of members of a learned profes-

sion cannot do what uneducated and almost illiterate miners are now doing, in a matter that is purely intellectual?

There remains one matter to which I regretfully refer, and that is a very active, and I must say, vicious attack being now made on Esperanto by a trifling number of malcontents, who are for "reforming" it. Now, no one pretends that Esperanto is perfect, or is incapable of improvement. But the circumstances under which these particular improvements are urged are not such as to command the confidence of most right thinking people, and the reform movement shows little signs of commending itself to the large body of Esperantists, without which acceptance it is valueless, even were all its changes indubitable improvements. Like the telephone the usefulness of an international language is in direct ratio to the number using it, and when one phone is widely installed it is a hard matter to introduce another.

In 1900 Monsieur Couturat and Monsieur Leau, of France, founded a Delegation whose purpose was to induce the International League of Academies to investigate and decide which of the existing forty or fifty candidates for the post of international language was best fitted for the purpose. The League took no action, so the Delegation, in 1907, proceeded to the task itself. Unfortunately, it exceeded the authority conferred on it, and, while selecting Esperanto by name, it proposed to make certain changes, some of which might or might not be improvements, though certainly others are not. In point of fact it proposed to substitute a modification of Esperanto, the product of one who had formerly been a strong adherent of Esperanto, and who in fact had been sent as the representative of Esperanto to the delegation to champion its claims. Instead of doing so, however, he betrayed his trust by inducing the delegation to insist on the adoption of his own changes in the language. Now, the matter of the proposed changes themselves is altogether beside the question, for reasons stated by Dr. Zamenhof in the following weighty words:

"They (the reformers) forget that the question of an international tongue is even now in the state of propaganda; that the world refrains from accepting an international tongue, not for this or that detail, but only from *lack of confidence in the whole affair*; that consequently now every true friend of an international language should be absolutely silent concerning his own personal tastes and fancies, and that we all should work above all things in the strictest unity to acquire for the main issue the confidence of the entire world." He then goes on to say that when some mighty power, such as the governments of the principal countries, shall be willing to take the matter up and, with calm deliberation, shall make such changes as they find necessary with the weight of their authority, we may confidently entrust to them the further conduct of the whole affair; but that to accord such momentous issues to private persons, over the heads of the hundreds of thousands of people for whom Esperanto is already a living tongue, who read, write, and speak it, and who entertain relations with foreigners only by its means, would be to throw back the project of an in-

ternational language indefinitely. And, as Professor Cart, of the Ecole libre des sciences politiques, of Paris, rightly says: "From the fact that it lives, Esperanto will evolve, as all living languages evolve, but not by any systematic modification in accord with preconceived theories." The latter method is, as Professor Cart says, "an idea which obsesses a certain number of learned beginners—for whom the language came into existence only on the close of the day on which they first began to learn it." The evolution of Esperanto is in the hands of a "linguistic committee," which understands the true function of the lexicographer—not on *a priori* grounds to tell the public who use it what language shall be, but rather *a posteriori*, to chronicle all that has the authority of common usage in its favor, and to indicate that usage which, as being most in accord with sound philological principles, seems best.

That this factitious opposition will amount to anything at all in the end there is not the slightest reason to fear. A language belongs to those who use it, and cannot be controlled against their general will. Esperanto is now the living property of far too many people to be ruled by the dictates of a few *doctrinaires*; but it is nevertheless deplorable that a few, some of whom, at one time, were its most ardent champions, should delay its onward march, however slightly and for however brief a time, by trying to give a semblance of instability where none in fact exists.

CANCER OF THE STOMACH.*

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Cancer of the stomach, by reason of the often intolerable lateness of its diagnosis, destroys many lives that might otherwise be saved—Moynihan says that fifteen hundred die from this malady in England each year. The proportion in this country is, I do not doubt, larger, it is only by earnest collaborating on part of the physician and surgeon that we can hope for some amelioration of this unfortunate state of affairs. The physician in diagnosing usually waits for the last stages of the disease in order to confirm his diagnosis. The first essential in the making of an early diagnosis is the taking of the case history. One must if possible induce the patients to dwell on their very earliest lapses from a normal state of health. We must pay particular attention to what Moynihan terms inaugural symptoms, they are the only ones the observation of which is of any value in the disease. End symptoms and post mortem pathology are of scientific interest to the doctor, but pathology of the living is of vital interest to the patient. In most textbooks only the late clinical manifestations of stomach cancer are the ones selected for honorable mention, those prominently placed on the record. Late symptoms are no more characteristic of any disorder than the early ones. Why wait for them? The late symptom is

*Read before the Kanawha County Medical Society and the Virginia Medical Society.

frequently the herald of death, the early symptom, the cry in time for surgical assistance.

It is always well to get a most detailed statement of the disease from its inception, omitting nothing, no matter how trivial.

In more than sixty per cent. of cases of gastric cancer there must have been an antecedent condition of ulcer. The two most common types, the pyloric and the prepyloric, give initial symptoms that differ decidedly. In the former the symptoms are obstructive from the beginning, and vomiting is seen from the first, hypertrophy and dilatation follow early. When the growth has the prepyloric location the first signs are separately vague but taken together are quite sufficient for a diagnosis to be made. To quote from a recent address of Moynihan's: "A man beyond middle life finds by degrees that he takes less interest in his meals, his food loses its relish and presently becomes distasteful. Life in many of its aspects seems to lose its zest, neither work nor leisure are enjoyed, and depression, increasing anæmia, and loss of weight are soon observed. It is not for many weeks, perhaps months, that vomiting is noticed, which is due to the gradual enlargement of a growth which, beginning on the lesser curvature of the stomach, spreads downward on one or both surfaces, until it attains such size that the pyloric antrum becomes narrowed and obstruction results. In a number of cases hæmorrhage is the first symptom. The sudden vomiting of a considerable quantity of blood in a patient supposedly in good health especially points to cancer. If the patient has an early history leading to gastric ulcer and there comes later uneasiness after meals, loss of weight, anæmia, distaste for food, intolerance, and later refusal of solid food, vomiting, and hæmatemesis, the diagnosis of cancer is quite sufficient to warrant operation at once."

The symptoms are practically always similar in nature to those described; food, especially meats, either fat or lean becomes distasteful. There is a sense of uneasiness, distress or "stagnation" in the stomach region, as it is sometimes called by the patient. The patient may tell you that the food remains in the stomach and does not pass on as it should. Soon an easily palpable tumor appears in the epigastrium, the anæmia increases, and at times there may be apparent temporary improvement. Dr. J. E. Coleman, of Fayetteville, W. Va., recently asked me to see a rather peculiar case. This patient even after a tumor could be felt, under careful dieting, at one time, gained ten pounds in weight. On abdominal section the growth was found to be so far advanced as to be inoperable. There had been no noticeable bleeding, but on Dr. Coleman's attempt to use the stomach tube there was serious bleeding. In four cases of my own the first thing that caused the patient to seek medical aid was serious gastric hæmorrhage. In most cases the trouble begins rather vaguely, and the patient thinks he has indigestion, etc.

An examination of the stomach contents often shows blood, yeast, pus, and bacteria. Since the trouble often follows gastric ulcer there is usually a gradual transition in symptoms as this change comes about. These patients have for a long time

had attacks of indigestion. These are characterized generally by pain appearing always at a definite interval after food. This is a longer or shorter period, dependent on the character of the food taken, when liquids are taken the pain comes quickly and leaves in the same way. When heavy solid meals are taken the pain comes more slowly but is equally slow in leaving, and a tender spot can be usually made out about the epigastrium where the pain is localized. The pain may radiate to one side or the other or through to the back, vomiting comes with neither regularity nor frequency but gives great relief, and the patient may acquire the habit of inducing it. Attacks are more frequent in the winter season, and worry is a frequent predisposing cause. The patient is usually known as a dyspeptic living on a restricted diet. The unfortunates learn that certain articles of food bring on these attacks. They limit the amount of what they eat and sometimes do not have the pleasure of one full unrestricted meal for years.

When cancer is implanted in the ulcer or its scar there is a slow, progressive transition that becomes more and more severe. There is great stomachic distress at times relieved by belching. The food may be restricted to liquids, and there is a marked loss in weight. The facial expression is that of anæmia and worry, after the cancerous growth has become established, the distress after eating may be continuous. The patient who has ulcer rarely has a distaste for food, but after cancer is well begun there is a positive repugnance, food is abhorrent. There is little or no freedom from pain, this pain is not severe, and the patient may not complain of it. Domestic remedies such as mustard plasters may be applied for its relief. There is uneasiness or a feeling of sinking in the "pit" of the stomach. The food lies heavily, regurgitation with a nauseous bitter taste may be a frequent symptom. In most cases there is flatulence and eructation of gas. At times the gas and vomited matter is exceedingly offensive. The features are sharp and withered, and there is a shrunken appearance of the skin which is dry and harsh, the appearance of anæmia is more marked in the face than elsewhere. There is a tinge suggestive of jaundice. Pernicious anæmia is suggested, and there is indifference to many things of life which formerly held much for the patient. Progressive loss of bodily strength is noticeable. There may be increasing drowsiness and desire for sedentary life.

In the pyloric form vomiting comes early and dilatation of the stomach soon occurs, then food stasis and periodic return of the food occurs. Vomiting is the symptom of prime importance. The presence of a growth anywhere on the stomach wall seems to seriously interfere with the moving power of the stomach. The examination of a test meal composed of albumin principally should show in characteristic cases absence of free hydrochloric acid, a diminished total acidity, the presence of lactic acid, and the Boas-Oppler bacilli; gastric analyses give little or no help in the early cases but are often positively indicative later.

In another class of cases, especially in people of middle age, no history of any previous illness point-

ing to gastric ulcer can be elicited, a distinct constantly sustained illness the persistence of which suggests organic disease may be the very first warning. This persistence attracts attention and suggests serious organic disease. Pain after taking solid foods soon becomes so severe that the patient is reduced to living on liquids; there is loss of weight, sometimes vomiting or blood in the stools. In many cases of this sort gastric ulcer has never been suspected. The ulcer stage may have been of short duration and in that way passed unnoticed. In Moynihan's last one hundred cases of cancer of the stomach he found that out of every three, two had a previous history of gastric ulcer. Ulcer certainly is a markedly predisposing cause and precedes nearly all cases of stomach cancer. To quote a surgical truism the onset and persistence of dyspepsia in a man over forty years of age, who had enjoyed good health is a suspicious circumstance, one very suspicious of carcinoma. As regards the relation between ulcer and carcinoma it is only the old surgical principle that scar tissue and local irritation are essential predisposing causes.

Evidence of transition from simple ulcer to malignancy can seldom or never be found post mortem. A friend of the writer once said that when one did an autopsy he conveyed a message of wisdom from the dead to the living. Quite true in most cases, but not here. Our knowledge in these cases comes from the operation room not from the cadaver room. Specimens showing the transition stage are not found post mortem, they must be obtained from the operating room. Dr. W. J. Mayo was able to demonstrate the fact that cancer had sprung from the base of an ulcer in fifty-four per cent. of his cases of resection of the stomach.

Most cases of malignancy are situated on the anterior stomach wall either on or near the pylorus.

Since the only rational treatment now known is operative, Rodman's excision of the ulcer bearing area will always be of much value as a means of prophylaxis. While exploratory section is as a rule to be deprecated it occasionally acts as the court of last resort in these cases. If the numerous patients who are suffering and likely to suffer from this terrible disease are to have any greater prospect of relief or cure than they now have the number of exploratory operations will certainly have to be increased. Since there is never proof positive of cancer in an early stage, exploration is a godsend.

I fully and unreservedly believe that operation should be advised in all cases of chronic gastric ulcer of more than recent standing. The diagnosis of gastric ulcer is easy and accurate. The later in life the more urgent the need for operation.

Whenever there is gastric stasis a mechanical blocking can only be relieved by mechanical means. Medical treatment is powerless to cure either of the conditions, if these precepts are followed our patients with carcinoma will not so often reach the inoperable stage.

As a general rule the operative mortality after gastrectomy for cancer will be from fifteen to twenty per cent., though this will vary much according to the skill of the individual operator and the class of cases selected for operation.

ECONOMICS OF HEALTH.

By R. J. BEHAN, M. D.,
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The first duty of a commonwealth is to make its subjects happy and content. Happiness is the result of convergent forces acting in the same direction. It is a term used to describe many different moods by many different people. Some are happy when they have a full stomach and a soft place to sleep—these are those whose wants are easily supplied. Others are happy when they see their old age assured of rest and peace because of the competence they have laid aside. Others, again, crave greater things. Ambition has fired them and they want money, riches, ease, comfort, power, influence, and command. These will not be happy—will not be content—it will make no difference to what state or to what sphere they may rise, always and ever ambition will play upon their heart strings, and when ambition plays content departs. To this class the state can give nothing, for they claim from it something which they themselves alone can provide. They claim peace and content, but cannot have it because the path of desire, the anguish of longing, has hold of their being and controls their thoughts. The state, though unable to aid the last, can help to make the former two classes happy by granting to them the means to obtain this happiness, and what is the greatest means to human happiness? Is it not health, health which is greater by far than wealth and riches, for it produces a sense of well being, a feeling of satiety that nothing else can give. Therefore, the state owes its citizens to see to it that they are healthy and are well. It owes it to them because of their claim upon it, and it also owes it to itself, because on the health of the citizens depends the welfare of the state, and the class of citizens upon whom the welfare of the state depends are those who are the transformers of the raw material into useful or artistic objects, the tillers of the soil, the laborers in the mines, the woodmen in the forests, the transporters of the merchandise from place to place.

It is upon these ultimate productive factors that the welfare of the state depends. Upon their productiveness, upon their ability to work, that prosperity rests. If they should be disabled, if they should refuse to work, the wheels of industry would cease to turn, and want and poverty would descend upon the people. Therefore it depends on how much work, how much labor each of the ultimate factors can perform as to how much wealth, how much prosperity the state can command. If one of the factors is injured and incapable of work it takes so much away from the state. The proportion of prosperity taken away from the whole prosperity by the disablement of a single factor is very slight, but if 1,000 or 10,000 factors were disabled it can easily be seen that the loss would be very great. This loss of production would not be the only loss, for we should also have to calculate the loss incurred by friends and relatives for the care and attention of these disabled factors, and the time and money spent upon their care would also be taken from the store of the state.

Among the numerous disabling diseases which at present are in our land the infectious diseases are

perhaps the ones which are the cause of the most hardship and distress. It is this class of disease that the state should be most active in eradicating. The principal infectious diseases, and under this heading I also mean contagious diseases, are:

Tuberculosis (the white plague), typhoid, syphilis, gonorrhœa, measles, and scarlet fever.

Of these at the present time I shall consider tuberculosis.

It is a fact that about 110,000 people die annually in the United States from tuberculosis. This is based upon the census of 1900. It represents a little over 10,000 per 100,000 deaths or a total of 442.2 per 100,000 of population. In England and Wales for the year 1899 the rate was 133.8 per 100,000 of population. Thus we are far in excess of this—having yearly in the same proportion of population more than three times as many deaths from tuberculosis as do England and Wales. To further illustrate the prevalence of consumption, one out of every eleven deaths is caused by it, and one out of every six sick people are ill of it, and one out of every twelve who are ill of it die of it. The United States, according to the census of 1900, had a population of 76,000,000, with 110,000 deaths from tuberculosis, or almost 0.15 per cent. of the total population.

If the value of each life lost is only \$1,700, then the total economic loss to the United States due annually to deaths from tuberculosis would be \$187,000,000. In the United States there were in 1900, 27,528 deaths due to the following preventable diseases: Scarlet fever, measles, diphtheria, and typhoid, and, representing the potential loss as \$1,700 for each death, the total loss annually would be \$46,797,600, or only about one quarter of that due to tuberculosis.

As tuberculosis is particularly a disease of adult life, there being 89,305 deaths occurring between the ages of fifteen and sixty, a time when the earning capacity of the individual is at the highest, it follows that if the average duration of tuberculosis is two years and the average wage per annum is \$700, the wage loss during the time of the disease would be \$1,256,270,000, or an annual loss of \$625,130,000; and when to this is added the living expenses of the patient and the cost of medicine, nursing, etc., which I have estimated at the moderate sum of \$300 per year, it amounts yearly to \$26,791,500, which added to the annual wage loss totals \$839,921,500, and this represents only the loss from patients who have died. It does not represent the loss from the patients who get well and have to be treated and are unable to work—these patients are twelve times in number those which have died. It is estimated that there were in the year 1900 about 1,250,000 tuberculous patients in the United States. At an actual loss of \$1,000 for each patient, we have the enormous total of \$1,250,000,000 lost annually from care, etc., of those sick from tuberculosis. This added to our \$839,921,500 will make a grand total of \$2,089,921,500 lost annually from one preventable disease. This does not by any means take into consideration the anguish and distress caused by this same disease. If the commonwealth which is represented by the various States can negate this vast loss what a numerous saving, both of treasure

and of happiness. After this consideration of statistics it behooves us to ask, "Can the state prevent this fearful loss?" I make answer, and say that it can. It can stamp out tuberculosis, and will stamp it out as thoroughly as is smallpox at the present time. If it can do this, how, and in what way?

(1) By prophylaxis which includes the taking of precautions against its transference from one community to another, and the state can best regulate this by registration of all cases and a better diffusion of knowledge of the omnipresence of this disease among the people and of its means of prevention and of cure.

(2) By care of the tuberculous sick. The tuberculous sick should be cared for, not only through reasons of humanity, but because by their proper care and training the tendency to carelessness which is always present in every case would be markedly lessened. Carelessness on the part of the tuberculous sick often makes for or against the spread of the contagion, and when we consider that each tuberculous patient represents a direct loss on an average of \$10,000 to the commonwealth, would it not be wise for the state to invest some of its surplus revenues for the extermination of this most dread disease? All tuberculous persons who are not able to afford to themselves proper care and treatment should look to the state to provide the necessary means to combat this disease, and the means are food and treatment. The State dispensaries should be milk bureaus as well as drug distributing stations. They should look to the housing of the tuberculous poor. A tuberculous patient in a dark and dismal tenement, surrounded possibly by a numerous progeny, is of no avail to himself in the fight against his affliction and is a positive menace to others. These patients the State should remove to proper hospitals. If they cannot be taken into sanatoria for tuberculosis, arrangements should be made with general hospitals whereby they could be treated in wards set aside for them at a cost to the State of the per capita cost of treating other patients in the same hospital. This cost in no case to be more than a dollar per day. In this way a place would be found for those most unfortunate ones who have nowhere to go, and who, sick unto death, lie around their homes and are living distributors of the disease. When convalescence occurs there should be broad fields and fresh air for the consumptive in order that he may regain his strength and activity. While the consumptive is undergoing treatment, his wife and family, or if single, any who may depend upon him should receive enough to keep them from want and starvation; for tuberculosis is, to quote Christopher Easton, of St. Paul, a social malady caused by social neglect, and the cost of it, therefore, should fall for the most part on the community. Any money spent in this way would rebound one hundredfold to the state and to its people.

After looking to the care of its sick and needy the state owes it to its subjects also to see to the regulation of the great corporations, for it is a deplorable fact that many men injured in our great industrial plants are ill cared for by the corporations who employed them. It seems to be a special aim of these corporations to escape as much as possible of the burden of caring for their maimed and injured.

These men who are injured in the performance of their duty, be it either because of their own carelessness or the carelessness of others, are generally of that great class who can but ill afford to be idle. Generally they are of the lowest class of working men. Those who are earning but a modest sum per week and whose wants require the expenditure of all of their weekly stipend. These men when they are injured have no means of providing for the wants of their families, and as a consequence the wants have to be provided by the neighbors or by organized charity. Has the corporation any moral right to place upon the community the cost of caring for those maimed in the advancement of its own welfare? Has it any right to be the cause of depriving a man's family and those depending on him of the means of sustenance and comfort? It may have millions of surplus profit, its officers may roll in wealth, while the dependents of its injured are left in poverty and want. Can this fearful injustice be productive of anything but hate in the heart of the poor afflicted family? Why, even the dog injured in his master's service is cared for and the puppies of this same dog are fed and nourished. Is the workingman's family not as good as the dog's? Does he not love his children, does he not care for them, does he not feel their privation and their want, and can he, can he love the corporation which is the cause of this privation and of this want? Is this wanton neglect not enough to instill black, enraging hate in his heart, especially when he sees the result of his work bring riches to some and poverty and distress to himself and to those most dear to him? These thoughts are more apt to be instilled into his mind since for lack of education, of training, and of culture he is more likely to look upon these conditions from a lower level, with a lower standard than is his more cultured neighbor who has had greater advantages of birth and training. His view is nearer that of the savage who regards it as his inalienable right to live from the fruits of God's country and who considers that God owes it to him to sustain and to provide for him. And, in a way, God, who is represented in a civilized country by the state, does owe it to him to care for him in his needs, to guard and to protect him in his distress, for of himself he can do nothing. The state is bound by every solemn bond to see that he is guarded in his daily work by proper barriers, to see that when injured he is properly cared for, to take upon itself the care of his dependents, and since he is maimed while in the employ of a large corporation the state should see that these duties are fulfilled by these vast aggregations of capital and exploiters of labor.

Therefore, I would advocate that these corporations be compelled to institute a system of prophylaxis, a system of protection to their employees: First. In the method of employment. It is the custom to-day to hire ignorant foreigners to do the laboring work around a mill. It is their duty to be in near proximity to dangerous machinery. A false movement of the arm would perhaps mean its loss or disablement. A too great sway of the body would mean a blow from a belt or the arm of a crane. A sluggishness of action begets a crushed foot. In these mills accidents happen so often that no notice is taken of any but the greatest disasters. It seems to be a matter of course, but every injury,

every death means an irremediable loss to the state. How prevent these accidents? They may be prevented by: 1, Care in the employment for any work which in any way may be dangerous to men who are not thoroughly conversant with the language and with the work which they will have to do. 2, Protect the machinery: All dangerous revolving pistons, flying belts, etc., should be protected by a wire netting so that no one can come in contact with them. Machinery should be provided with safeguards for the workingman in addition to time saving devices. The company, or corporation should, as so many of them are doing now, provide the plant or factory with adequate ventilation, and, if possible, recreation grounds, gymnasium, and a library. It is an uncontested fact that the better the health and the happier and more contented the worker, the better is the product of his labor.

Second. The second requirement of a company or corporation in regard to the health of its employees should be to see that they are properly cared for when injured. To-day when a man is injured in a mill, he is hurried to the nearest hospital, provided the company does not maintain in its plant an emergency hospital of its own, and every mill or factory having over 500 in its employ should have a room or suite of rooms set aside and properly equipped for the care of the sick and injured. Most mills and factories are to-day so equipped, and most of the big department stores are too, but the equipment, kind, quality, and location of rooms is left to the judgment of the officers of the company, which selection, I hold is the prerogative of the state, because the sick and injured are her wards and it is her right, nay, her duty to inquire into the measures devised for their relief and safety.

For the care of the injured while in the hospital, the company pays the hospital authorities, but generally at a lower rate than is actually spent by the hospital for the maintenance of such a patient. Thus a part of the expense is thrown upon the state or upon other individuals. It is also a fact that the physicians and surgeons who attend these cases receive no remuneration, putting the big, powerful, rich corporation, whose duty it is to see to the care of their injured in the same class as the pauper poor. Have these physicians any legal or moral right to render service to this company for nothing? Surely it is not an object of charity, nor is it seeking alms, this company which is yearly making millionaires of its most favored officers. And why does the physician do this? Is it not because he is born to sacrifice that he bears all? Otherwise, he would see the injustice being done him and rightly would refuse to donate his time and labor. And how unjust of the corporation to expect all these favors. Is it not true that if a part of the machinery would get out of order, it would repair it and would pay all who aided in its repair, but *man*, the most integral part of its vast machinery, it neglects, because he is so plentiful that it can get many more of him to take his place when injured and absent, and if the company is so negligent of its obligations and neglects to provide such care and to pay for it, should not the state compel it to do so?

Our attention is now directed to the company from an economic point of view, for, when an employee of any company is injured and he is hurried

off to the hospital, his salary generally ceases from the date of his injury. Disabled, while in the employ of the company or corporation, the wife and children, mother or invalid father suffer for the too great zeal, or mayhaps the too great carelessness of their loved one. Is this right? Is this just? A great nation rewards her defenders and calls them heroes, and their relations it cares for, even to their youngest child. It helps those who helped it, but the corporation, in some cases as great as the states of old, shirks this duty and evades this responsibility. Does not justice cry out that it should not be permitted to do so, but should be forced to grant to an invalid employee who has people dependent upon him for support the same salary when injured as when he was able to perform his daily work? This would go far to produce content, and peace of mind to the family and to the injured man himself. His sick period would be shortened, for worry would be removed from his mind, and he could lie in the hospital bed with greater comfort, when he would know that want and starvation were not staring his family in the face. How such provision could be managed would be left to the company, but the state should see to it that the company fulfills its obligations. After recovery from injury there is a long period of convalescence in which no work can be done. The remuneration should be continued throughout this period until such time as the patient would be able to resume his usual occupation.

If death should result to the employee from injury received while engaged in the performance of his work, it is the duty of the company to set aside such a sum as may compensate the family for the loss of the wage earner, and this sum determined according to the yearly stipend received by the worker, should be such that it may be of material assistance in the maintenance of his family; also this sum should not go to the family but should be entrusted to the state, and the family should only receive a set part of it yearly, such part to be determined by the age and character of the family. As the family grows up and becomes capable of earning a living, the sum apportioned to each member of the family should be gradually decreased and as each becomes of age, should cease. The excess, if any, should then revert to the State and be credited to the company's fund used for emergency and running expenses. The cost of maintenance and distribution of these benefits should be defrayed from a three per cent. tax on the sums entrusted to the state. If such assistance should be enforced, much of the poverty and distress prevalent at the present time would be abolished.

As to how the corporations shoulder their responsibilities, I will quote you a few facts, collected by the Pittsburgh Survey in 1906-1907. Five hundred and twenty-six persons were killed in industrial establishments in Allegheny County, of whom 29.97 per cent. were chargeable directly to employers, and 27.85 per cent. were chargeable to both employers and employees, or over fifty-seven per cent. were chargeable directly or indirectly to the employers; and of the nonfatal cases of whom 2,000 persons were sent to the hospitals in a year, sixty-eight per cent. were due directly or indirectly

to the corporation. Let us see how the corporations bear the burden. It was found that 304 fatal cases investigated were contributing to the support of the family, and two thirds were married. Eighty-eight of the families left did not receive a cent of compensation from the employer. Ninety-three of the families left received not more than \$100, a reasonable amount for funeral expenses. Sixty-two of the families left received between \$100 and \$500. Sixty-one of the families left received more than \$500, mostly under \$1,000. A few of the families left received as much as \$3,000. Thus 59.5 per cent. of the families were left to bear the entire income loss. Is this justice?

The corporation paid \$1 per day for many of the 2,000 hospital patients, for others, it paid as low as \$5 per week, while for many others it paid nothing at all. Is this right?

625 HOMEWOOD AVENUE.

THE TREATMENT OF OPHTHALMIA NEONATORUM.*

By MARCUS J. LEVITT, M. D.,
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Ophthalmia neonatorum is an acute inflammation of the conjunctiva of pyogenic origin. It may either contain, in severe cases, gonococci, or in mild cases, streptococci, staphylococci, pneumococci, *Bacilli coli communis*. The disease makes its appearance on the second or third day, rarely after the fifth day. If it appears later than this, the infection can no longer be attributed to the act of birth, but to the subsequent infection of the vaginal discharge of the mother.

F. Jager was the first to discover that gonorrhoea can be transmitted to the eye. Piringer, in 1839, had already pointed out that gonorrhoeal ophthalmia could only be produced by bringing particles of secretion in contact with the conjunctiva.

Perhaps in no other disease does prophylaxis play such a great rôle as in ophthalmia neonatorum. The physician should find out if the pregnant woman has a mucous or purulent discharge from the vagina, and every precaution should be observed before the child is born. Credé by his prophylactic method has reduced the number of ophthalmia neonatorum from 10.8 per cent. to 0.1 to 0.2 per cent. According to various statistics this disease is responsible for 10 per cent. of all living blind persons.

You are all, no doubt, acquainted with Credé's method of prevention of ophthalmia neonatorum; with your permission I will review it. When the child gets its first bath, its eyes should not be wet with the water of the bath. After the bath the eyes should be cleansed with boiled water, and then a drop of 2 per cent. of silver nitrate solution dropped into each eye and neutralized by a normal salt solution.

Why Silver Nitrate Is Especially Indicated in Gonorrhoeal Ophthalmia. Although ophthalmia neonatorum is produced by microorganism, one would

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naturally expect to get the best results from remedies possessing disinfecting qualities, yet it has been proved that silver nitrate surpasses the disinfectants for this purpose. Silver nitrate is especially poisonous to the gonococcus and it effects its removal mechanically by producing an eschar and thus leading to the exfoliation of the superficial layers of epithelium containing this microbe.

Before treating a case of ophthalmia neonatorum every physician should examine the pus from the conjunctiva for the gonococci, which examination can be easily accomplished. The best evidence of gonococci is obtained from the cover glass preparation. The cultivation of the gonococci is not imperative, as it gives less satisfactory results than cover glass investigation. The gonococci may be found days or even weeks after the secretion has stopped. The mild cases which do not contain gonococci yield easily to the treatment and can be cured in from a few days to two weeks, while those containing gonococci run a severe course and last from two to three months.

TREATMENT.

For convenience' sake I have divided the treatment under three headings: 1, Personal attention to the patient; 2, application of cold in first stage and frequent cleansing; and 3, the application of silver nitrate and after treatment.

1. *Personal Attention.* It is the duty of the physician to find out who is going to carry out the treatment of the little patient, and to give explicit instruction. I wish to emphasize this particular point, as very frequently the little patient is left in the hands of an irresponsible person, and it sometimes takes twice or three times as long to cure the infant. The parents and attendants should be informed as to the danger of infection. Fuchs cites a case where a whole family was infected with blennorrhœa by a child having ophthalmia neonatorum.

The physician should examine the patient's eyes daily to see the condition of the cornea. In order to accomplish this the infant is taken where a good light can be had; the physician places the forefinger of his right hand on the supraorbital ridge, with the thumb of his left hand on the infraorbital ridge, care being taken not to press on the cornea. Before examining the eye, the pus must be washed away with 1 in 10,000 bichloride or boric acid solution. If the cornea is in good condition, a favorable prognosis can be given.

2. *Application of Cold and Frequent Cleansing.* In the first forty-eight or seventy-two hours cold application should be applied by means of gauze pads placed on a block of ice and changed every minute. As soon as the inflammation of the lids subsides, cold should be discontinued. In mild cases the cold application should be applied for half an hour and then stopped for an hour; while in severe cases the application should be continuous.

Frequent cleansing of the eyes is very important. This can be carried out by washing the eyes every ten or fifteen minutes either with a 1 in 10,000 solution of bichloride or boric acid, either by a pledget of absorbent cotton or an eye dropper. Cotton, pad, or anything coming in contact with the pus should be immediately destroyed.

3. *Silver Nitrate Application.* As soon as the suppuration starts, one per cent. of silver nitrate should

be applied by the physician to the upper and lower lids. If the suppuration is very profuse, the application must be done twice a day. In gonorrhœal ophthalmia the silver application must be continued at least six weeks. It is useless to instill a few drops of silver nitrate, as it is usually washed away immediately by the pus.

When the swelling of the lids and the secretion of pus have subsided, a tepid solution of 1 in 10,000 bichloride or boric acid can be used every three hours.

The silver application must be applied every second or third day until the hypertrophy of the lids has entirely disappeared.

Protargol and argyrol are inferior to silver nitrate in gonorrhœal ophthalmia neonatorum, but may be used in milder forms of ophthalmia neonatorum. Stevenson, in his prize essay of the British Medical Association, 1907, starts in with a 25 per cent. solution of argyrol several times a day, according to the severity of the symptoms. If in two or three days there is no improvement, he resorts to silver nitrate. The advantage of argyrol over silver nitrate is that it is nonirritating and soothing to the inflamed tissues. It must be freshly prepared and kept in a dark place.

Should there be an infiltration or ulcer of the cornea, atropine, one per cent., should be instilled a few times a day. If there is a deep ulcer of the cornea, the eye should be cocaineized by a five per cent. solution, and the ulcer touched either by tincture of iodine, pure carbolic acid, or galvanocautery or thermocautery. Corneal ulcer is no contraindication for silver nitrate.

In conclusion, I hope I shall see the day when with the cooperation of the physicians and general public the prophylaxis will be carried out to such an extent that ophthalmia neonatorum will become a rare disease, and, in the words of Hermann Cohn's famous aphorism, namely: "Die Blennorrhœa neonatorum kann und muss aus allen civilisirten Staaten verschwinden."

202 VERNON AVENUE.

THE THIOCYANATES IN SOLUTION, THE NATURAL PHYSIOLOGICAL SOLVENTS OF THE BODY.

A Clinical Study.

Third Paper.

BY BERNARD R. LE ROY, M. D.
Athens, O.

That solvents existed within the living body in natural physiological solution, whose office was to resolve precipitates of various chemical nature, whenever they were caused by serious interference with the normal working of the system, has been believed in by the medical profession from time immemorial. That these solvents were also believed to be of complex chemical nature is evident from the complicated nature of the researches of the present day investigators. That the principal solvent of the body could be of a comparatively simple chemical composition was not dreamed, and has been overlooked by all investigators with but slight notice or remark.

The thiocyanates have been detected in the secretions and body fluids in extremely small amounts. Oftentimes they were not present in these fluids, and the investigator, contented with the mere mention of the fact, passed this group of very interesting solvents with a few words. Fenwick, perhaps, was the first to make a clinical study of these salts, believing that they were especially connected with the function of the liver (1).

Other investigators, especially Michaels, Ferris, Low, Kirke, and many other stomatologists of this and foreign countries, are making careful studies of this and other chemical constituents of the saliva with the hope of mastering the secret of their presence in the secretions; with the vague idea that the thiocyanates have to do with the power of the normal saliva, to inhibit the growth of bacteria, in the mouth.

The thiocyanates are not germicides in the strength in which they are found in the saliva. The writer has found that germs will grow in solutions of thiocyanates in strengths a thousand fold greater than that in which it is normally found in the saliva or body fluids. That when calcium, magnesium, and silicon in small quantities are added to these thiocyanate culture media and then planted, that there is a decided inhibitive action brought into the equation; and from further study the writer learned that the normal saliva possesses this inhibitive power to a degree, being overpowered when the ammonia content drives the thiocyanates out and thereby causes the precipitation of the earthy salts. It is then, and not until then, that the saliva becomes a nidus for the microorganisms which infest the mouth; nay, even then do the more virulent forms of germs enter the mouth and throat and commence their nefarious existence.

Does it not strike one as a strange fact, when he learns that in the young, vigorous, and rapidly growing the thiocyanates are found in greater quantities than in the person that has reached full development? That in the sick, weakly, chronic invalid—in the victim of brain or nerve disease, in the sufferer from exhaustive discharges, in the degenerate, in the cretin, in rickets and kindred forms of faulty development, there is a diminution of the content of the thiocyanates in the body fluids, in a minimum of cases; while in the great majority of these cases there is an entire absence of the thiocyanates from the saliva and body fluids. This is also true in all cases of faulty or arrested development.

The writer has found that in these cases when the ammonia has been regulated and controlled by means that will be spoken of later, and the thiocyanates administered in aqueous dilution, that a rapid and steady improvement set in at once and continued as long as the conditions are kept under a favorable supervision.

This form of treatment has been carried out successfully not only in the diseased conditions mentioned, but in chronic forms of venereal diseases, and in all forms of senile degeneracy, as well as in conditions of a purely local nature, such as cataracts, arcus senilis, and deposits in or near the joints, or elsewhere about the body, meeting with a success that is surprising.

In cases of cataract and in the senile have the

greatest changes been noticed. In the senile cases, medication was based upon the results of the studies mentioned in the foregoing paragraph, and I rejoice to record that in these cases the change for the better was all but miraculous in its good effect.

From many thousand analyses of the saliva, covering a span of life from the nursing babe to extreme old age, I learned that the ammonia, when above a point that may be called normal and which is nearly equal to the content of the thiocyanates in the saliva and the body fluids, causes the latter to fade away and disappear from the secretions. This fact was noticed as we advanced our study in life. Ordinarily in the middle aged the thiocyanates were present in mere traces or absent; in the well preserved old man the thiocyanates were present in quantities that would be considered normal in young people of between twenty and thirty years of age. In the sufferer from disease and the infirm aged it was but faintly present or absent; in all but a few cases it was absent. In the prematurely aged it was absent. In all cases when absent, the ammonia content was increased.

In summing up the result of this study it became clear that in the healthy and growing being the thiocyanates were present in normal quantities, from 0.0025 to 0.04 per cent., that the ammonia was present in very small quantities, 0.0025 per cent. or less, that when this condition was reversed then disease was in control of the body, or signs of senility were present.

How awful to contemplate the premature advance of old age, when we are but just entered upon our life's work.

As has been stated in my previous papers, these studies were made possible because of certain research work along original lines being carried out by the writer on the idiopathic epilepsies, the results of which are yet to be published.

Have I found in the thiocyanates a cureall? No! In bringing these salts before the medical profession it is because of their physiological worth in preventing disease and secondly because of their power in overcoming diseased conditions as found through proper clinical use.

How to use the thiocyanates? They are given in aqueous dilution, first making use of a 1 in 1,000 solution in distilled water; a teaspoonful of this at mealtimes and at bedtime. The percentage may be increased, but I never increase the dosage. In certain cases I make use of a two per cent. solution.

As it is well known that the thiocyanates (English, sulphocyanides) are the most active poisons to both animal and vegetable life that is known, it will appear to the clinician that extreme care in administering the thiocyanates must be taken, nothing must be taken for granted, the blood pressure must be studied with care and kept in a normal limit by increasing or diminishing the dose of the chemical. It will be highly advisable to give the patient scrub baths with rub down of an acid solution (2), to regulate the bowels by some simple means, and to order the patient to live a simple life.

The scrub bath followed by the acid wash down are as essential as the dietary control, for in cases where the thiocyanates were indicated and given without the baths to reduce the content of ammonia

the chemical wrought harm, and all disease symptoms were intensified. So one must always endeavor to lessen the content of ammonia in the system before giving the thiocyanates (3). Again, in a given case in which the patient is well advanced in years, where the baths are given with care, the thiocyanates will not return in the saliva nor in the secretions as will be the case in persons in adolescence. In all these cases the thiocyanate must be administered as directed to effect a cure. On the other hand, in certain cases under thirty years of age the baths without the thiocyanates will almost always bring about the return in the saliva and the secretions of the normal amount of the thiocyanates. This I have noticed in all quick recoveries even though medicines were not taken. I have had a number of opportunities to examine the saliva and secretions of persons making a quick and marvelous return to lines of health through the power of the mind, and in every case did I find the thiocyanates in normal amount with diminished amount of ammonia. This is so positive in its meaning that in several cases of so called cures I have predicted a relapse, simply because the ammonia content was far above normal with entire absence of the thiocyanates, and it was as I said. The power of the mind may and can hold up the failing powers of an invalid, yet, at most, this is always limited in time of action and must be used accordingly.

The reaction of the normal amount of the thiocyanates in the saliva is indicated by a blood red color given the saliva with an acid solution of ferric chloride (4).

Because of it being less poisonous than the other thiocyanates the writer has chosen the sodium thiocyanate (Merck) and has found it to be entirely satisfactory in every way.

One peculiar fact observed I wish to state was that when persons, who have been taking the thiocyanates for a sufficient length of time to permit the system to become saturated with the chemical, cannot eat vegetables of the allium family, because of the acute symptoms of poisoning which invariably set in after eating onions, leeks, etc. These symptoms are as follows: Full throbbing headache, dizziness, vomiting, prostration, with anxious feeling as if something dreadful was about to happen: herpes on lips and face, nose, throat, mouth, and tongue sore and painful, tongue may be much swollen, yet, without ulceration; loss of appetite, fever, restlessness; and should the person be an invalid, all symptoms will be intensified and the patient rapidly grows worse. This is caused, no doubt, by the allyl sulphide contained in the vegetable, which combines with the thiocyanates to form a more active poison than either one is when taken separately.

Once more do I wish to caution the reader to study his patients and watch carefully while giving the thiocyanates until such time as he may become familiar with the chemical, and the physiological action of the thiocyanates. Never try to rush your cases, for there is great danger in that manner of treatment. Always give small and repeated doses of the chemical, well diluted with water, and thus pass from day to day, noting the changes. Do not give the thiocyanates with any other chemical, such as the heavy metals, and especially the salts of mer-

cury, iodine, and bromide. When potassium iodide is given in appreciable doses the thiocyanates disappear from the saliva and from the body fluids (5).

Clinical evidence will be adduced to show that the thiocyanates have to do with the ductless glands. In cases where the mucous glands of the head were afflicted, under proper treatment with the thiocyanates, quick recovery resulted. Also in cases where there was an oversupply of the thiocyanates in the system, these glands were unduly affected.

By laboratory methods I learned that the suprarenal glands gave chemical reaction for the thiocyanates with ferric chloride. This reaction is at first purple, passing to a dark red in the presence of ammonia. Now, whether it originates in these glands or not is not known, but that it has direct action on the vital organs through the blood is certain, for it will appear in the saliva within a few minutes after being taken in a capsule. It may be detected in the urine in the same space of time.

No remedy can or will reduce the blood pressure so kindly and quickly, when given after a proper manner, than the thiocyanates.

The following clinical cases have not been published hitherto:

CASE I.—Boy, aged five, blind in the right eye since the age of six weeks, the result of an attack of ophthalmia neonatorum. The eye presented the appearance of having a great chalk white scar over the front aspect of the eyeball. This scar was of such a whiteness that it was very noticeable even at a distance. Otherwise the lad was in good health.

Examination of the saliva showed that the chemical constituents were about normal, but in spite of this he was placed upon a course of treatment as has been outlined, with a 1 in 1,000 solution of the thiocyanates, small teaspoonful at meal times.

At the end of eight weeks, the scar was more than two thirds gone and that which remained had lost most of the chalky whiteness, and was assuming a bluish cast. As has been noticed before, the part of the scar, like the cataract, passes into solution in such a manner as to permit the outer upper portion to melt away first, so was it in this case, the scar tissue that melted away was the outer and upper portion, leaving the lower and inner portion to be resolved later. This, no doubt, points to some physiological reason that is not very clear to the writer. But, what I wish to relate is that the eyesight became equally as good in the right eye as it was in the left one, excepting that the scar tissue interfered somewhat when the child wished to observe objects that were to his left.

CASE II.—Mrs. D., aged about fifty-four, had been an invalid for many years, and has been confined to bed for some fourteen years. All bony joints in arms and legs are ankylosed. The carpal and tarsal bones were melted away until only thin spicula remained, and where the joints had been there was nothing but loose tendons, and the fingers and toes could be bent back in any direction upon the proximal part. Ammonia was found in excessive quantities, the thiocyanates were absent. Treatment was along the line discussed in this paper, and in addition to the thiocyanates the soluble lactate of calcium was given. At the end of the first month the patient had improved in general, and in particular gained in the power to take care of herself without assistance, she was very much relieved from the almost constant pain that was present, she looked much brighter and took more interest in things of daily life. She slept naturally, and without dreams as hitherto. The aged, worn expression left her, and she had a bright, pleasant expression that reminded her friends of how the patient looked when a young woman. The eyes became bright and clear. In every way decided improvement took place. The terrible pain from which she suffered in the smaller bones vanished, due, no doubt, to the soluble lime with which the system was being supplied. I shall look with interest to the end of this study.

CASE III.—Mrs. B., aged eighty-three, confined in bed

from senile disabilities, headache being severe, cataracts in both eyes, pain over and back of the eyes being most constant, was feeble and decrepid, had that mummified color in the face which is often noticed in senile patients. Treatment as outlined. In three weeks she was out of bed and able to take a train for a mountain resort. After two months of treatment, she was able to come by train some sixty miles to visit me, and I found her so much improved that I was really surprised. Her facial aspect was entirely clear of any discoloration, eyes were clear and bright. She stepped with free action and firmness, and mentally was bright as of yore, and looked to be ten years younger. She said that she felt younger and stronger and was enthused in taking the treatment. One thing she spoke of especially, that the deposit dropped from her teeth, that her mouth was naturally moist and with a normal taste. Her digestion was vastly improved. The cataracts were melting away, so much so that while traveling on the train she read the newspaper, a thing that she has been unable to do for some twenty years. The cataracts have faded until they are of a light pale blue color.

CASE IV.—Miss W., aged fifty-nine, incipient cataract in both eyes, suffered almost continually from influenza for the past three years, one attack would follow close on the recovery from a previous attack. She had pronounced senile stigmata, and, as has been said, was so susceptible to catarrhal infection that it seemed impossible for her to leave her bed for any length of time. Result of three months' treatment: Catarrhal condition vanished, she is now at an eastern seaside hotel for the season, feeling as well as ever she had during the past forty years, the senile stigmata are clearing up, and her facial aspect is one of a woman of middle life, and is steadily growing more youthful in appearance and in actions as time and treatment with the aid of the simple life supervenes. The cataracts are following the same course as in the other cases that have been reported. The precipitate is steadily melting away in the same peculiar manner as has been described; the eyesight is returning toward the normal as the lens clears from the fatty combination of calcium, magnesium, and silicon which formed the cataractous deposit.

CASE V.—Girl, aged twenty-three, pulmonary tuberculosis, greatly emaciated, coughed almost constantly. Tubercle bacilli were found in the sputum, night sweat, menses stopped for four months.

Treatment was as described, with the addition of a saturated solution of the soluble lactate of calcium, of which enough was added to the one per cent. solution of sodium thiocyanate to make a ten per cent. solution of the lime, a teaspoonful given with meals and at bedtime. Result of four weeks' treatment: No fever, no chills, no night sweats, cough almost gone, sputum was scanty and of a thick mucous nature, without taste; it was very difficult to demonstrate tubercle bacilli in the sputum. Appetite normal. Slept well and was gaining rapidly in flesh. Menses normal.

CASE VI.—J. B., aged forty, tuberculosis of the spine, with four abscesses open on the right hip, from which he had suffered for some twenty-eight years.

Treatment was given as follows: A two per cent. aqueous solution of sodium thiocyanate was made with distilled water, to which was added an equal part of a ten per cent. aqueous solution of the soluble lactate of calcium. This was given hypodermically twice each week for five weeks, in one drachm doses, under the skin of the back between and slightly below the shoulders.

Result of treatment: At the end of the first week the pus had changed from a thick, yellow, fetid discharge to a thin, watery, scanty oozing, with occasionally the discharge of numerous thick flakes of pus; at the end of the third week there was no discharge whatever, the openings healed and the scars were quite firm, and have remained closed since some seven months.

CASE VII.—Male, forty-nine years of age; insane, maniac depressive form, luetic, had been an inmate of the Athens State Hospital for the Insane for some years and had reached the state of dementia, did not know enough to care for himself, or to recognize his father, nor members of his own family; would not talk; extreme idiotic expression on face, with a constant discharge from the nostrils of a thick, ropy, yellowish, fetid mucopus, that was ever present and which the patient would eat with a relish as he did anything that was foul.

Treatment was given as in Case VI, and at the same time only the doses were given more frequent, being given every day for some three weeks, then once every eight days for two months. Result of treatment: At the end of the second week the nasal discharge had ceased and did not return, his mental faculties brightened up, his speech returned so that he asked me to send for his father that he wished to see him. At this point all treatment was stopped.

From these reports it will be seen that in the thiocyanates we have a solvent that will prove to be a great blessing to suffering humanity. But like most all new remedies it must be used with care and circumspection, else the abuse will soon bring the penalty.

I am more convinced than ever that the thiocyanates work through their molecular union with the earthy salts, thus producing a substance that is both soluble and assimilable, which the cells of the body readily take up and convert to their use, thus giving them the power to resist the action of certain poisons, and of certain microorganisms. From a study, which is but partially finished, I have learned that the cells of the body are given added strength to fight their battles, and that they are not so easily made the victims of the pathological germs; or, as I have said, it increases their offensive as well as their defensive powers.

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A SIMPLIFIED METHOD OF HOME MODIFICATION OF COWS' MILK FOR INFANT FEEDING.

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When "laboratory milk" is not obtainable and "home modification" has to be resorted to, we can greatly facilitate this process and obviate the difficult task of memorizing complicated formulas by selecting a milk formula of simplest composition (1:1, i. e., 1 ounce or its multiple of milk to 1 ounce or its multiple of a diluent, in which are included one teaspoonful of lime water for every ounce of milk, and one third of a teaspoonful of milk sugar for every ounce of the diluent) and preparing the other milk mixtures by modifying this "standard" formula.

Directions.—1. Bear in mind the standard formula (1:1), which is intended for babies six months old.

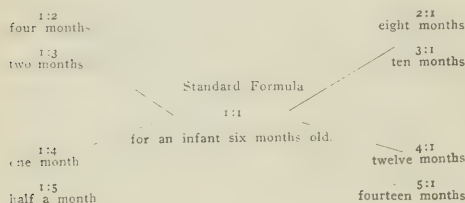
2. For infants under six months increase (about every two months downward) the diluent by one ounce or its multiple, using "top milk" as a base and plain or cereal water as the diluent.

3. For infants over six months of age, increase (every six months upward) the milk by one ounce

or its multiple, using "whole milk" as the base and cereal water as the diluent.

4. Include in the diluent one teaspoonful of lime water for every ounce of milk, and add one third of a teaspoonful of milk sugar for every ounce of the diluent.

In accord with these directions the following milk formulas are obtained:—



FEEDING SCHEME. (For 24 hours.)

Age of infant in months	Formula	Feeding, intervals	Number of feedings	Size of feeding in ounces	Ingredients for		total number of feedings (in ounces)				Approximate per-centage composition		
					Top ¹	Milk Whole ²	Lime water in ounces	Diluent Water	Cereal	Milk sugar in teaspoon	Proteids	Sugar	Fat
1/2	1:5	2 1/2	8	2	2 3/4	..	4 3/4	..	3	2 1/2	2.50	6	1.0
1	1:4	2 1/2	8	2 1/2	4	..	4 3/4	..	4 1/2	3	2.40	6	1.20
2	1:3	3	7	3 1/2	6 1/2	..	4 3/4	..	7	3 3/4	2.25	6	1.50
4	1:2	3	7	4 1/2	10 1/2	..	3 1/2	..	10 1/2	4 3/4	2.00	6	2.00
6	1:1	3	7	6	..	21	2 1/2	..	18 1/2	7	1.50	6	2.00
8	2:1	3 1/2	6	7	..	28	1 1/2	9 3/4	10	7	1.00	6	2.33
10	3:1	3 1/2	6	7 1/2	..	33 3/4	3/4	13 1/2	4	6	0.75	6	3.00
12	4:1	4	5	8 1/2	..	34	3/4	15 1/2	..	5 1/2	0.60	6	3.20
14	5:1	4	5	9	..	37 1/2	3/4	13	..	4 1/2	0.50	6	4.00

¹The upper eighteen ounces of a quart bottle = 6 per cent. fat, 5 per cent. sugar, 3 per cent. proteids.

The method of home modification of cows' milk just outlined is as exact (or as inexact) as the other methods in vogue, but has the advantages of being easy to memorize (i. e., 1:1, 1:5, and 5:1) and requiring no knowledge of higher mathematics for its calculation.

127 WEST EIGHTY-SEVENTH STREET.

RECTAL EROSIONS; A NEW METHOD OF EXAMINATION.

By STEWART LEWIS, M. D.,
Lakehurst, N. J.

I am convinced that a superficial form of anal fissure, which may be known as erosion, is far more common than is generally supposed. In most cases of hæmorrhoids and in many cases in which hæmorrhoids were absent I have found these little "raw spots" to be present; and very often to be the source of much annoyance and even suffering to the patient. Not only local symptoms but reflex aches and pains in abdomen and back I have often found and been able to easily and quickly relieve.

I believe them to be often overlooked because the symptoms are less severe than the classic ones of fissure, because the presence of hæmorrhoids satisfies the mind of the examiner, and because the erosions lie at the bottom of folds and are obscured by sphincteric contractions.

I would like, therefore, to urge a special search for these in all rectal cases and to call attention to a method of examination, new to the best of my knowledge, which I have found useful:

Instead of the usual speculum I employ the glass rectal dilators, sold by dealers in sets of three. One

of these, as large as patient will bear, should be lubricated with glycerin or some other transparent lubricant (not petrolatum) and inserted. The entire surface is at once open to inspection. The normal mucosa is pale from pressure; and fissures, erosions, or emboli are as clearly seen as if on an open page before you. Partial relief of pressure by tilting or partial withdrawal of the "speculum" may assist. An electric diagnostic lamp is useful.

As compared to the metal speculum it will be seen at once that this method is much less painful, and gives much better view.

For treatment: The area may often be reached without a speculum by separating the buttocks and encouraging the patient to relax. If necessary to employ a slide speculum previous knowledge halves the difficulties.

The most satisfactory treatment I have employed has been the use of potassium permanganate, crystal

or saturated solution, followed by usual powders, ointments, or suppositories as the case may demand. This method I suggested about eight years ago in the *Medical News*, and I note with some interest its recent appearance in a quotation from a French surgeon, as "the discovery of a famous Russian surgeon."

PINE TREE INN.

Correspondence.

LETTER FROM LONDON.

The Opening Addresses at the Medical Schools.—Chinese Pork.—Kissing the Book.

LONDON, October 5, 1900.

In accordance with custom the London medical schools inaugurated their winter session on October 1st. Interesting addresses were delivered at the various schools. One of the most interesting as well as the most popular of these was that delivered by Lieutenant Shackleton at the Middlesex Hospital Medical School. The presence of the antarctic explorer proved an immense attraction to the students and friends of the institution, a large marquée erected on the hospital grounds failing to accommodate all who wished to attend the ceremony. On his arrival Lieutenant Shackleton, who was accompanied by his wife, was received by Major-General Lord Cheylesmore (chairman of the weekly board of governors), Prince Francis of Teck (deputy chairman), and the honorary staff of the hospital. After an introductory address by Mr. J. Strick-

land Goodall (lecturer of physiology), Lieutenant Shackleton addressed the gathering. He said that a great many things of interest to medical science were learned in the antarctic. One of the most interesting things they discovered from a medical point of view was that the rotifers, creatures which lived in a temperature of 50° to 60° below zero, yet were none the worse for being subjected to a heat of 100° to 200°. In his expedition they had with them three medical men, and no deaths occurred. One man lost an eye and another a big toe, the operation being performed successfully under trying conditions. The temperature of the members of the expedition also varied considerably, falling as low as 93° and 94° F., but going up to normal after meals.

They never caught cold in Polar regions until they opened a bale of clothing which had been packed in England. The germs were thus introduced into the antarctic, and those who remained indoors after putting on the clothes suffered from cold, while those who went out in the open did not.

At the University College Hospital the inaugural address was delivered by Sir John Tweedy, who dealt with the uses of vivisection in medicine. He said that medical knowledge had been slow of development and subject to cyclical variations, sometimes to retrogression, but it had grown. Centuries of observation by experienced workers had been needed to raise practical medicine to its present high level, but these observations had for the most part only improved the art of medicine and had done comparatively little for the advancement of its science, which had progressed mainly by the researches of those who had not been directly engaged in the treatment of disease. Failure to appreciate the difference between the dissemination of knowledge and the advance of knowledge had given rise to much confusion of thought and not a little waste of endeavor. Perhaps the crudest manifestation of this confusion was the belief, real or feigned, by some persons that inquisitorial experiments were performed in hospitals on men or on animals or on both. Less crude, even credible in a sense, was the notion that by establishing sanatoria or endowing special hospitals for the treatment of particular classes of general diseases it was possible to solve the problem of the nature and origin of these diseases, and to hasten the discovery of the means of prevention and cure. Logically, this assumption was false; economically, it was wasteful. It was based on a misapprehension of the function of hospitals and of the methods by which scientific discoveries were made. He did not wish to discourage the most generous pecuniary support of hospitals. Money was greatly needed for their maintenance and would be needed in increasing proportions if hospitals were to avail themselves of the resources which scientific research was continually placing at their disposal. The great desideratum of our day was adequate endowment of biological and pathological research as the surest and most humane way of discovering the nature and cause of disease and the means of its prevention. Supremely useful as hospitals were for the purpose of treating the sick by the help of the best skill and knowledge of the time, and as schools for the training of successive generations of medical practitioners for the service

of the community, it was nevertheless true that most of the capital discoveries of scientific medicine had been made outside hospitals and very often apart from clinical observation altogether. In surgery, too, it might be said that the scientific bases of the modern aseptic method had been established, not by clinical observation, but by experimental research. The students as future practitioners of medicine would have to form an opinion on the justifiability of experiments upon living animals for the purpose or scientific research, and if they were satisfied that these experiments were justifiable with proper safeguards they would be called upon to defend the practice and to uphold their opinion.

To do this intelligently, it was necessary, not only that they should be acquainted with the arguments for the defense, but that they should also make themselves masters of the arguments of the other side. It was not enough to ascribe the opposition of the public to ignorance or fanaticism. There might be either or both, but objection could be overcome and acquiescence gained only by enlightening and educating the public mind. It should be remembered that the mass of a nation must be convinced of the value of a general principle which was being carried out; else what they might judge the most salutary change would be ineffectual. In democratic societies there was often a distrust of scientific opinion. The remedy was not despotism, but public enlightenment, and the scientific specialist was bound therefore by patriotism as well as in the interests of his own science to lend what aid he could to the popularization of science from which he was too apt to recoil. It was the sole antidote to ignorance or pseudoscience. Those whom science neglected fanaticism and quackery would claim for their own.

There has been a great outcry in this country condemning the importation of certain batches of pigs' carcasses from China for food. At the beginning of September several questions were asked of the president of the Local Government Board in the House of Commons as to the wholesomeness of such food. Mr. Burns replied that the carcasses were being inspected in the usual manner as they arrived, and that the chief medical officer of the port of London was paying special attention to them. He said, further, that any pork found unsound would be condemned in the ordinary course, whatever its port of origin. Dr. Herbert Williams, the medical officer in question, has now presented a report to the Court of Common Council in the course of which he states that the big carcasses on arrival were found to be large and fat, and each one had a label attached to it which indicates that it had been subjected to a medical examination at the port of shipment. As the Chinese pigs are very prone to contain the parasite which gives use to the condition known as trichiniasis, Dr. Williams selected a hundred pigs at random and removed portions of the diaphragm and other muscular tissues and examined the same microscopically without finding anything which was at all indicative or suspicious of trichiniasis.

On the first day of this month the new Oaths Act became law. For many years the insanitary possibilities of the usual method of taking the oath in English law courts by "kissing the Book" have been

pointed out by the *Lancet*, and many medical men in this country supported the protests.

The Oaths Act of 1888 repealed sections of nine older acts dealing with the methods of swearing witnesses in Great Britain and Ireland, and made it optional for a witness either to take the oath with uplifted hand in the Scotch fashion or to make an affirmation instead of an oath; but in spite of this legislation "kissing of the Book" remained the almost universal custom in the courts. The object of the new act is to make the administration of the oath by the uplifting of the hand universal unless the person about to take the oath voluntarily objects to its administration in this form by the court. The words of the effective provisions of the act are as follows: "Any oath may be administered and taken in the form and manner described in the schedule hereto," and "the officer shall administer the oath in such form and manner without question." The schedule to which reference is made describes the usual Scotch form of swearing "by Almighty God" with uplifted hand, a form which is much more solemn and impressive than the perfunctory kissing of a copy of the New Testament.

Therapeutical Notes.

The Treatment of Acute Coryza.—The *Journal of the American Medical Association* for October 9, 1909, summarizes a paper by Dr. C. P. Grayson, of Philadelphia, which was published in *The Therapeutic Gazette* for May, 1909. The steps in the treatment are as follows:

1. A cathartic, and best one of the ordinary saline cathartics, or a cathartic mineral water. This may be repeated on the following morning, if deemed advisable.

2. The patient should fast for twenty-four hours, and "during this period he should, several times, for fifteen or twenty minutes, indulge in the most active exercise of which he is safely capable." Even women and children may be made to take simple active exercise that will bring about the condition desired—*viz.*, "quickened and invigorated heart action, which will cause the skin, bowels, and kidneys to become active eliminating organs, and the congestion of the nasal mucous membrane will rapidly subside and its effects be quickly obliterated.

3. If drugs are to be used at all, Grayson advises the salicylates, also a few drops of aromatic spirit of ammonia, or tincture of nuxvomica. These drugs will tend to promote excretion. He does not believe in using combinations of opium, belladonna, aconite and acetanilide, all of which more or less inhibit normal secretion and excretion.

If a patient is old or too weak to carry out the exercise suggested, the author advises that gentle means of producing diaphoresis be inaugurated, such as a cabinet bath.

Many patients need no local treatment, he says, but if there is much congestion and the patient needs local treatment by the physician, he first uses a preliminary spray of a two per cent. solution of cocaine hydrochloride, not more than two or three drops into each nostril. This soon shrinks the low-

er turbinates. Then with a small tuft of cotton on a slender applicator moistened with the two per cent. cocaine solution he swabs the middle turbinates. The mucous membrane thus being entirely anesthetized and contracted, the nasal chambers are generously flushed with a mild alkaline wash, such as one part of the *Liquor antisepticus alkalinus* of the National Formulary to three parts of warm water. The patient snuffs this solution back into the nasopharynx, and thus the whole nasal cavity is cleansed. The mucous membrane is next soothed by the insufflation of some bland powder, as zinc stearate. Lastly, some bland, nonirritant, thin oil, containing a few drops of a suprarenal solution, may be sprayed into the nostrils, and the sedative effect of the treatment is prolonged.

Reynès's Anæsthetic Mixture.—The formula for this is given in the *Revue française de médecine et de chirurgie*, as follows:

B	Chloroform,	5ii.
	Absolute alcohol, .....	.....
	Ether, .....	.....

M.

The advantage claimed for this mixture is that the alcohol is a cardiac and nerve stimulant, and so overcomes the tendency to syncope in subjects who may have cardiac lesions or disease of the kidneys or lungs. Readers of this *Journal* will recognize this mixture as a variant of the old A-C-E Mixture which was at one time used considerably in hospital practice. The A-C-E mixture had the following composition:

B	Alcohol,	5i.
	Chloroform,	5ii.
	Ether,	5iii.

M. et Sig.: For anæsthesia.

Application for Simple Chancre.—According to the *Journal de médecine de Paris*, Balzer and Tansard use the following solution, applied as a paint for the cure of simple chancre:

B	Silver nitrate, .....	.....
	Zinc nitrate, .....	.....
	Distilled water, .....	.....
M.	ft. solutio.	.....

Sig.: Apply to the surface of the chancre by means of a small pledget of cotton every second or third day.

The Treatment of Hæmatemesis in Simple Ulcer of the Stomach.—In the treatment of hæmorrhage from the stomach during and following a serious crisis in the patient's illness Pron (*La Quinzaine thérapeutique*, September 10, 1909) advises the application of an ice bag to the pit of the stomach, supporting it on a hoop, or some similar arrangement so as to prevent the weight of the bag from troubling the patient. The taking of any fluid by the mouth is to be absolutely forbidden. It is only permitted to rinse out the mouth occasionally with either plain or aromatized water; and the patient may be permitted to suck small pieces of ice. To furnish the tissues with the fluid needed by them an enema of boiled water (one pint) is given twice a day.

As diet during convalescence iced milk should constitute the only food for several days, two to three ounces being given during the day. The third part of a cup of water may be given, and gradually

increased until a pint is taken. In a few days, as the patient improves, the amount of water taken may be increased to four to six pints a day.

If the hæmorrhage persists the patient must be put on a more rigid diet, the quantity of milk being decreased, and nutriment administered by rectum. The following nutritive enemata are proposed:

(1)
R Eggs, No. ii;
Milk, 3viii;
Sydenham's laudanum, gtt. v.

M.
(2)
R Eggs, No. ii;
Milk, 3viii;
Liquid peptone, 3ii.

M.
(3) Robin uses the following enema:

R Eggs, No. i to iii;
Liquid peptone, 3x to 3xiiss;
Solution of glucose (20 per cent.), 3iii;
Sea salt, gr. xxii;
Pepsin, gr. viiss;
Tincture of opium, gtt. iii;
Freshly prepared soup, q. s. ad. 3viii.

M.
At the first appearance of hæmorrhage give a hypodermic injection of fifteen minims of Yvon's ergotine, and repeat as needed two or three times during the twenty-four hours, or give the following:

R Hydrastine hydrochloride, gr. viiss;
Sterilized distilled water, 3iiss.

M.
Or this formula of Capitan:

R Ergotine Yvon, gr. lxxv;
Morphine hydrochloride, gr. 3/5
Antipyrin, gr. xxii;
Sparteine sulphate, gr. iii;
Atropine sulphate, gr. iii;
Distilled water, q. s. ad. 3iiss

M. A Pravaz syringe is to be injected every half hour or quarter of an hour as needed, but no more than five syringefuls in all to be used.

Everything else failing prescribe the following mixture to be taken in tablespoonful doses every hour:

R Calcium chloride, 3i;
Syrup of opium [French Codex], 3v;
Ergotine, gr. xxx;
Gallic acid, gr. viiss;
Syrup of turpentine [French Codex], 3ii;
Peppermint water, q. s. ad. 3v

M. et Sig. » One tablespoonful every hour.

If grave symptoms appear, such as lithymia or cardiac weakness given an injection of artificial serum, at the same time giving hypodermically an injection of sparteine sulphate, gr. 3/4, or camphorated oil, fifteen to forty-five minims.

Infantile Bronchitis.—In the treatment of chronic bronchitis with profuse secretion in infants the *Journal de médecine de Paris* of September 15, 1909, commends the following prescription:

R Washed sulphur, 3x
Refined honey, 3iii.

M. et Sig.: One dessertspoonful twice or thrice daily.

The Treatment of Pruritus Ani.—In the discussion of a paper by Dr. Krouse on the operative treatment of pruritus ani, reported in the September number of *The Proctologist*, Dr. Dwight H. Murray, of Syracuse, N. Y., said he had had fairly good results in affording temporary relief without

operation in a good many cases. He uses pure carbolic on the skin surrounding the anus, and then uses alcohol. This, he says, constitutes a sufficient cautery to cause the macerated epidermis to be thrown off after several days. After the use of the phenol and alcohol, he employs balsam of Peru in the anal canal, followed by calomel and zinc stearate as a dusting powder. His orders to the patients are, that they shall be regular with the bowel movement, so that no autointoxication of intestinal origin shall enter into the question. They are directed to use a saline enema at night, not enough to cause a bowel movement, but enough to cleanse the parts. The saline enemata do not appear to irritate the parts, but he believes soap suds enemata are irritating and should not be used. After cleansing the parts with the enema, the patients are instructed to bathe the anal region while in a squatting position, with black wash (Lotio nigra, N. F.) which is allowed to dry and then to apply at once the compound zinc stearate, as a dusting powder. Absorbent cotton is to be worn between the folds of the buttocks. This treatment does very well in relieving the symptoms, but does not cure the disease. When he felt a case was cured, he did not expect the patient to ever have pruritus ani again. That was what he called a cure.

For Alopecia of Convalescents.—Brocq prescribes the following wash for the hair in cases where the hair falls out after a protracted siege of illness:

R Alcohol, 3iiss;
Spirit of camphor, 3iiss;
Rum, }
Tincture of cantharides, } ..āā m lxxv;
Glycerin, }
Oil of santal, gtt. v;
Oil of wintergreen, gtt. v;
Pilocarpine hydrochloride, gr. viiss.

M.

It is advised in connection with the application of this hair wash to cut the hair very short every five days for a period of three weeks.

A superior mixture to the foregoing is quoted in Pron's *Formulaire synthétique de médecine*. It has the following composition:

R Quinine hydrochloride, 3i;
Tannin, 3iiss;
Alcohol, 60°, Oij 3xiiss;
Tincture of cantharides, 3iiss;
Glycerin, 3iiss;
Eau de Cologne, 3x;
Vanillin, gr. iss;
Pulverized santal wood, gr. viiss

Mix and allow to stand four or five days before filtering. Apply with friction every other day.

For Atonic Dyspepsia.—Rummo (*La Riforma Medica*, through *The Practitioner*) prescribes the following before each meal:

R Fluid extract of kola, }
Fluid extract of coca, } āā 3iiss;
Fluid extract of cinchona, }
Sodium glycerophosphate, 3iii;
Calcium glycerophosphate, 3iii;
Sodium arsenite, gr. iss;
Strychnine sulphate, gr. ss;
Syrup of peppermint, 3ii;
Syrup of vanilla, 3ii;
Tincture of orange, ad. 3xxv.

Mix, and after allowing the mixture to stand for twenty-four hours, filter.

Sig.: One tablespoonful to be taken before each meal.

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NEW YORK, SATURDAY, OCTOBER 23, 1909.

CESARE LOMBROSO.

Cesare Lombroso has just died, ripe in years, rich in honors, and surrounded by critics. Born in Verona, November 13, 1835, he studied in Turin and also in Pavia, and in Vienna, where he was a student of Skoda. He was a precocious student, practically finishing his medical course at the age of twenty, and he was made a military surgeon at twenty-three. He became professor of psychiatry at Pavia at the age of twenty-six and was also director of the asylum at Pesaro. He later was appointed professor in his alma mater at Turin, occupying the chair of psychiatry and legal medicine.

Any attempt to sum up a life of fully fifty years of incessant labor must naturally fall far short of adequate expression. His interests were so varied and human that a simple enumeration of his contributions to the medical press would fill many pages. In 1876 appeared his well known work, *L'Uomo delinquente studiato in rapporto alla antropologia, alla medicina legale ed alle discipline carcerarie*, and in 1880 he founded his *Archivio di psichiatria, scienze penali ed antropologia criminale*. Ever since the early seventies his interests were strongly directed to the somatic investigation of mental disorders and particularly of those types that brought men in conflict with the conventional rules of society—i. e., the so called criminal insane.

It is to Lombroso's everlasting credit that he was an active pioneer in the field of anthropology, especially in its practical field of criminology. He was not a founder of the science of anthropology by any means, but he was leader in its special field of application to insane criminals and delinquents in general. Very few of the fundamentals on which science built its generalizations of fifty years ago have borne the scrutiny of wider observation, but such is the fate of all generalizations, and Lombroso's teachings regarding anomalies of physical configuration and mental and moral quality have long since been measured and found in need of modification. It is true they form the stock in trade of many men in authority to-day and are extensively copied in textbooks still current but they must be read with discrimination. His teachings embody many important truths, but the world of science has gone on to clearer definitions.

Lombroso was not the first man to wrestle with the subject of genius, nor the originator of the epilepsy genius hypothesis—the latter is thousands of years old, but his literary tendencies led him to exploit the idea that genius was a "major psychosis" and thus he became the father of much slushy pathography. A genius can hardly button his coat with his left hand, or break his egg with a fork without its being recorded as one of the "eccentricities of genius." The foolish deeds of every man in the street if carefully garnered would make an imposing array for any great man, and Lombroso is largely responsible for much half baked philosophy regarding genius and insanity.

Abnormal men and women were searched high and low for signs of their abnormality, and naturally such were not lacking. Much that was new and true Lombroso has given us, and his influence has been of inestimable value in criminology. Would that a Lombroso could shake the defunct corpse of American criminology into something half way decent, but the indifference of the legal mind to biological studies and the politics ridden penal institutions offer barriers that no psychiatrist can override. Fortunately European institutions offer some opportunities for the serious student.

Lombroso's work on pellagra merits special attention. He was one of the first to point out the relation of the disease to the use of fungus infected grains, especially corn. The exact fungi are still matters of investigation, although various hyphomycetes are thought to be responsible. Apparently this rare and peculiar disorder is about to be of serious moment to American students of neurology and psychiatry. Cretinism was also studied by him and his monograph on this condition as found in Lombardy is a serious contribution to the subject. His

clinical studies of psychiatry never attracted widespread attention, although they were translated into German.

Of late years his interest in the Paladino case and his yellow journalistic psychiatry have served to dim the high regard that might have been his. They should best be regarded as the foibles of an old man and will be forgotten, while the sound principles of physical measurements for the mentally ill and delinquent will always serve as stepping stones to better psychiatry and a more rational and humane criminology. That the two branches should go hand in hand is a commonplace for European students, and Lombroso was the most active worker in bringing this rapport about.

SOLDIERS' HOMES.

A phase of the passing of the civil war veteran which is of much interest to physicians is the transformation being wrought in soldiers' homes. Old age and its infirmities have broken the ranks and filled the sick beds of these institutions until at the present time it is only the survival of another name that prevents them from being termed hospitals. Twenty-four Northern States have soldiers' homes, in many of which not only disabled volunteer soldiers but their wives, widows, or children are cared for, but it is the National Soldiers' Home for Disabled Volunteer Soldiers which provides for by far the greater number of veterans. This organization consists of ten widely separated institutions, each one known as a "branch." In these branches more than 30,000 disabled soldiers were cared for last year. The reports of the Board of Managers have commented, from year to year, upon the steady advance of the death rate and the increasing number of persons receiving hospital treatment. In 1908 eighty-three per cent. of the entire number present received medical attention, more than one third of them in hospital wards, and the death rate reached sixty-eight per mille of the whole number cared for.

One of the branches, the Battle Mountain Sanitarium, is in charge of a physician, with the official title of governor and surgeon, but this is the smallest one, and all the rest are administered by laymen. It is a question worthy of serious consideration whether the time has not come for the direction of all these great institutions to be intrusted to medical men. Although physical disability is one of the requirements for admission to the National Soldiers' Home, it seems that in the past this term has been liberally construed, for from 1880 to 1898 the annual death rate per mille did not exceed forty-six and showed no steady advance. Lately, however,

physical disability must have become the factor in determining eligibility which overshadows all others, and there can surely be no element more important than the medical one in the administration of institutions with such aggregations of aged invalids. The law establishing the National Home provides that members shall, upon admission, become subject to the *Rules and Articles of War* and "be governed thereby as if they were in the Army of the United States." However useful military administration may have been in the past, when applied to infirm men who had spent but a very small part of their lives (and that many years ago) in military service, it is doubtful whether, with its many limitations, it is most suitable for hospital patients. The care of large groups of people who are dependent, either from age or from disability, is a matter which, if entrusted to laymen at all, should be safeguarded with sufficient supervision by medical men to provide against those abuses which lack of experience and of appreciation of the needs of such people make possible under the best of conditions.

Many problems which must be dealt with in order to make institutions safe and comfortable for any class of dependent people are such as can be solved only by medical men keenly aware of the requirements, but with large groups made up in great part of aged men suffering from chronic and incurable diseases the whole routine of daily life should be under medical direction, and experiences which have often been painful show that this can be accomplished only by placing both responsibility and authority squarely upon physicians. There is no reason to doubt that those responsible for the administration of our soldiers' homes have discharged their duty with efficiency and with sympathy for those under their care, but it is only a few years ago that it was earnestly discussed among well intentioned and kindly people whether it was a justifiable expenditure of public funds to provide heat in winter for the dormitories occupied by the chronic insane.

MORTALITY STATISTICS IN AMERICA.

We recently remarked upon the likelihood that a decided improvement in our mortality returns, from the statistical point of view, would follow upon the adoption of the revised International Classification of Causes of Death that was agreed upon in Paris last July. It is expected that the French version will soon be received in this country, and Dr. Cressy L. Wilbur, of the Bureau of the Census, will at once prepare a translation into English, with the assistance of the Hon. George H. Knibbs, of Australia. There is reason, therefore, to look forward to the

general distribution of the English version in time for our State and municipal registrars to make it the basis of their returns for the year 1910.

Dr. Wilbur has taken another notable step in advance by preparing a standard form of death certificate. We understand that the form has received the endorsement of the American Public Health Association, which has been holding its thirty-seventh annual meeting in Richmond this week. In addition to the United States, the association represents Canada, Mexico, and Cuba, so that the adoption of the new form of certificate in Richmond makes it reasonably sure that it will soon come into general use in all the countries mentioned. It wisely calls only for a minimum of data, and any local registration bureau is of course at liberty to add special requirements of its own. Such addition will not interfere with the desired essential uniformity of returns.

THE THEATRE AND THE NURSING BABY.

In a roundabout way—that is, by way of Paris—we learn that an enterprising and philanthropic theatrical manager of Glasgow has with apparent success striven to meet the privation which many young mothers have heretofore had to endure by reason of the interference of lactation with their attendance at the theatre. The *Tribune médicale* for September 25th gives us the substance of certain comments published in two of the Paris newspapers, the *Eclair* and the *Matin*. It seems that the manager has established a sort of *crèche* in connection with the cloak room. Babies may be checked, and the happy mothers may nurse them during the *entr'actes*. It appears that the nursing may be done in quite a leisurely manner, time being allowed even for a change of napkins in addition.

We may imagine that the scene shifters are purposely encouraged to be deliberate, and if unsympathetic individuals in the audience chafe under the delay and the members of the orchestra are tempted to fill in the time with inordinate libations, we may still draw the inference that the general effect is a good one, for a weighty objection to maternity is removed and bottle feeding may the more readily give place to the breast. We are told, however, that milk is provided and even that wet nurses are in attendance. It is to be hoped that both the milk and the nurses are "certified." It is further to be hoped that the *vestiaire-nursery* is operated solely in connection with afternoon performances, for of course nurslings ought not to be kept out at night.

The *Matin's* writer, M. Clément Vautel, somewhat pessimistically imagines that annoying mistakes may happen in the working of the checking system—that babies may get "mixed up." He suggests

that when a woman presents the check that has been given to her she may receive some such heart rending reply as this: "A little girl, madam? We have only a little colored boy left." M. Vautel is surely lacking in enthusiasm; for they are more precise in Glasgow than to conduct such an interesting business in a slipshod manner. We should think that the Scotch plan might be imitated to advantage in many parts of the world, though we suppose that there are communities in which it would not be looked upon as at all irregular for a woman to nurse her offspring without leaving her seat; that is certainly the case with the frequenters of some beer gardens, and we fancy that nobody gives more than a passing thought to the spectacle of lactation carried out on a railway train, where the conditions are analogous.

THE NATURE OF THE PROTEINS.

In an interesting paper in the *Journal of the Franklin Institute* for August Bradbury reviews the recent progress in the chemistry of the proteins. While the formulæ of the various natural substances known as proteins are understood, it has been difficult to determine definitely whether they were "chemical individuals," because of the difficulties of reproducing them synthetically and of simplifying them by analytical methods. Analysis sufficed to demonstrate that the protein molecule was composed of ammonia, glucosamine, and amino acids. So far, eighteen amino acids have been identified with certainty among the decomposition products of the protein molecule.

This identification was made possible by the introduction of the "ester method" by Emil Fischer, by which it appeared certain that the various protein molecules were composed of combinations of amino acids, but it was not until the introduction of the method of synthetic production of substances from the combination of amino acids and an amide link, by Fischer, that positive proof was forthcoming. Fischer called these synthetic products polypeptides, and he and his followers have produced more than a hundred of them. This amide linkage of the amino acids in the protein molecule is sufficient to account for the great variety of the proteins as they occur in nature.

These substances are nearly all soluble in water, weak acids, and alkalies, and insoluble in ether and alcohol, although alcohol containing a little water of ammonia is a good solvent. Many of them give the biuret reaction. Pepsin appears to have no hydrolytic action upon them. Trypsin, however, digests those polypeptides that are formed of the active amino acids which occur in nature. The three different methods of hydrolysis, by acids, by alkalies, and by ferments, give identical results when ap-

plied to the same polypeptide. When a dog is fed with them or when they are administered subcutaneously the same products are obtained as though albumin had been used. Furthermore, polypeptides have been found in the material resulting from the partial hydrolysis of proteins in a number of cases. The way seems now open for a successful attack on the problem of the composition of albumoses, proteoses, and peptones. The result of the studies to come may be expected to clear up the nature of the digestive processes and the structure of the original protein.

News Items.

Change of Address.—Dr. William S. Stone, to 113 East Sixty-second Street, New York.

The Union County, N. J., Medical Society held its regular quarterly meeting in Plainfield on October 13th. The principal feature of the programme was a paper by Dr. A. F. Van Horn on Diet in Typhoid Fever.

The New York Association for Improving the Condition of the Poor celebrated the sixty-sixth anniversary of its founding on Friday, October 1st. It was organized in 1843 by prominent men of New York, in an effort to supplant the indiscriminate and haphazard charitable methods then in vogue by a system of discriminate relief.

Hospital Ship Nearly Ready for Service.—Surgeon General P. M. Rixey, United States Navy, has officially notified the department that the *Solace*, which is being fitted out as a hospital ship in the Charleston, S. C., Navy Yard, will soon be ready for service. Surgeon General Rixey recommends that the *Solace* be placed in commission as soon as existing regulations will permit.

Philadelphia County Medical Society.—The central branch of the society held a stated meeting on Wednesday evening, October 13th. The programme consisted of a "symposium" on the prostate gland, with papers on the subject by Dr. H. M. Christian, Dr. Alexander A. Uhle, Dr. W. Wayne Babcock, and Dr. Levi J. Hammond. An interesting discussion followed.

Chief Resident Physicianship Vacant.—The unusual opportunity is offered an unattached practitioner to become chief resident physician at the Methodist Hospital, Philadelphia. Applicants must have the degree of A. B., and must have had at least one year's experience in hospital work. Applications should be sent at once to Dr. R. S. Young, 2301 South Broad Street, Philadelphia.

Superintendency of Craig Colony.—At a meeting of the board of managers of Craig Colony for Epileptics, Sonyea, N. Y., held on October 12th, Dr. William T. Shanahan was unanimously elected medical superintendent of the institution. Dr. Shanahan has been acting superintendent of the colony since Dr. Spratling's resignation took effect last October, and he was first assistant superintendent for some time under Dr. Spratling.

The Medical Society of the State of New York.—The Committee on Programme has issued an announcement to the effect that the next annual meeting of the State society will be held in Albany on January 30, February 1 and 2, 1910, and that proffers of papers for this meeting will be gladly received. Address all communications to the chairman of the Committee on Scientific Work, Dr. L. H. Neuman, 194 State Street, Albany, N. Y.

The West End Medical Society of the City of New York will hold its fifth regular meeting for 1909 at the residence of Dr. William Shannon, 130 West Eighty-first Street, on Saturday evening, October 23d, at 8:15 o'clock. Interesting cases will be reported by Dr. Kilmer, Dr. Rockwell, and Dr. Smith. The paper of the evening will be read by Dr. Frank S. Meara, the subject being The Treatment of Pneumonia. The discussion will be opened by Dr. H. S. Houghton, Dr. Walter Mendelson, and Dr. A. M. Shady.

An Institute for Child Study.—It is reported that an institute devoted entirely to a study of the mental, moral, and physical condition and development of children has been established in Worcester, Mass. It is said that the institute will ultimately consist of seven departments, each devoted to a distinct phase of child life. Three departments were opened on October 1st, one being devoted to the testing of subnormal and defective children.

The Vermont State Medical Society held its ninety-sixth annual meeting in White River Junction on October 14th and 15th. There was a very large attendance. The programme, which was exceptionally good, included papers by Dr. Parker Syme and Dr. J. H. Woodward, of New York, and Dr. R. C. Cabot, of Boston. The following officers were elected: President, Dr. W. L. Havens, of Chester Depot; vice-president, Dr. E. H. Ross, of St. Johnsbury; secretary, Dr. C. H. Buchet, of Burlington; and treasurer, Dr. B. H. Stone, of Burlington.

The Section in Obstetrics and Gynaecology of the New York Academy of Medicine will meet on Thursday evening, October 28th, at 8:30 o'clock. The paper of the evening will be read by Dr. Franklin S. Newell, of Boston, on the Care of Pregnancy and Labor Complicated by Nervous Overdevelopment. The subject will be discussed by Dr. W. M. Polk, Dr. J. Brettauer, Dr. E. B. Cragin, Dr. R. L. Dickinson, Dr. E. C. Savage, Dr. E. H. Grandin, Dr. G. L. Brodhead, and others. Dr. S. Weiner will report a case of hematoma of the abdominal wall simulating a desmoid tumor and Dr. Arthur Stein will report a case of hematometra in an aged woman.

Nurses' Night at the Herald Square Theatre.—On the invitation of Mr. Lew Fields and the Messrs. Shubert, nearly 400 nurses from the various hospitals of New York city attended a performance of the *Rose of Algeria* at the Herald Square Theatre one evening last week. The play deals with the experiences of a corps of American trained nurses sent to Algeria by the French Government, and was thoroughly enjoyed by the guests, among whom were representatives from the following hospitals: J. Hood Wright, St. Vincent's, Italian, City Hospital, Polyclinic, Presbyterian, Hahnemann, Roosevelt, St. Luke's, New York, Post-graduate, German, and Mount Sinai.

The Manhattan Medical Society held a stated meeting on Friday evening, October 22d. Dr. Earle Conner reported a case of septic phlebitis of the lateral sinus, with unusual complications, and five cases of gonorrhoeal infection in young children were reported by Dr. Kingman B. Page. Dr. Gordon K. Dickinson read a paper on Retroflexions of the Uterus, which was discussed by Dr. Ralph Waldo and Dr. Ross McPherson. Dr. Godfrey R. Pisek read, by invitation, a paper entitled A Pædiatrist's Impression of Europe. A clinical conference on thyroid medication was held after the reading of the papers, and a general discussion followed. Supper was served at the close of the meeting.

The Philadelphia Neurological Society held a regular meeting on Friday evening, October 22d. Dr. S. D. Ingham exhibited a case of tabes with unilateral foot drop. Dr. C. S. Potts presented a patient with multiple sclerosis. Dr. William G. Spiller reported a case of dissociation of sensation in pontile lesions and exhibited the patient. Dr. James Hendrie Lloyd reported a case of cerebral hemorrhage simulating cerebrospinal meningitis, and exhibited the brain. Dr. William H. Hudson, of Atlanta, Ga., demonstrated, by invitation, a new method and instruments for opening the skull. The paper of the evening, which was entitled Experiencia with the Wassermann Reaction, was presented by Dr. S. D. W. Ludlum and Dr. E. Corson White.

A Monument to the Memory of the Late Dr. Turner.—The American Society for the Study of Alcohol and Other Narcotics has erected a monument to the memory of the late Dr. J. Edward Turner, of Wilton, Conn., which will be unveiled on Wednesday, October 27th, at 2 p. m. Dr. L. D. Mason, of Brooklyn, N. Y., president of the society, will deliver the dedicatory address; Dr. H. O. Marcy, of Boston, will deliver an address on Heroes and Martyrs in Medical Science; and Dr. T. D. Crothers, of Hartford, will deliver the memorial address on Dr. Turner, His Life and Work. Other distinguished physicians will be present who will speak, and a cordial invitation is extended to the public to be present. Dr. Turner was the first physician to urge that inebriety was a disease and curable in institutions, and he founded and built, at Binghamton, N. Y., the first institution in the world to be devoted to this purpose.

The Delaware State Medical Society held its one hundred and twentieth annual meeting in Dover on October 12th. The attendance was larger than it has been for many years, and the meeting was most successful in every particular. Officers for the ensuing year were elected as follows: President, Dr. P. S. Downes, of Dover; vice-presidents, Dr. L. Heisler Ball, of Faulkland, and Dr. Joseph Martin, of Lewes.

Indiana State Medical Association.—At the annual meeting of this organization held in Terre Haute on October 7th and 8th, the following officers were elected for the ensuing year: President, Dr. T. C. Kennedy, of Shelbyville; vice-presidents, Dr. E. M. Van Buskirk, of Fort Wayne; Dr. Eugene Hawkins, of Greencastle, and Dr. Theodore Porter, of Indianapolis; secretary, Dr. F. C. Heath, of Indianapolis; treasurer, Dr. D. W. Stevenson, of Richmond. Fort Wayne was selected as the place of meeting for 1910.

The West Virginia State Medical Association closed its forty-second annual meeting at Elkins on the evening of October 8th with a banquet at the Hotel Randolph, after officers had been elected and Parkersburg selected as the place for the next meeting. The new officers are: President, Dr. T. W. Moore, of Huntington; first vice-president, Dr. C. L. Holland, of Fairmount; second vice-president, Dr. James McClung, of Richmond; third vice-president, Dr. A. L. Grubb, of Charleston; secretary, Dr. A. P. Butt, of Davis; treasurer, Dr. H. G. Nicholson, of Charleston.

The Utah State Medical Association held its annual meeting in Ogden recently, and elected the following officers for the ensuing year: Dr. Joseph S. Richards, of Salt Lake, president; Dr. A. S. Condon, of Ogden, first vice-president; Dr. Walter T. Hesler, of Lehi, second vice-president; Dr. E. D. Hammond, of Salt Lake, third vice-president; Dr. W. Brown Ewing, of Salt Lake, secretary; Dr. J. N. Harrison, of Salt Lake, treasurer. Dr. A. C. Bailey was selected to fill the position of councilor for three years, successor to Dr. Philo E. Jones. The association will meet in Salt Lake City next year.

The Association of Surgeons of the Southern Railway Company met in annual session in Lexington, Ky., on October 11th. Dr. T. P. Satterwhite, of Louisville, presided, in the absence of Dr. T. O. Meredith, of Bergen, the president of the association. The following officers were elected for the ensuing year: Dr. J. P. Salb, of Jasper, Ind., president; Dr. R. C. Falconer, of Lexington, first vice-president; Dr. T. H. Long, of Albion, Ill., second vice-president; Dr. Fred R. Gobbell, of English, Ind., secretary and treasurer; executive committee, Dr. M. F. Coomes, of Louisville; Dr. J. W. Scott, of Venice, Ill.; Dr. Fred R. Gobbell, of English, Ind.

Scientific Society Meetings in Philadelphia for the Week ending October 30, 1909:

MONDAY, October 25th.—Mineralogical and Geological Section, Academy of Natural Sciences.

TUESDAY, October 26th.—Medicolegal Society.

WEDNESDAY, October 27th.—Philadelphia County Medical Society.

THURSDAY, October 28th.—Pathological Society; American Entomological Society and the Entomological Section, Academy of Natural Sciences. Section meeting, Franklin Institute; Philadelphia Botanical Club; Lebanon Hospital Medical Society.

FRIDAY, October 29th.—South Branch, Philadelphia County Medical Society.

Personal.—Dr. Charles E. Nammack, a member of the faculty of Cornell University Medical College, and visiting physician to Bellevue Hospital, has been appointed visiting physician to St. Vincent's Hospital, Manhattan.

Dr. J. M. Mathews's resignation as president of the Kentucky State Board of Health was accepted on October 15th.

Dr. C. E. Sawyer, of Marion, Ohio, was elected president of the Association of Physicians and Surgeons of the Erie Railroad, at the annual meeting of the organization held in New York recently.

Dr. Nathaniel G. Keirle, superintendent of the Pasteur Institute in Baltimore, celebrated his seventy-sixth birthday, on October 10th.

Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, has just rounded out twenty years of service as the chief executive of that institution. Since Dr. Hurd was made superintendent of the hospital nearly \$1,000,000 has been added to the value of the property.

The Medical Society of Virginia held its annual meeting in Roanoke on October 5th to 8th, under the presidency of Dr. Stuart McGuire, of Richmond. Officers for the ensuing year were elected as follows: President, Dr. E. T. Brady, of Abingdon; first vice-president, Dr. W. A. Pleckner, of Hampton; second vice-president, Dr. James A. Irvin, of Danville; third vice-president, Dr. R. H. White, of the University of Virginia; secretary, Dr. Landon B. Edwards, of Richmond; treasurer, Dr. R. M. Slaughter, of the Theological Seminary; judiciary committee, Dr. Hugh N. Taylor, Dr. C. P. St. Clair, Dr. Leigh Buckner, Dr. C. T. Parrish, Dr. Hugh McGuire, and Dr. Reid White. The next annual meeting of the society will be held in Norfolk.

The Pathological Society of Philadelphia.—At the annual meeting of this society, held Thursday evening, October 14th, the following officers were elected: President, Dr. David Riesman; vice-presidents, Dr. A. O. J. Kelly, Dr. David L. Edsall, Dr. Allen J. Smith, and Dr. Joseph Sailer; secretary, Dr. Edward H. Goodman; treasurer, Dr. C. Y. White; recorder, Dr. Fred H. Klaer; curator, Dr. Howard T. Karsner; business committee, Dr. David L. Edsall, Dr. John Speese, Dr. A. O. J. Kelly, Dr. William M. L. Coplin, Dr. Warfield T. Longo; membership committee, Dr. John Funke, Dr. William T. Cummins, and Dr. E. A. Case; publication committee, Dr. W. M. L. Coplin, Dr. Allen G. Ellis, Dr. D. J. McCarthy, and Dr. H. R. M. Landis; committee on morbid growths, Dr. W. Canby Robinson, Dr. Howard T. Karsner, and Dr. Randle C. Rosenberger.

Society Meetings for the Coming Week:

MONDAY, October 25th.—Medical Society of the County of New York (annual).

TUESDAY, October 26th.—New York Dermatological Society; Metropolitan Medical Society of New York; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); New York Medical Union.

WEDNESDAY, October 27th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, October 28th.—East Side Physicians' Association of the City of New York; New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Medical Society; Brooklyn Society for Neurology.

Gifts and Bequests to Charity.—By the will of Mitchell Valentine, late of Westchester, N. Y., the Presbyterian and Hahnemann Hospitals, of New York, will divide about \$500,000, the two funds to be known, respectively, as the Isaac E. Valentine Memorial Fund and the Stephen Valentine Memorial Fund. The Peabody Home for Aged and Indigent Women, in the Bronx, will receive \$100,000, the income to be used for the general purposes of the Home. The fund to be known as the Alexander Valentine Memorial Fund.

The will of Charles H. Draper, late of Brookline, Mass., includes the following bequests to charities: Children's Hospital of Boston, New England Hospital for Women and Children, Industrial School for Crippled and Deformed Children, Nickerson Home for Children in Boston, and the Floating Hospital, 1,000 each, the sum in each case to be known as the Eliza J. Bell Draper fund, in loving memory of his wife.

Army Medical Corps Examinations.—The surgeon General of the United States Army announces that the War Department has appointed permanent boards for the preliminary examination of applicants for appointment in the Medical Corps of the Army, to meet at Washington, D. C., Fort Sheridan (near Chicago), Illinois, and San Francisco, California, in addition to the usual preliminary examination boards that are assembled at various Army posts throughout the United States from time to time. The permanent boards will hold sessions on the second Monday of each month. A limited number of successful candidates will be appointed first lieutenants in the Medical Reserve Corps, salary \$2,000 a year, and assigned to Army posts until the next session of the Army Medical School, when they will be ordered to attend the school as student candidates. Applicants must be citizens of the United States, between twenty-two and thirty years of age, graduates of reputable medical schools, of good moral character and habits, and shall have had a year's hospital training after graduation, or its equivalent. Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C.

The Health of Pittsburgh.—During the week ending October 9, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 0 cases, 0 deaths; typhoid fever, 31 cases, 4 deaths; scarlet fever; 39 cases, 0 deaths; diphtheria, 18 cases, 4 deaths; measles, 5 cases, 0 deaths; whooping cough, 5 cases, 2 deaths; pulmonary tuberculosis, 88 cases, 9 deaths. The total deaths for the week numbered 135, in an estimated population of 572,000, corresponding to an annual death rate of 12.27 in a thousand of population.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statements of the new cases and deaths reported for the two weeks ending October 16, 1909:

	—October 9—		—October 16—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	435	144	427	152
Diphtheria	219	9	223	14
Measles	192	7	100	4
Scarlet fever	130	2	112	6
Smallpox	..	..	..	..
Varicella	23	..	38	..
Typhoid fever	1	2	116	11
Whooping cough	36	12	53	8
Cerebrospinal meningitis	6	4	8	6
Total	1,075	202	1,077	203

The Fifteenth International Congress on Hygiene and Demography will convene in Washington, D. C., from September 26 to October 1, 1910, on the invitation of the Department of State of the United States Government. This will be the first time that a meeting of this congress will be held on the American continent. Section III of this congress deals with the subjects of school hygiene and the hygiene of infancy and childhood. The following topics have been suggested for discussion: The hygiene of the home; the hygiene of the school child; the hygiene of the school building; the hygiene of instruction; hygiene with reference to physical defects; the hygiene of the teacher; the hygiene of open air schools; out of school hygiene; municipal hygiene with reference to children; and the propaganda of child hygiene. Dr. A. Jacobi is president of this section and Dr. Luther H. Gulick is secretary.

The Health of Philadelphia.—During the week ending Saturday, October 9, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 40 cases, 10 deaths; scarlet fever, 23 cases, 5 deaths; chickenpox, 13 cases, 0 deaths; diphtheria, 59 cases, 8 deaths; measles, 5 cases, 1 death; whooping cough, 3 cases, 2 deaths; tuberculosis of the lungs, 98 cases, 40 deaths; pneumonia, 13 cases, 23 deaths; erysipelas, 4 cases, 2 deaths; mumps, 3 cases, 0 deaths; anthrax, 1 cases, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 5 deaths; diarrhoea and enteritis, under two years of age, 43 deaths; dysentery, 1 death; puerperal fever, 4 deaths. The total deaths numbered 458 in an estimated population of 1,565,569, corresponding to an annual death rate of 15.21 in a thousand of population. The total infant mortality was 128; 112 under one year of age, and 16 between one and two years of age. There were 42 stillbirths; 22 males and 20 females. There was no precipitation.

The College of Physicians of Philadelphia.—At the regular monthly meeting of the Section in Otolaryngology, which was held in Wednesday evening, October 20th, the following programme was presented: Report of a Case of Sarcoma of the Tonsil, with exhibition of the patient, by Dr. George B. Wood; Report of a Fatality Following the Removal of Tonsils and Adenoids, by Dr. Francis Packard; Report of a Case of Extensive Thrombosis of the Lateral Sinus Affecting the Cavernous Sinus, with presentation of the patient, by Dr. Walter Roberts; a paper entitled Some Revised Diagnoses, by Dr. Charles F. Grayson; and a paper entitled Uronastaphyloplasty Three Weeks After Operation, by Dr. George Morley Marshall. This paper was discussed by Dr. G. Hudson Makuen.

On Thursday evening, October 21st, a stated meeting of the Section in Ophthalmology was held. The programme included the following papers: Proptosis of the Eye Probably Due to Tuberculous Involvement of the Orbit, by Dr. S. D. Risley; Detached Retina Replaced by Scleral Puncture, with Recurrence, by Dr. J. N. Risley; A Case of Temporal Monocular Amblyopia, by Dr. H. M. Hansell; A Case of Parinaud's Conjunctivitis with Unusual Complications, by Dr. Frederick Krauss; Dr. William Zentmayer exhibited a patient with v shaped iridotomy.

The Kentucky Association for the Prevention and Relief of Tuberculosis was organized in Lexington, on Wednesday, September 20th, with the following officers for the first year: President, Mr. C. L. Adler, of Louisville; first vice-president, Mrs. Desha Breckinridge, of Lexington; second vice-president, Mr. D. H. Kellar, of Frankfort; third vice-president, Mrs. Charles Dallam, of Henderson; fourth vice-president, Mr. E. T. Franks, of Owensboro; fifth vice-president, Mrs. Benjamin L. Banks, of Richmond; directors, Mr. Bernard Flexner, of Louisville; Dr. George P. Sprague, of Lexington; Mr. James A. Scott, of Frankfort; Miss Harriet Anderson, of Louisville; Mrs. Lafon Riker, of Harrodsburg; Dr. Dunning S. Wilson, of Louisville; Dr. W. R. Thomas, of Mt. Sterling; Dr. Jacob Glahn, of Owensboro, and Mr. Thomas Johnson, of Lexington. The association adopted a constitution and by-laws, and left the matter of the selection of a secretary and a treasurer to the board of directors. Until a secretary is chosen, Mr. F. A. Sampson, of Louisville, will act in that capacity.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending October 9, 1909, there were 1,327 deaths from all causes reported to the department, 114 more than for the corresponding week in 1908. The annual death rate in a thousand population was 15.28 for the whole city, and for each of the five boroughs as follows: Manhattan, 14.09; the Bronx, 18.80; Brooklyn, 15.89; Queens, 16.40; and Richmond, 19.40. The total infant mortality was 453; 324 under one year of age, 73 between one and two years of age, and 56 between two and five years of age. Of the total number of deaths of children under five years of age, 159 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 42; pulmonary tuberculosis, 144; diarrhoeal diseases, over five years of age, 161; organic heart diseases, 133; Bright's disease, 87; cancer, 74; pneumonia, 56; bronchopneumonia, 50; suicides, 12; accidents, 60; homicides, 4; making a total of 85 deaths by violence. There were 121 stillbirths. One thousand one hundred and twenty-six marriages and 2,465 births were reported during the week.

The Health of Chicago.—During the week ending October 9, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 105 cases, 16 deaths; scarlet fever, 114 cases, 9 deaths; measles, 32 cases, 0 deaths; whooping cough, 31 cases, 1 death; typhoid fever, 42 cases, 16 deaths; pneumonia, 18 cases, 67 deaths; tuberculosis, 87 cases, 68 deaths; mumps, 16 cases, 0 deaths; erysipelas, 3 cases, 0 deaths; cerebrospinal fever, 1 case, 0 deaths; chickenpox, 19 cases, 0 deaths. The deaths from other important causes were: Cancer, 397 deaths; nervous diseases, 17 deaths; heart diseases, 53 deaths; apoplexy, 5 deaths; Bright's disease, 40 deaths; diarrhoeal diseases, under two years of age, 95 deaths; diarrhoeal diseases over two years of age, 12 deaths. There were 8 suicides, 33 deaths due to accidents, and 5 deaths from manslaughter, making a total of 46 deaths by violence. The total number of deaths during the week was 599, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.04 in a thousand of population. The infant mortality was 101; 134 under one year of age, and 57 between one and five years of age.

Medical Supervisor in the Indian Field Service.—The United States Civil Service Commission announces that an examination will be held on November 24, 1909, to secure eligibles from which to make certification to fill a vacancy in the position of medical supervisor in the Indian field service, at \$250 a month and expenses, and vacancies requiring similar qualifications as they may occur in that service, unless it shall be decided in the interests of the service to fill the vacancy by promotion, reinstatement, or transfer. Applicants must be citizens of the United States; must have had at least three years' experience in medicine since graduation from a reputable medical college; must have had special training and experience in connection with tuberculosis and trachoma, and must accompany their applications with certificates from reputable physicians showing that they are free from tuberculosis in any and every form. The age limit is twenty years or over on the date of the examination. Application should be made at once to the United States Civil Service Commission, Washington, D. C., for application Form 1312. No application will be accepted unless properly executed and filed with the commission at Washington prior to the hour of closing business on November 13, 1909.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 7, 1909.

1. A Study of the Reticulated Red Blood Corpuscle by Means of Vital Staining Methods. Its Relation to Polychromatophilia and Stippling.

By JOHN B. HAWES, 2d.

2. The Post Mortem Diagnosis, Prevalence and Prevention of Rabies.

By LANGDON FROTHINGHAM.

3. Some Observations on Human Rabies.

By C. F. WITHERINGTON.

4. Varicose Veins of the Leg.

By HENRY MELVILLE CHASE.

5. Report of a Case of Arteriovenous Anastomosis for Senile Gangrene.

By J. C. HUBBARD.

1. **Reticulated Red Blood Corpuscles.**—Hawes says that the condition known as stippling of the red cells and that known as polychromatophilia are probably but different forms of the same process. He remarks that what in America is known as "stippling," "Grawitz granules" or "granular degeneration" (?) of the red cells, corresponds to the French "*erythrocytes ponctués*" or "*hématies ponctuées*" and the "*kernige Degeneration*" or "*Punktiierung*" of the German writers. The condition of the red cells which we call "polychromatophilia" or the "polychromatic cell," Biffi, an Italian writer, speaks of as "*heterochromatic erythrocytes*" or "polychromasia," while Ehrlich calls it "anæmic degeneration," and other German writers, "basophilic degeneration." The French term is the same as ours. Reticulated red cells, "*les hématies granuleuses*," of Chauffard and Feissinger, as shown by simple vital stains, either in temporary or permanent specimens, correspond to the stippled or polychromatic cell as seen in the fixed preparation, and are due to the same causes. Owing to the greater delicacy of the vital staining method, the reticulated forms will always be found in considerably greater percentages than stippled or polychromatophilic cells. All these phenomena are evidences of cell regeneration and are indications of the activity of the blood forming organs. Reticulated forms occur in normal blood in slightly less than one per cent.; in certain pathological conditions they may be present up to twenty-two per cent. or even up to sixty-five per cent. A study of the reticulated forms in pathological conditions of the blood, especially in secondary anemias, is of value in diagnosis, prognosis, and treatment.

2. **Rabies.**—Frothingham's remarks are to the point. He says it is the bite of a rabid dog, who in certain conditions will run for twenty to eighty miles biting nearly every animal and person it meets. For practical purposes we can exclude all other possible sources of infection. It is perfectly safe to say that, if there were no dogs, there would be no rabies, at least in countries where the wolf does not have to be taken into consideration. Therefore, if we wish to prevent rabies, all we have to do is to prevent our dogs from biting, and the only way to prevent a dog from biting is to make him wear a muzzle. It is often impossible, or a very difficult matter, to cure an infectious disease; on the other hand, it is often a very simple matter to prevent it. There is no known cure for rabies after symptoms have appeared; on the other hand, there is no infectious disease which is so absolutely simple to prevent and yet so difficult owing to misdirected sym-

pathy of the so called humane.—Withington states that the finding of the so called Negri bodies, which are universally present in cases of true rabies, should set at rest forever the question of there being such a specific disease. While it is exceedingly rare, the universally fatal course of it after it has once developed, and the horror of its symptoms, make it important for us to recognize it as an actuality. Certain prevalent errors are responsible for some of the confusion as to rabies. Those are: 1. Killing of a dog after the animal has bitten a man. If a suspected animal remains healthy for ten days after biting, there can be no danger to the bitten, even if the dog later does become rabid, while the consolation to be derived from the continuance of health in the dog is of the greatest value in relieving morbid apprehensions in the person who has been bitten. 2. The statement that rabid dogs show fear of water. This appears to be never the case, although in a majority of persons suffering from rabies there is some dread of drinking, from the experience that fluids in the mouth may produce pharyngeal spasm. 3. That the bites of nonrabid animals or human beings can ever produce rabies. Spontaneous generation has been disproved as conclusively regarding rabies as concerning any other disease. This does not deny the possible virulence of the saliva of non-rabid animals or even of human beings, but does deny that it may produce specific rabies. 4. That the period of incubation can be exceedingly prolonged. Great doubt is attached to any case in which the period of incubation has been reported to be a year or longer. It is probable that the incubation period in man has a minimum of about eleven days, a maximum not exceeding a year. Four fifths of the cases develop in the second month, and nine tenths within three months. It is unfortunate, as it is cruel, for a person who has been bitten by any suspected animal to be kept in a life long state of dread and apprehension. 5. That because fright may cause death all reported rabid deaths are merely due to fright.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 16, 1909.

1. Enucleation of Uterine Myomata: Why and When Performed, By E. E. MONTGOMERY.
2. Insect Carriers of Typhoid Fever, By W. FOREST DUTTON.
3. Typhoid Immunity and Antityphoid Inoculation, By WILLARD J. STONE.
4. Epidemiological Studies of Typhoid Fever, By L. L. LUMSDEN.
5. A Convenient Method for Determining Caloric Values of Formulas Based on Percentage Feeding of Infants, By HENRY I. BOWDITCH.
6. Heubner's System of Infant Feeding Expressed in Calories and Energy Units, By E. LACKNER.
7. The Influence of the Olfactories on Digestion, By GEORGE M. NILES.
8. A Study of the Anatomy and Clinical Importance of the Sacroiliac Joint, By FRED H. ALBEE.
9. Keloid: A Comparative Histological Study, By M. L. HEIDINGSFELD.
10. Persistent Thoracic Sinus Following Empyema. A Report of Fifteen Cases Treated by Decortication of Lung and Thoracoplasty, By CHARLES M. DOWD.

1. **Enucleation of Uterine Myomata.**—Montgomery says that the removal of fibroid growths by enucleation is indicated, when the growths are few in number and the structure of the uterus is but little involved, when the growths are readily accessible through the vagina or cervical canal, when the

tubes and ovaries are free from complicating conditions, and when the woman, whether unmarried or married is under forty years of age, and particularly when she is childless or has but one or two children. The removal is to be condemned, when the woman affected has reached the age of forty, as with the changing conditions incident to the climacteric the tendency to degenerative processes is increased, when the uterus is spread out by growths to such a degree that the reconstruction of a functioning uterus will not be feasible, and when the tumors are so distributed in the structure of the uterus that the circulation will be greatly affected in the necessary suturing to replace the disordered structures.

3. Typhoid Immunity and Antityphoid Inoculation.—Stone remarks that investigations have established that about four per cent. of convalescent typhoid cases become chronic "typhoid carriers," disseminating the infection more or less constantly with the feces and urine for periods of years. Where new cases of the disease can, with fair degree of presumption, be traced by appropriate bacteriological tests to such individuals, especially cooks, dairymen, or dairymaids, workers in confectionery, waiters and waitresses, or those who have to do with the handling of food in any way, the inoculation of antityphoid vaccine offers a more certain means of raising the bacterial resistance in such individuals than any other known method of treatment. The method of antityphoid vaccination involves no risk and is especially applicable for those constantly exposed to infection, such as nurses, hospital attendants, and physicians. Antityphoid inoculations should be avoided if possible in individuals during the incubation stage of typhoid, for, although it is probable that the stage of diminished resistance (negative phase) for a few days following the inoculation is more theoretical than real, it is more wise, in the present state of knowledge, to avoid the possibility of cumulation. In endemic areas, where a considerable proportion of the population annually suffers the infection, or in epidemic areas, where there is reason to suppose the possibility of widespread infection, inoculations of antityphoid vaccine are indicated in individuals not in the prodromal or incubation stage of the disease.

7. The Influence of the Olfactories on Digestion.—Niles thinks that a psychic state favorable to the digestive processes may be induced through the olfactories fully as well as through the other senses, and that this almost fallow field may be cultivated profitably by the gastroenterologists. Since we admit that the commonly seen symptoms of cessation of digestion, spasms of the cardia or pylorus, anorexia, nausea, vomiting, or diarrhea may be brought on by insulted olfactory organs; and, as all of us realize the danger to individuals and communities from noxious vapors, it would seem a worthy endeavor to study these agencies intelligently, that we may avoid the evil and extract the good that in them lies.

8. Sacroiliac Joint.—Albee observes that the sacroiliac articulation has all the elements of a joint and therefore has a similar pathology: It has motion and plays an important rôle in labor; its variation, according to individual, age, or sex, is very

slight; its anatomy is such that drainage into the pelvis is very apt to occur, and, therefore, in the event of infection, early posterior drainage is often indicated; its affections are, undoubtedly, the cause of many obscure and unexplained backaches and persistent sciaticas. The important ligaments of this joint are so placed that the sacrum and the ilium swing open, in the event of a symphysiotomy, and little permanent damage results, even if the pubic separation has been great enough to rupture the unimportant anterior inferior part of the capsule. The relaxation of this articulation should be guarded against by support of the lumbar spine with pillows, etc., in cases of protracted postoperative convalescence.

9. Keloid.—Heidingsfeld has made a careful study on keloids. He says that the preservation of the papillæ does not distinguish true or spontaneous keloid from false keloid or from hypertrophic and atrophic scar tissue. A deep location does not distinguish true keloid from false. Preservation of the capsule is not indicative of true keloid; most of the cases of spontaneous keloid are devoid of well defined capsules, and all of the false cases possess fairly well defined capsules. Absence of elastic fibres does not distinguish true keloid from false, or either of these from cicatricial tissue. It was found uniformly absent in all of these structures. Its absence does not serve to distinguish keloids from fibromata in general if a soft, simple fibroma comes into that category. Elastic fibres are also found preserved in the fibrous structures of two cases of scleroderma. No regeneration of elastic fibres in scar tissue was observed in any of his cases. The absence of elastic fibres is not an aetiological factor in the hypertrophic character of keloid as maintained by Ravogli and Goldmann. Their absence was noted in the depressed lesions of striated and macular atrophy and depressed cicatrices, and their presence in a simple soft fibroma did not inhibit the hypertrophic character of the gross lesion. The contention of Warren, Kaposi, Joseph, and Berliner, that the fibrous bundles of true keloid preserve in the main a longitudinal arrangement, parallel to each other and to the surface of the skin, in contradistinction to the interlaced character of false keloid, is controverted in five out of six cases of spontaneous keloid, and in two out of three cases of false keloid. The interlaced character was observed in simple soft fibroma and scleroderma, and the parallel arrangement was observed in ordinary scar tissue. A distinction of true from false keloid, and the former from hypertrophic and atrophic scar tissue, as maintained by Dieberg, Kaposi, Schimmer, Joseph, and others, is not tenable. Joseph's contention that old keloid is more fibrous and new keloid more cellular could not be confirmed. A deceptive non-distinctive similarity of structure obtained in true and false keloid, and hypertrophic and simple scar tissue. All these structures could be easily distinguished histologically from normal collagenous connective tissue, which was present in close proximity to the majority of the examined lesions. A deceptive similarity in histological structure exists between scleroderma and normal collagenous connective tissue. The distinction of true from false keloid by the preservation of hair follicles and glands, which are neither pushed aside nor subject to pres-

sure atrophy is negated. The relatively few glands which were encountered occurred in equal measure in false and true keloid, and were pushed aside and subject to atrophic changes. No origin could be traced to the adventitia or primary extension along the bloodvessels of the corium, as maintained by many. The apparent origin in one case from a hair follicle, and the marked and prompt involvement of the glandular structures leads him to share the views of Berliner and Kirsch, of the probable origin of keloid from these structures. There seems to be as little basis for the assumption that trauma must play the causative rôle in every case of keloid as that of attempting a successful histological distinction on the same grounds. An idiopathic or spontaneous ætiology must be conceded to some of the cases of keloid, as long as these terms find a general acceptance for other affections. A distinction of true and false keloid is not possible on clinical or histological grounds; the distinction of keloid in general from scar tissue is not possible on histological grounds. Keloid and scar tissue can be histologically distinguished from normal collagenous connective tissue.

10. **Thoracic Sinus.**—Dowd states that persistent thoracic sinus can be cured by decortication of the lung and resection of the chest wall in eighty to ninety per cent. of the cases. After operation the patient will not have lateral curvature of the spine. The lung capacity on the affected side will remain much diminished. Nearly all the patients are in good health and are not materially inconvenienced by this restricted lung capacity. The mortality from the operation is probably more than five per cent. and less than ten per cent.

MEDICAL RECORD.

October 16, 1909.

1. On the Construction of an Efficient and Economic Diet in Tuberculosis, By HERBERT MAXON KING.
2. Early Diagnosis of Malignant Disease of the Larynx. Pathology, Prognosis, and Treatment, By WALTER F. CHAPPELL.
3. Precocious Tertiary Syphilis: Report of a Case with Manifold Manifestations, By H. FRED LANGE ZIEGEL.
4. The Care of the Nursing Breasts—Their Development during Neurasthenic Puberty, By GEORGE E. ABBOTT.
5. The Great Improvement in Many Advanced Cases of Pulmonary Tuberculosis under Sanatorium Care, By HORACE GREELEY.
6. Mastoiditis, Complicated by Puerulent Leptomenigitis, Epidural Abscess, and Sinus Thrombosis, By ALFRED BRAUN.

1. **Economic Diet in Tuberculosis.**—King gives a standard for economic diet in tuberculosis, and takes into consideration the following facts which experience teaches: 1. Men of the same respective age and weight seem to require a larger diet than do women. 2. All other conditions equal, a larger diet is apparently required by persons under thirty years of age than is the case after that period. 3. The laboring classes, *i. e.*, those who earn their living by muscular work, require more food than is the case with those living a more sedentary life, and in a certain measure the dietetic habits necessitated in the first place by occupation persist after occupation distinctions are removed. 4. The urban dweller consumes a larger relative amount of animal food and therefore derives a larger percentage of his energy from the protein constituent of his diet than is the case with the country dweller.

This, of course, applies only to the higher orders of civilization. With these points in view and bearing in mind the wide individual variations which occur in all classes, he gives the following standards, applicable to ambulant cases of comparatively quiescent tuberculosis under sanatorium treatment: 1. For young adult men of the "working class" on very light exercise from 2,800 to 3,200 calories, of which from 110 grammes to 125 grammes shall be protein. 2. For the same class on five or six hours' vigorous exercise (sawing or chopping wood, working with shovels, pickaxes, barrows, etc.) from 3,100 to 3,600 calories, of which 125 grammes to 140 grammes shall be protein. 3. For women of this class 200 calories and approximately ten grammes protein may be deducted in each case. 4. For young adult men, whose occupation has been more sedentary—*e. g.*, clerks, bookkeepers, tailors, students, etc., on moderate exercise (walking from one to three hours daily) 2,600 to 3,000 calories of which not over 115 grammes need be protein. 5. For women of this class not to exceed 2,500 calories and 100 grammes protein. For older patients, a slight reduction in calorific value and a considerably lower protein constituent are desirable in each case. 7. For the country dweller a somewhat larger bulk, without increase in protein value is usually desirable, all other conditions being similar, than is the case with the patient from the city.

3. **Precocious Tertiary Syphilis.**—Ziegel reports the following case: A patient with syphilis which had not been systematically treated began to exhibit, fifteen months after infection, tertiary manifestations which appeared in the following order: 1, Ulcer of the right leg; 2, papular syphilide of scalp; 3, deep ulcerations of tonsils and posterior pharyngeal wall; 4, stricture of the left nasal duct; 5, ulcers on forehead; 6, periostitis of nasal bones; 7, gumma of nasal septum, suppuration, and perforation; 8, bursitis and synovitis; 9, periostitis of heads of tibiae; 10, gummata of right testicle; 11, synarthrosis. He concludes that in tertiary syphilis, as is well known, the lesions usually involve the deep seated organs and tissues; not so in this case, in which the lesions have been superficial, involving chiefly the skin, mucous membranes, ocular appendages, cartilages, bursæ, periosteum, the testicle, and chondrosternal articulations. The two noteworthy features of this case were, therefore, the early appearance of the tertiary manifestations and their superficiality.

BRITISH MEDICAL JOURNAL

October 2, 1909.

1. Remarks on the Medical Library in Postgraduate Work, By WILLIAM OSLER.
2. A Plea for a more Living Pathology, By HARRINGTON SAUNSBURY.
3. Notes on Double Cervical Rib, with an Illustrative Case, By ROBERT DONALDSON.
4. A Note on Formalin Iodine Catgut, By F. J. STEWARD.
5. Chronic Œdema of the Face and Mucous Membranes, By JAMES ADAM.
6. Suppuration Treated by Vaccines, By S. MALLANAH.
7. Uncured Rice as a Cause of Beriberi, By W. GILMORE ELLIS.

3. **Double Cervical Rib.**—Donaldson observes that more or less well developed ribs are liable to be met with in connexion with the seventh cervical or with the first lumbar vertebra. According to Tur-

ner and Grüber, "cervical ribs may be either the unusually developed rudiments of the anterior transverse process or rib of the seventh vertebra, or merely unusually developed epiphyses." There is an independent development of the costal element on the anterior limb of the transverse process of the seventh cervical—that is, on the interior root of the transverse process we get an independent centre of ossification, which may develop and assume the importance of a cervical rib. As regards the aetiology of this condition, opinion is divided. According to Planet, all animals possessed at one time as many ribs as vertebrae, but in course of time these have dwindled down to the number of twelve in man with only rudiments in the cervical region. Some writers accordingly class the condition as a species of atavism. Others have laid stress on the frequency with which several members of the same family are affected. For instance, Israel is of the opinion that heredity plays some part, and that there is sometimes a history of degeneracy in some member of the family. Occasionally also the condition is associated in the same person with some other congenital malformation. Formerly the condition was looked upon as rare, but with the advent of Röntgen rays and greater precision in diagnosis the condition has now come to be recognized as comparatively common. The majority of cases probably pass unrecognized during life because no symptoms manifest themselves. Of those which cause symptoms, the majority appear to be found in young females, the reason for this being undetermined. The age at which symptoms are noticed is generally between twelve and twenty, owing probably to the activity of the skeletal growth between these ages. In those cases which do not cause symptoms, the supernumerary rib probably is not large enough to project into the posterior triangle and there cause symptoms due to pressure or deformity. Cases which do present symptoms, however, are very frequently diagnosed wrongly, because the neck is not examined for a possible extra rib to account, for example, for the symptoms of a neuritis in the arm. Hence, before the introduction of radiography, the condition was frequently discovered only accidentally, or, if attention was by any chance directed to the neck, the condition was as often mistaken for something else. The condition is now more often recognized, and it becomes possible to relieve pain and to obviate further complications such as possible aneurysm of the subclavian, gangrene, or paralysis of the muscles of the hand.

4. **Formaldehyde Iodine Catgut.**—Steward is in favor of formaldehyde iodine catgut, because its preparation is extremely simple, and can be carried out quite easily by surgeon or house surgeon. The advantages of this over suture material prepared by complicated processes by instrument makers and others are obvious. It is very strong, although after it has been kept for several months the very fine sizes do certainly become brittle. It is very resistant, and there is consequently no fear of too rapid absorption. It is beautifully smooth, uniform in diameter, inelastic, and delightful to handle.

7. **Uncured Rice as a Cause of Beriberi.**—Ellis recites his experience with beriberi. The disease broke out in the Lunatic Asylum in Singapore in

an appalling manner early in 1896 and resisted all endeavors to combat its ravages until toward the end of 1901 when he began to experiment with Bengal pure rice. In these earlier experiments carried on throughout the years 1902 and 1903 some of the patients were given a diet with cured rice and some with uncured rice for varying periods, and from watching the results, he was inclined to think, for the first time, that there might be something in the theory, so persistently maintained by Dr. Braddon, that the consumption of stale, uncured rice was in some manner the causative agent of the disease. In 1904 all patients were kept on cured rice until October 16th without a case of beriberi occurring; upon this date a change was made to uncured rice, with the result that there were fifteen cases in December with one death. Throughout 1905 several changes were made from cured to uncured rice and back again. These experiments so increased our author's belief in the theory that in 1906 he used during the first eleven months of the year cured rice and without a single case of beriberi. This result decided him to make one last and systematic trial of the two varieties of rice, and he determined that for a year or longer all patients should be placed alternately four months on a diet containing cured rice and four months on uncured rice. The full native diet consisted of rice, $1\frac{1}{2}$ lb.; meat, 4 oz.; fish, 4 oz.; assorted vegetables, 6 oz.; salt, $\frac{1}{2}$ oz.; onions, $\frac{1}{2}$ oz.; garlic, $\frac{1}{8}$ oz.; and lard $\frac{1}{2}$ oz. daily. This trial was carried out with the exception that the second and third spells of four months on uncured rice were cut short on account of the rapid manner in which patients from all parts of the asylum succumbed to beriberi. The cured rice used by the author is soaked in water for forty-eight hours, the water being once changed. It is then placed in boilers and steamed (not under pressure) until the grains burst, generally a matter of from ten to twelve minutes; it is then sun dried, and afterward goes through the mill, and is husked in the ordinary way.

THE LANCET.

October 2, 1909.

1. Medical Education, By GEORGE R. MURRAY.
2. Introductory Address, By H. D. ROLLESTON.
3. Inaugural Address, By MRS. HENRY FAWCETT.
4. The Theory of Vision, By F. W. EDRIEDGE-GREEN.
5. A Note on the Pathology of Lead Poisoning, By KENNETH W. GOADBY and F. W. G. WOODBURY.
6. A Study of Spinal Anæsthesia in Children and Infants. From a Series of 200 Cases (Continued), By H. TYRRELL GRAY.

4. **The Theory of Vision.**—Edridge-Green gives his theory of vision: The cones of the retina are insensitive to light, but sensitive to chemical changes in the visual purple. Light falling upon the retina liberates the visual purple from the rods, and it is diffused into the fovea and other parts of the rod and cone layer of the retina. The decomposition of the visual purple by light chemically stimulates the ends of the cones (probably through the electricity which is produced) and a visual impulse is set up, which is conveyed through the optic nerve fibres to the brain. He assumes that the visual impulses caused by the different rays of light differ in character just as the rays of light differ in wave length. Then in the impulse itself we have the

physiological basis of the sensation of light, and in the quality of the impulse the physiological basis of the sensation of color. The quality of the impulse is perceived by a special perceptive centre in the brain within the power of perceiving differences possessed by that centre or portions of that centre. According to this view the rods are not concerned with transmitting visual impulses, but only with the visual purple and its diffusion. He then remarks that the anatomical arrangement of the retina is consistent with the theory he has given. In the fovea of the retina only cones are to be found. Immediately external to this each cone is surrounded by a ring of rods. The number of rings of rods round each cone increases as the periphery is reached. The outer segments of the cones are situated in a space which is filled with fluid. The external limiting membrane retains this fluid in its place. It is easy to understand how adaptation to darkness is brought about by a steadily increasing percentage of visual purple being added to this fluid, thus rendering it more and more sensitive to light. It is easy to trace the connections of the cones with the inner layers of the retina, but the rod fibres appear to end in nucleated enlargements.

5. Lead Poisoning.—Goadby and Goodbody state that there are three conceivable channels by which lead may enter the system—namely: 1, Through the gastrointestinal canal; 2, through the respiratory system; and, 3, through the skin. For many years the first of these channels was considered to be the one of primary importance, possibly owing to the prominence of colic as a symptom; but more recent investigations have determined that the incidence of industrial lead poisoning varies directly as the dust produced in the particular lead industries. They have made experiments on animals and think that the essential and primary action of lead intoxication is the production of minute and microscopical hæmorrhages in various portions of the body, including the nervous system. The clinical symptoms of lead palsy, and its good prognosis when treated early, are explainable by the presence of minute hæmorrhages in the peripheral nerves. The presence of these minute hæmorrhages in the nervous system also gives an explanation of the varied pathological findings of many previous workers.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 30, 1909.

1. Bernhard Naimyn. By MAGNUS-LEVY.
2. The Surgical Treatment of Tuberculosis of the Nasal Mucous Membrane. By A. ONODI.
3. A Case of Tumor of the Brain. By ANGELO PIAZZA.
4. Total Extirpation of the Right and Partial Extirpation of the Left Superior Maxilla. By M. ALBICHT.
5. Central Luxation of the Hip Joint. By A. HESCHELIN and E. SCHAPIRO.
6. Threatening Dyspnoea with Collapse after an Injection of Serum. By ARENT DE BESCHE.
7. Concerning the Hæmolysis with Paroxysmal Hæmoglobinuria. By A. A. HYMANS VAN DEN BERGH.
8. New Spectra of the Blood. By ANGELO DE DOMINICIS.
9. Technique of Wassermann's Reaction. By J. A. FINKELSTEIN.
10. Observations Concerning the Asiatic Cholera in 1908 and 1909 from the Data of the Obuchow Hospital for Men in St. Petersburg. By HESSE.

2. Surgical Treatment of Tuberculosis of the Nasal Mucous Membrane.—Onodi advocates the total removal of the nasal mucous membrane so as

to do away with not only the manifest primary tuberculous changes, but also the possibility of leaving behind latent patches to carry on the disease. He mentions cases in which this was done but recurrence appeared in from nine months to two years. The operation is indicated only in primary tuberculosis of the membrane. In general tuberculosis with secondary ulcers of the nasal mucous membrane the latter are to be treated locally.

3. Brain Tumor.—Piazza gives in full detail the clinical history and the findings on autopsy in a case of sarcoma about the third ventricle involving the corpora quadrigemina and the right optic thalamus.

4. Extirpation of the Upper Jaw.—Albicht reports the successful performance of an operation for removal of a tumor in a case in which intervention was indicated first because the tumor appeared to be malignant, second because if nonmalignant it pressed so on the surrounding tissues, on account of its size, that respiration was interfered with. Up to the time of writing there had been no recurrence.

6. Dyspnoea with Collapse after an Injection of Serum.—De Besche reports the case of a man, thirty years old, in other respects healthy, who came under observation for a sore throat. Diphtheria was diagnosed bacteriologically and 1,000 units of antitoxine were injected. Half an hour later he was seized with extreme dyspnoea and collapsed so that the pulse could not be felt. Two hours after the injection he began to recover and an hour later the respiration was free, and the patient complained only of a severe pain at the level of the diaphragm. The cyanosis was fast disappearing, the pulse was regular but rapid (112). The next day there was a little pain, swelling, and redness in the skin at the site of the injection extending down the right side of the loins to the scrotum. These symptoms disappeared in three days.

MEDIZINISCHE KLINIK.

August 22, 1909.

1. Hypnosis Treatment. By THEOPHIL BECKER.
2. Chronic Bronchial Diseases, Tuberculosis Excluded (Continued). By POSSELT.
3. The Resistance of the Red Blood Corpuscles and the Action of Iron and Arsenic. By ALOIS STRASSER and FRIEDRICH NEUMANN.
4. Trienal Poisoning. By WEYERT.
5. Experiences with Goldschmidt's Endoscopy of the Posterior Urethra. By JULIUS HELLER.
6. The Operative Treatment of Paralysis of the Deltoid. By KARL LENGFELNER and FRITZ FROHE.
7. Delivery with Atresia Ani Vestibularis. By A. LIEFF.
8. Treatment of Local and General Hyperhidrosis. By KARL GERSON.
9. Modern Studies Concerning the Physiological Action of Carbonic Acid Gas Baths. By LEOPOLD FELLNER.
10. Organic Combinations of Arsenic. By F. BLUMENTHAL.
11. Bread and Its Dietetic Value. By CARL BRAHM.
12. Skin Treatment. By FELIX PINKUS.

2. Chronic Bronchial Diseases.—Posselt presents in this portion of his paper a brief review of the literature on plastic bronchitis that has appeared since 1900. The treatment is not perfectly satisfactory.

3. Resistance of the Red Blood Corpuscles.—Strasser and Neumann declare that the conception held of the resistance of the red blood corpuscles is correct, with the limitation that fluctuations of the

hæmoglobin often appear unsuited to the resistance. Lowered isotone with increased hæmoglobin shows a true elevation of the protoplasmic resistance, while the reverse condition shows a true diminution. A rise of the isotonic value runs parallel with the enrichment of the blood corpuscles with hæmoglobin during treatment with iron, from which a conclusion that the resistance is diminished does not appear to be justified. Medication with arsenic, whether given internally, subcutaneously, or intramuscularly, produces a true elevation of the protoplasmic resistance of the red blood corpuscles.

6. **Paralysis of the Deltoid.**—Lengfellner and Frohse describe the operations of transplantation of the pectoralis major to do the work of the deltoid, of transplantation of the subscapular nerve into the axillary, and of transplantation of the fifth into the seventh cervical nerve.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 24, 1909.

1. The Extraperitoneal Cesarean Section. Its Technique and Indications, By KÜSTNER.
2. Treatment of the Optic Neuritis in Oxycephalus. By ANTON.
3. Combined Active and Passive Protective Inoculation and Treatment in Puerperal Fever, By Levy and HAMM.
4. Prognosis and Treatment of Puerperal Fever, By BIRNBAUM.
5. Intrafocal Use of Marmorek's Tuberculosis Serum, By SCHNÖLLER.
6. Diagnosis of Latent Malaria, By FLEHN.
7. Treatment of Ophthalmia Neonatorum, By SPIRO.
8. A New Maneuver in Narcosis, By KÜHL.
9. Pollutio Interrupta, By NÄCKE.
10. The Care of Infants in Schwabach during 1908, By RAAB.
11. Shot Wound of the Aorta with Bullet Encysted in the Cardiac Valve, By TEGELER.
12. The Consequences of a Hysteropexy with Castration, By ZIEGENSPECK.
13. A Simple Contrivance for the Convenient Performance of the Test of Urine with Nitric Acid, By STEINER.
14. The Rotation Delivery Forceps, By JAKS.
15. Examination of the Blood by Means of the Turpentine Guaiac Test, By LINZ.
16. Max Runge, By ZINSSER.

2. **Optic Neuritis in Oxycephalus.**—Anton reports the case of a man who had a high degree of oxycephalus and was progressively losing his vision from optic neuritis. Other methods having failed to give relief the skull was trephined in the region corresponding to the greater fontanelle and a portion of bone removed about the size of a quarter. The headache and dizziness, which had been considerable, were completely relieved and the vision progressively improved. The optic neuritis was ascribed to a great venous hyperæmia which was relieved by the operation.

5. **Intrafocal Use of Marmorek's Tuberculosis Serum.**—Schnöller was induced to try this method of injection by the consideration that in the usual methods of injection the serum becomes much thinned by mixture with the entire mass of circulating blood, is distributed in this condition over the whole body, and only a very minute quantity reaches the ordinarily badly vascularized tuberculous focus, and that then it has hardly time to diffuse itself into the diseased tissue through the walls of the vessels from the more or less rapidly flowing blood stream.

Therefore a greater and more rapid action was to be expected if the serum was injected directly into the diseased focus. As the doses so used would be comparatively small the cost would likewise be less. He reports two cases treated in this way with success.

11. **Shot Wound of the Aorta with Bullet Encysted in the Cardiac Valve.**—Tegeler while performing an autopsy on a man, thirty-two years old, found a bullet encysted in one of the segments of the tricuspid valve. A scar was then found in the skin at the level of the seventh intercostal space in the nipple line and a scar on a branch of the aorta three or four fingers' breadth above the valves. At this place the lumen of the aorta was constricted, but not enough to interfere with its function. Between these two points the course of the bullet could not be traced. Tegeler thinks that the bullet stopped in the wall of the aorta before it had perforated the intima; that later, after the wounded tissue had healed, it perforated the intima as the result of the constant friction of the blood stream upon the protrusion, and fell down into the heart, where it was caught by one of the segments of the tricuspid valve, and where it gradually becomes encysted through the development of connective tissue.

RIFORMA MEDICA.

September 6, 1909.

1. Polymorphous Septicæmic Fevers and Febricula, By GAETANO RUMMO.
 2. The Diagnosis of Pseudoascites due to Rupture of Ovarian Cysts, By AUGUSTO OTT.
 3. Inflammatory Periappendicular Tumor Resembling a Neoplasm, By FERDINANDO GANGITANG.
2. **Pseudoascites due to Rupture of Ovarian Cysts.**—Ott reports a case of rupture of an ovarian cysts in which the presence of fluid in the abdomen simulated ascites, and calls attention to the necessity of the distinctive diagnosis of ascitic fluid from an ovarian fluid. Physical examination cannot give any definite clue in these cases. Of course, when the rupture is sudden and accompanied by severe pain, etc., the true nature of the condition may be surmised. But there are cases in which the pain is slight and does not produce a vivid impression upon the patient, and in which, moreover, the fluid passes very slowly from the cyst into the peritoneal cavity. Exploratory puncture may solve the difficulty, but a needle of sufficient calibre must be used on account of the great density of the ovarian fluid noted in some cases. Microscopical examination of the fluid is the only sure method of diagnosis. The presence of prismatic cells or masses of cells resembling scales of epidermis, but very transparent, will point to the nature of the fluid, and will exclude the possibility of ascites, especially if there are a large number of granular corpuscles filled with fatty granules.

September 13, 1909.

1. Paratyphoid Fever and Febricula, By GAETANO RUMMO.
 2. Loss of Passive Antidiphtheritic Immunity as a Consequence of Serum Sickness, By CARLO FRANCESCHI.
 3. The Hematological Reaction of Cesaris-Demel in the Diagnosis of Nascent Suppuration, By GIUSEPPE FINZI.
3. **The Phenomenon of Cesaris-Demel in the Blood of Nascent Sepsis.**—Finzi reviews the subject of the presence of true pus cells in the cir-

culating blood, as stated by Cesaris-Demel. The last mentioned author, in June, 1896, presented a communication to the Academy of Medicine of Turin, in which he described a method of staining blood smears with an alcoholic solution of brilliant cresyl blue, associated with an alcoholic solution of Sudan III for the purpose of coloring the pus corpuscles in the blood. This author's findings were partly confirmed in 1907 by Quarelli and Buttino, as well as by Professor Foà of Turin, and in 1908 by Crespellani. The latter found the "sudanophile reaction," as it is called, in cases other than sepsis, and regarded the presence of sudanophile leucocytes simply as an indication of an extreme form of leucocytosis. The present author publishes a case in which the value of the sudanophile reaction is shown. The patient had an intermittent fever and chills, but no malarial organisms in the blood, while the sudanophile reaction was pronounced. There was a marked leucocytosis with an increase of the polynuclear cells. An internal suppuration was suspected, yet no local process was evident. The patient died after a number of days of intermittent fever, and at autopsy an abscess of the liver was found. Two round ulcers were also found in the stomach, and the probability was that the abscess had originated through infection of these ulcers. The presence of sudanophile granulations in the leucocytes seems of value in the detection of obscure cases of sepsis.

ROUSKY VRATCH.

August 29, 1909.

1. Indications for Cesarean Section in Cases of Deformed Pelvis. Fifteen Cases of Cesarean Section, with Good Results for the Mothers, By S. S. Kholmogoroff.
2. The Value of a Study of the Motor Functions in the Objective Investigation of the Nervous and Mental Spheres (*To be Continued*), By V. M. Bekhtereff.
3. Changes in the Spinal Cord in Cholera (*Concluded*), By M. D. Khanutina.

3. **Changes in the Spinal Cord due to Cholera.**—Khanutina found that the changes discovered in the spinal cord in cholera patients remained the same after a number of hours had elapsed since death, and concludes that these changes were due to cholera endotoxine. The vessels of the spinal cord as well as those of other organs were filled with tarlike blood, but changes in their walls were not always present. Hæmorrhages were quite frequent in the cord. The nerve cells were frequently lacking in nucleoli, and sometimes in nuclei, while at other times the nuclei were ectopic. The nuclei often showed great affinity for dyes. Nissl's granules in many cells were altered, but there was never complete chromatolysis. The changes in the chromatophile substance were not specific for cholera, but were found in other toxic conditions. The destruction of the chromatophile substance was at its height in the algid stage and less marked in the typhoid stage. In the algid stage the neurofibrillar apparatus showed extensive destructive changes, and while in the typhoid stage this apparatus also showed marked changes, the long fibrils were more or less intact. The white substance and the neuroglia did not present gross changes.

AMERICAN JOURNAL OF OBSTETRICS.

October, 1909.

1. On Postoperative Separation of Laparotomy Wounds (Postoperative Prolapse of Intestines), By E. RIES.
2. Cervical Cesarean Section, By H. F. LEWIS.
3. Vaginal Cesarean Section with Report of Four Cases, By W. M. SPRIGG.
4. The Use of Morphine and Scopolamine in Labor with Report of One Hundred Cases, By J. HALPENNY and C. H. VROOMAN.
5. Pancreatitis, By T. ABBE.
6. Post Partum Hæmorrhage, By O. HOFFMANN, JR.
7. Epithelioma of the Vagina, By E. A. BALLOCH.
8. The Toxæmia of Pregnancy, By F. H. JACKSON.
9. Acute Inflammation of the Nasopharynx in Infants and Young Children, By O. M. SCHLOSS.

1. **On Postoperative Separation of Laparotomy Wounds (Postoperative Prolapse of Intestines).**—Ries notes the frequency of this condition and refers to the investigations of Madelung upon the subject. He distinguishes septic from aseptic wounds, the former being excluded, as healing may be prevented by microorganisms. He considers that laparotomy wounds differ as they have been partially or completely closed at the time of operation, the latter being discussed in this paper. Careful study was made of several favorable cases, and it was observed that there were always two steps in the postoperative prolapse which were separated by longer or shorter intervals. The first is the separation of the deeper layers which then granulate but do not heal because the abdominal contents push in between the granulating edges. The second step takes place days or weeks afterward when the skin also gives way. Separation may take place by the snapping of catgut ligatures as in coughing, sneezing, or vomiting. But the suture may also become defective by the knots coming apart. Again the suture may remain firm, but the tissue give way, the stitch cutting across the tissue transversely or the fascia and muscle may be torn within or behind the line of stitch holes. It is concluded that the accident in question is occasionally inevitable whatever care be taken by the surgeon.

3. **Vaginal Cesarean Section, with a Report of Four Cases.**—Sprigg refers to the prevailing tendency to recommend abdominal Cesarean section as an operation of election when there is disproportion between the child's head and the pelvic inlet. The vaginal section is, of course, contraindicated if the head cannot safely pass through the pelvis. The indications for vaginal Cesarean section are classed under two heads: 1. When the life of the mother or child is in grave danger and the uterus must be quickly emptied, the cervix being rigid and unyielding. 2. When manual or instrumental delivery is sure to be attended with lacerations, as in carcinoma of the cervix, stenosis of the cervix, rigid os, and cervix from scar tissue, etc., a clean cut wound being much more readily approximated and sutured. The two principal morbid conditions for which this operation is usually performed are celomecia and placenta prævia. All of the author's four cases were operated in for convulsions and all resulted favorably. The rapidity with which the uterus can be emptied in this condition is the chief argument for the vaginal section.

4. The Use of Morphine and Scopolamine in Labor, with Report of One Hundred Cases.—Halpenny and Vrooman found no untoward effect upon the mothers in their observations, apart from slight mental disturbance. Labor was not interfered with, and there was no post partum hemorrhage. The more successful the anesthesia the more free were the patients from subsequent bad symptoms. As to the possible effect upon the children two premature children were born dead in cases in which labor had been induced for eclampsia, one child in occiput posterior position with prolapsed cord was born dead, and one was dead four or five days before birth. All the other children were born alive, and there was no difficulty in resuscitating them in any case with one exception, in which the resuscitation from asphyxia was slow. Where these drugs are carefully given they will alleviate the pain of labor, and frequently they will abolish the remembrance of pain. Delirium and flushing of the face may occur but they have no particular significance. The treatment should be used only when the patient is in a hospital or has a good nurse, not that the method is dangerous but that the presence of sympathizing friends may intensify the nervous conditions.

THE MILITARY SURGEON

October, 1909.

1. Hygiene of the Preventable Diseases of the Asiatic Station, By F. M. MUNSON.
2. Ambroise Paré—A Sketch of the Romance Side of His Career as Army Surgeon, By ALEXIUS McGLANNAN.
3. Disease—A Conservative Instrument of Nature, By P. C. KALLOCH.
4. The Treatment of Appendicitis under Conditions Incident to the Naval Service, By CHARLES F. STOKES.
5. A Case of Insolation Followed by Amnesia and Exhaustion, By CHARLES N. FISKE.
6. The Work of the Board for the Study of Tropical Diseases in the Philippines, By JAMES M. PHALEN and HENRY J. NICHOLS.
7. A Plaguelike Bacillus Causing Epizootics amongst Alaskan Dogs, By FERDINAND SCHMITTER.

7. Plaguelike Bacillus in Alaskan Dogs.—Schmitter states that in the Yukon valley the dogs are affected by an enzootic disease, becoming epizootic in the fall and spring being in abeyance or disappearing during winter and summer. Dealing with this is an important economical problem, for in many localities dogs are the only means of transportation. This condition makes them valuable animals. Common dogs are worth \$25 to \$50 each, while the better breeds run from \$50 to \$100 or more in value. Practically all dogs take the disease when pups. Often an entire litter of promising pups several months old die off in a short time. The survivors are immune, and are not affected by subsequent epizootics. The mortality is high. During the fall of 1907 and the spring of 1908, he investigated these epizootics and found them due to an organism which closely resembled the plague bacillus. The course of the disease was quite variable. Generally there was first indifference to food and weakness. In a few days pus would run from the eyes and nose, and, in severe cases, from mouth, anus, and urethra. The pup would become too weak to arise and would lie for days affected with a severe

dyspnea. The bowels discharged freely, in advanced cases blood and mucus. There was always great emaciation. A paralysis of the hind legs usually developed so that when one recovered he dragged his hind legs after him for a while. Death usually occurred in a week or two. There was found a bacillus similar to the plague bacillus, varying in the appearance of the diplococcus, streptococcus, and streptobacillus. It was cultivated from lungs, pleural cavities, heart's blood, livers, and gallbladders of the dogs. The organism was immotile, decolorized by Gram's method, and no evidence of spores could be found. The author then states that he has seen several instances of Indian children sick with the combination of bronchopneumonia and intestinal symptoms similar to the dogs. There were two deaths, but on account of their superstition he failed to get autopsies. There was never any glandular enlargement as might be expected if it were plague. He has never seen any clinical evidence of plague amongst the natives. The finding of this organism is very suggestive along with finding of plague in rats, ground squirrels, and other small animals of the Pacific coast.

AMERICAN JOURNAL OF SURGERY.

October, 1909.

1. Fibroid Degeneration of the Appendix Vermiformis, By ROBERT T. MORRIS.
2. Where is the Appendix? By GEORGE I. MILLER.
3. Inflamed Undescended Testicle Causing or Simulating Appendicitis; Appendicitis, a Cause of Undescended Testicle. Case Reports, By F. V. CANTWELL.
4. A Résumé of the Various Operative Techniques for Dislocated Kidney, and the Application of Each, By EARL HARLAN.
5. Remarks on the Surgical Treatment of Chronic Nephritis, By JOHN F. CONNORS.
6. New Methods of Testing the Intermal Ear, Especially the Functionating Condition of the Semicircular Canal System; Also Some Distinctive Diagnostic Signs of Cerebellar Abscess and Tumor, By JOHN McCoy.
7. Urogenital Tuberculosis. A Plea for Early Diagnosis and Conservative Treatment, By G. MORGAN MUREN.
8. Dilatation of the Female Urethra, By THOMAS BRAY SPENCE.

2. Where is the Appendix?—This is a question which will often come before the surgeon invading the abdominal cavity. Miller rightly remarks that the textbook descriptions are diagrammatic and do not apply to pathological contortions or resulting destructions. As a theoretical outline of where the appendix is to be found we must bear in mind (a) the position with regard to the cæcum; (b) the direction it may assume; (c) the relation it acquires to the neighboring peritonæum. At the same time we must remember that the diseased appendix can be found in the rarest possible position, not as yet described. When we confine ourselves to the catarrhal state of the appendix, then the three muscular bands of the colon easily lead us to the point of attachment. Extensive and firm adhesions, however, change the scenery of the operative field. The author describes the innumerable changes and quotes the leading surgeons on the question.

3. Undescended Testicle.—Cantwell reports three such cases and remarks that one cause of undescended testicle is appendicitis in the fetus. The right testicle is more often retained than the left.

The mildest inflammation might cause a cobweb adhesion enough to stop the descent of this organ.

4. **Dislocated Kidneys.**—Harlan emphasizes some important points to be borne in mind while operating to relieve the symptoms produced by dislocated kidney: Do not attempt to "hang" the weight over the "hole" by suspension of the kidney by its capsule or fragments thereof. Never "fix" the kidney through a lumbar incision, working as you must do in the dark without being able to discover adhesions, kinks, etc. Never resort to the unsurgical procedures of removing a portion of the rib; suturing a flap of the capsule over or to the rib; dissecting off a piece of the lumbar fascia to deepen the renal fossa; placing deep sutures or any sutures at all through the kidney substance or its capsule; trying to produce granular adhesions of the peritonæum to the fascia by packing with gauze; or placing sutures and confining the attachment to the lower pole, allowing the kidney to tilt forward and be crushed into that position by the superimposed weight of the liver. Operate from a point of entrance by which you may be assured of meeting and dealing with all complications by the combined experience of touch and sight. In conclusion he predicts that all posterior operative procedures and all operations intending to "fix" the kidney will become obsolete, and only those measures will be applied which relieve and replace an obstructed ureter, eliminate the pocket, and support the kidney at its lower pole, while making sufficient correction of a disabled peritonæum to prevent either the upper or lower poles of the kidney from protruding into the peritonæum or bowel.

THE PRACTITIONER.

October, 1909.

1. On Being Tired, By SIR LAUDER BRUNTON, Bart.
2. Indigestion, By F. J. SMITH.
3. The Treatment of Lobar Pneumonia, By ARTHUR LATHAM
4. Headache, By WILFRED HARRIS.
5. Jaundice, By GUTHRIE RANKIN.
6. The Common Cold, By HARRY CAMPBELL.
7. Neuralgia, By PURVES STEWART.
8. Pertussis or Whooping Cough, By J. HUGH THURSFIELD.
9. Treatment of Bronchitis, By J. CARLTON BRISCOE.
10. Boils and Carbuncles and Their Treatment, By H. G. ADAMSON.
11. Corns and Bunions, By J. FOSTER PALMER.
12. Fractures of the Upper Extremity of the Femur and Their Treatment, By J. HOGARTH PRINGLE.
13. Pelvic Pain apart from Obvious Lesions, By H. T. HICKS.
14. The Operative Technique of Piles, By J. H. NICOLL.
15. Useful Points in Connection with Diseases of the Ear, By MACLEOD YEARSLEY.
16. Common Diseases of the Hair, By TOM ROBINSON.

1. **On Being Tired.**—Sir Lauder Brunton shows that being tired may be produced by a number of causes, yet the most frequent is excessive muscular exertion. Over exertion in a muscle causes it gradually to lose its power of contraction, until, finally it cannot contract at all, and so movement either of the body or limbs becomes impossible. But so long as muscles are connected with the central nervous system the complete exhaustion of the muscle is impossible. Fatigue of muscles and their failure to contract are not due, as one would at first suppose, to exhaustion or destruction of their contractile elements; but are really produced by the

muscle being poisoned by the products of its own action, just as a fire becomes choked by its own ash. The exact chemical nature of fatigue toxins has not yet been determined, but it is quite likely that they may be nearly allied to ammonia, but faulty metabolism in the digestive organs may be responsible for a great deal of fatigue. In addition to this toxins may be directly formed by certain pathogenic microorganisms, as the bacillus coli. Another form of weariness is that of emotional fatigue. While weariness may be produced by the direct action of chemical substances on the brain itself, on the motor nerves, and upon the muscles directly, we must always remember that a part is played by the circulation, both in supplying the substances necessary for functional activity, and in removing fatigue producing bodies.

3. **Treatment of Lobar Pneumonia.**—Latham says of the vaccine treatment that it leaves much to be desired. The effects of vaccines in chronic pneumococcal infections and the results of vaccine therapy in other diseases show the necessity of investigating thoroughly the value of vaccine therapy in acute pneumonia. His own experience is, on the whole, encouraging. In several cases in which the patients' physique was good, and in which, in any event, a recovery appeared to be probable, the use of a pneumococcal vaccine has been coincident with a rapid improvement. In some of these instances the crisis has occurred on the second, third, or fourth day, apparently as the result of the vaccine, and recovery has been uneventful. But it has not been of service in severe attacks in debilitated or elderly people. There can be no question that an excessive dose may lead to the spread of the disease to the other lung, or to the formation of an empyæma. A vaccine prepared from the patient's own strain acts better than a "stock" vaccine, but the preparation of the patient's own vaccine, although it may be done in twenty-four to forty-eight hours, is not always possible, and, in any event, means some loss of valuable time. The dosage to employ remains to be worked out. The fact that very different results are obtained points to the varying potency of the "stock" vaccines on the market. The initial dose must be in accordance with the age and physique of the patient, the severity of the disease, and the day of the symptoms. It is rarely wise to give a larger initial dose than ten millions. The result can be well watched on the temperature record, and it is doubtful whether even frequent readings of the opsonic index give us any further information. If a dose is followed by a lowering of the temperature it has done good. If the temperature then rises again, we may repeat the dose (or give a slightly larger one in some cases) at an interval of thirty-six to forty-eight hours from the first dose. If a dose is followed by a rise in the temperature it has been too great. If a dose has no effect on the height or range of the temperature or on the symptoms we may give a larger one in thirty-six to forty-eight hours.

8. **Pertussis.**—Thursfield states that whooping cough is almost certainly due to the invasion of a microorganism, as to the character of which there is as yet no certain knowledge. Attempts have been made to devise a serum treatment, but until

the true cause of the disease is known such attempts, with our present knowledge, are doomed to failure. Of drug treatment we know that the whole armamentarium of expectorants and antispasmodics has been tried. The author reviews a number of drugs. But the only one he is in favor of is belladonna. A combination of belladonna with one or other of the bromides seems to be most in favor, and in some cases undoubtedly produces a temporary amelioration; unfortunately the effect passes quickly, and a renewed administration often fails to produce the previous result. Nevertheless, in cases of any degree of severity, it is undoubtedly wise to persevere with the tincture or extract of belladonna, which may be given even to young children in far larger doses than the official ones without any ill effects. Thus, to a child of three or four years, the full adult dose of 15 minims may be given three times a day, and even may be pushed beyond that, provided no symptoms of poisoning occur. Nor is the occurrence of bronchopneumonia a contraindication; in the majority of cases of such a complication, belladonna is extremely useful. The best of the tonic, and possibly bactericidal, drugs to employ is quinine, which is unfortunately a drug which it is difficult to administer to children, who dislike it, as a rule, extremely. It may, however, be given in combination with belladonna in the form of the compound tincture.

EDINBURGH MEDICAL JOURNAL

October, 1909.

1. The Infection Element in Consumption.
By ALEXANDER JAMES.
2. On Removal of the Normal Appendix.
By H. A. LEDIARD.
3. The Treatment of Constipation in Children.
By G. H. MELVILLE DUNLOP.

3. **Constipation in Children.**—Dunlop remarks that chief amongst the causes bringing about constipation are the neglect of attending to the calls of Nature in early life. A child leads such an active, busy life, and is so fussily interested in his various occupations and in his play, that he is very apt to overlook, neglect, or even restrain the gentle pleadings of the bowel to be evacuated. Toleration of Nature's normal stimulation soon becomes established, and eventually fails to be appreciated, and no response takes place. The child does not understand the importance of disregarding the warning, and the responsibility therefore falls on the mother or nurse, and the necessity of not allowing a day to pass without ascertaining whether the child's bowels have been evacuated, cannot be too strongly impressed upon them. Even in young babies the habit is easily acquired if attention is paid to the matter. The administration of too little fluid is another factor in the causation of constipation. A child should regularly drink a small tumblerful of cold water night and morning. The want of sufficient exercise is another factor, constipation occurs oftener during winter than summer. But the insistence of cultivating the daily habit is next to diet of greatest importance. Of drugs he mentions the various compounds of cascara. Cascara acts better when given in small doses, three times a day, than in a larger dose at night, and, when combined with equal parts of liquid extract of liquorice and gly-

cerin, it seldom fails to effect a cure when persevered with for some time. Another old fashioned method of great service is the administration of sulphur and cream of tartar. When mixed with syrup of lemons so as to form a paste, it is quite palatable, and readily taken by young children.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Twenty-second Annual Meeting, Held in Fort Wayne, Ind., September 21, 22, and 23, 1909.

The President, Dr. WILLIAM HENRY HUMISTON, of Cleveland, O., in the Chair.

(Concluded from page 779.)

Rupture of the Uterus.—Dr. LOBENSTINE presented a study based on seventy-eight cases treated at the New York Lying-in Hospital. Rupture during labor might be divided into complete and incomplete ruptures of the uterus or of the vaginal vault. It was noteworthy that a large percentage of complete rupture occurred in multiparæ, and especially in cases in which the uterine musculature had been weakened by inflammation or scar tissue. The common situation of the rupture was the lower uterine zone. There were two fundamental types, the longitudinal and the transverse, but there was often more or less fusion of these types. In the list there were twenty-six that probably started as the vertical type, and twenty as the transverse. In the presence of a dystocia, especially from generally contracted pelvis of moderate grade, as the lower zone became thinner and thinner and more and more distended the lower portion of the cervix tended to become imprisoned between the fetal head and the pelvic brim. At the same time the contraction ring assumed a high level and acted as the upper fixed point. The lower zone finally had to give way if relief was not at hand.

The treatment of incomplete ruptures consisted of tamponage, alone or with sutures, rarely laparotomy. The treatment of vaginal vault ruptures comprised tamponage or laparotomy, with suture of the laceration, rarely hysterectomy. As to complete ruptures, if the child was free in the peritoneal cavity, always perform an abdominal section. If the child was still in the uterus, and the tear was a bad one, deliver at once. Use tamponage or hysterectomy on the spot. Do not move the patient. If the child was still in the uterus, and the tear was not a bad one, it would be best to move the patient to a hospital before delivering. Where the diagnosis was first made after the birth of the child, tamponage might be relied on if the patient was in good condition. Laparotomy was useless in the presence of severe shock.

Dr. ZINKE said rupture of the uterus from purely obstetrical causes should not occur in the hands of any one who knew obstetrics. He was referring to rupture of the uterus due to delayed labor, the result of an obstruction which was encountered in the passage of the child, and such ruptures should be wiped

from the records. Knowing the doctrine of narrow pelvis, as we understood it now, no man had a right to carry a patient to the verge of rupture of the uterus, as the clinical picture which accompanied the threatening danger was so clear that no man could possibly overlook it. The man who had taken the history of his case and studied his patient carefully would know in advance whether he had trouble to look for or not, and he would be on his guard and look for the symptoms indicative of rupture.

Dr. EDWARD J. ILL, of Newark, said that he wanted to speak of rupture of the uterus which was produced by the application of the forceps high up in a case of nonretracted cervix. Let a difference be made between the two. A dilated cervix did not mean a retracted cervix. The forceps, as a rule, should not be put on the fœtus, until the cervix was retracted. This was an old rule, but it was little followed.

Dr. LOBENSTINE quite agreed to what Dr. Ill had just said. The application of the forceps high up was responsible for a large amount of damage.

Calcareous Degeneration of the Fibroid Uterus.

—Dr. WALTER B. DORSETT, of St. Louis, read a paper on this subject and presented a specimen. On opening the abdomen, the tumor was found lying loose in the pelvis. On grasping the mass, the operator was reminded of the sensation usually imparted in the handling of uterine fibroids with a long pedicle. Supravaginal amputation was done, and the abdomen closed within a few minutes. The patient made an uninterrupted recovery and left the hospital within eighteen days, well and relieved of her distressing symptoms. The ligation of the renal artery of the rabbit by Litten and his subsequent discovery of the deposition of calcium salts in the renal tubules probably proved that the true etiology of calcareous deposits lay in a retrograde process due to deficiency of the blood supply. It could be readily seen that during the normal atrophic changes in the uterus, due to decreased determination of blood toward the organ, degenerative changes were apt to occur.

Dr. CARSTENS said that some thirty or more years ago a woman came to the dispensary with fibroid tumors. At that time they did not operate on these tumors so frequently as they did to-day. She was not operated on then. About five years ago she presented herself with three tumors which were jammed in the pelvis, causing obstruction of the bowels and bladder. He operated on her, removing one tumor about six inches long and four inches thick. These tumors were so hard that he could not cut them open, but had to split them with a hatchet to show the calcareous deposits. No matter how long these cases were allowed to go, the tumors either underwent calcareous degeneration or became malignant; so on general principles all fibroid tumors ought to be removed.

Dr. PANTZER reported a case which was similar in every respect to the one related by the author of the paper.

Ovarian Pregnancy at Term.—Dr. WALTER C. G. KIRCHNER, of St. Louis, reported a case in which the clinical symptoms were those associated with tubal gestation. At a later stage the patient had the usual symptoms attending uterine pregnancy at term. The tumor mass originated in the right ovar-

ian region, and as pregnancy advanced the tumor was pushed toward the left side. The patient felt foetal movements about the fifth month of pregnancy. The condition was complicated by prolapse of the uterus with pronounced œdema of the cervix. The patient was submitted to laparotomy and a cyst-like tumor was extracted through the abdominal opening. The mass resembled an ovarian cyst and contained the fœtus. This was found to be at full term and well developed. It was easily resuscitated and it was in good health. The tumor mass was complicated by omental and intestinal adhesions. The appendix was adherent and appendectomy was performed. The left tube was free. The right tube was incorporated with the outer surface of the gestation sac. The ovarian ligament was connected with the gestation sac. The sac originated in the right ovarian region, where a broad pedicle had formed. This was ligated and severed. In this region also the main blood supply was obtained. The gestation sac contained the placenta and foetal membranes. The placenta was not associated with either tube and was free in the abdominal cavity. It occupied a central and anterior position in the gestation sac. The diagnosis was based on the presence of the uteroovarian ligament, the normal condition of both tubes, the situation of the tumor, and the microscopical evidence of the examination of the gestation sac. Mother and child were now living and in good health.

Dr. ZINKE said that ovarian gestation was a very rare thing, and he was glad there had been presented a case which left no doubt as to its real character. It was remarkable what Nature would not do under these circumstances when the ovum was implanted ectopically. The most frequent cases of ectopic gestation which went to full term were those where the tube held out to the last. It was comparatively rare, it was true, but these were the cases in which there were no adhesions between the abdominal viscera and the ectopic gestation sac. The next in frequency was the ovarian, but here very often rupture took place because of the brittle character of the ovarian tissue. There was another variety of ectopic gestation which went to term, but which was the rarest of them all, and that was when rupture took place sufficiently to permit the amniotic sac, with the decidua reflexa, which was formed under these circumstances, to escape into the abdominal cavity. Here the placenta continued to grow within the tube and ovary, as the case may be. Sometimes it made its way outside of the structures and implanted itself on the pelvic wall. Occasionally it happened that the membranes were broken because of the movements of the fœtus, and then the fœtus was found free in the abdominal cavity.

Dr. JONAS recalled a case of operation by Dr. Tuholske when he was assisting him, where in the second month of pregnancy the entire ovum was swept away from its seat of implantation in the right tube into the free abdominal cavity, implanted itself in the region of the liver, and changed the liver tissue, the peritonæum covering the kidney, and the parietal peritonæum to true decidual tissue. The pregnancy went on to term and the child was removed at the end of pregnancy alive. The mother died twelve hours after the operation. He did not

know at the time why she died. The specimen, which he had in his possession, showed it would have been impossible to remove the placenta by force from these organs.

Dr. A. B. MILLER said that in the pathological museum of his college, in Syracuse, a specimen had been recently placed of an ovary which contained an ovum of perhaps two months' development. The patient was operated on by a neighboring surgeon, he supposing he was simply dealing with an ovarian cyst. She came to him complaining of more or less pain, and on examination there was a small globular mass found in the pelvis. Without taking the history of the patient as to the possibility of this being a gestation sac, the woman was operated on and the ovary removed and found to contain this small embryo.

A Study of Four Hundred and Forty Operations on the Appendix, with Remarks.—Dr. ILL deplored the late diagnosis and the too frequent use of the hypodermic syringe; but for these the general results would be much better. In eighty-one women the appendix was removed incidentally, while other surgical conditions prevailed, and many were shown to be normal by the pathologist. He deplored the frequency with which the appendix was removed simply because the abdomen was opened, and believed that no operation should be done except for the express purpose of removing symptoms of disease for which the patient sought advice. Any prolongation of the operation might add to the patient's danger and certainly to his discomfort during convalescence.

A New Point in the Diagnosis between Appendicitis and Tubal Diseases.—Dr. ROBERT T. MORRIS, of New York, said that supersensitiveness at the site of the right group of lumbar ganglia indicated that the appendix alone was the centre of irritation. Supersensitiveness of both right and left groups of lumbar ganglia indicated that some pelvic structure was the centre of irritation. In cases in which there was a question if the appendix or some pelvic structure was causing local or reflex disturbance, one could commonly make a diagnosis at once by making deep pressure over the sites of both groups of lumbar ganglia, and noting whether these groups or only the right group were sensitive to an important degree.

Is the Routine Exhibition of the Preoperative Purge Defensible?—Dr. EDWIN WALKER, of Evansville, Ind., read a paper on this subject in which he drew the following conclusions: Purgatives could do harm and should be given only when indications were clear. The profession should abandon the slipshod, routine methods now in vogue and should teach the laity, both by precept and by example, the evils of the purgative habit. The practice of purging all patients before surgical operations was unnecessary and injurious; they were made more uncomfortable, they were weakened, and the condition of the intestinal canal was not rendered more favorable, but, on the contrary, germ activity was stimulated, just as it was in enteritis, increasing the probability of infection when the gut was opened, and there was in addition to this more postoperative tympany. A diet of digestible food for twenty-four hours or more and a fast of eight

or twelve hours before, would put the intestine in the best possible condition for any operation, especially on the intestinal canal, except where obstructive lesions existed, and for these purgatives were worse than useless, and other measures were required. In a few cases of mild fecal stasis a purgative several days before an operation, followed by enemata, was of service. These were, however, extremely rare. The routine use of any powerful drug was to be deplored, and the habitual preoperative purge was indefensible. The continuance of this practice indicated mental stasis of the surgical mind.

Cæsarean Section, Abdominal and Vaginal, Compared and Contrasted.—Dr. PORTER said that with a living and viable child the abdominal was the operation of choice; that the vaginal operation was probably never indicated in placenta prævia; that in cases demanding quick delivery, where the only obstacle was an undilated os, the vaginal operation should be done; that infection should not decide us in favor of either operation, but the fact that its existence added to the mortality of both should admonish us that neither was to be regarded as an operation of *dernier ressort*; that with a dead or dying mother, and a living, viable child, the abdominal operation should be done; and that better knowledge of the indications for these operations and a timely resort to them would materially reduce both the maternal and fetal mortality and morbidity.

Too little attention was paid to the life of the unborn child and too little to the morbidity of both child and mother. Obstetric procedures should be conducted with a view to perfect the recovery of the mother and the normal development of the child. The term vaginal Cæsarean section was a misnomer. Owing to the contracted and badly lighted field, obscuration of the field by blood, difficulty of attaining and maintaining perfect asepsis, and difficulty of extracting the child, the vaginal operation was the more difficult. The only obstacle to delivery which was removed by the vaginal operation was the cervix. The placenta was avoided by the vaginal operation except in cases of placenta prævia. The wound was nearer ideal after the abdominal operation. There was greater likelihood of infection after the vaginal operation, but if infection occurred the danger would be greater after the abdominal operation. Patients were more likely to object to the abdominal operation. Previous infection increased the danger of both operations. Remote dangers, such as rupture of the uterus, were about equal and very slight in both operations. The abdominal operation offered the child the best chance. The maternal mortality was about 1.58 per cent.; that of the vaginal varied from 0 to 6.5 per cent. The maternal morbidity was less after the abdominal operation.

Methods of Drainage in Abdominal and Pelvic Surgery.—Dr. JAMES F. BALDWIN, of Columbus, O., in this paper urged the more frequent resort to vaginal drainage in pelvic cases in which pus was present or there were extensive adhesions, and drainage through a stab incision in certain cases of appendicitis. He advised the use of gauze, not so much for real drainage as to keep the intestines from contact with raw or infected surfaces. He deprecated the use of the word drainage in these cases, and sug-

gested that the word "fluffage" would be more appropriate for the purposes intended. The gauze was passed through an incision in the vaginal vault from above down, the opening in the vault being of ample size, and the gauze being then so placed as to lightly fill the pelvis. In this way the gauze kept the intestines out of the pelvis and at the same time absorbed all discharges. The gauze was left in place for a week and then withdrawn. Sterile douches were then used until the cavity thus left became obliterated. He had used this method for many years and in a large number of cases with entirely satisfactory results, both immediate and remote.

How Can We Best Educate Our Women to Seek Relief Early from Carcinoma of the Uterus?

—Dr. FREDERICK said that the statistics of operations done for carcinoma of the uterus were much better from German clinics than in this country, and not because they had more skilful operators, but because the women were operated upon earlier, their women having been taught to consult the surgeon earlier when they had symptoms of malignant disease of the uterus. He thought there was a belief among general practitioners in this country that hysterectomy for carcinoma of the uterus was an unsuccessful operation, in so far as it prevented recurrence. Such had been the case and would continue to be so long as women so suffering were not operated upon earlier than they had been in the past. Early radical operations gave good results, and they ought progressively to give better and better results. Hysterectomy for carcinoma of the body of the uterus gave notably better results even in late cases than when the cervix was involved. Our women should be taught not only that early operation gave better results, but also that the severity of the operation and the mortality and the morbidity were decreased thereby.

Phegmasia Alba Dolens.—Dr. WILLIAM A. B. SELLMAN, of Baltimore, reported a case of this nature in connection with an ovarian tumor. He presented photographs showing the size of the tumor, the amount of abdominal distention, and the swollen limb. He considered that the phegmasia dolens in this case was due to pressure upon the iliac vessels on the left side, and that this pressure was immediately relieved with the removal of the tumor. The patient was fortunate in the rapid restoration of the circulation and in not having had a clot form, which might have destroyed her life by the entire clot or by a portion passing to the heart.

Removal of the Upper Portion of the Rectum and Sigmoid.—Dr. THOMAS B. NOBLE, of Indianapolis, related the case of a married woman, thirty-three years of age, in whom he extirpated the upper portion of the rectum and sigmoid for cancer. In connection with this case he showed an instrument which would be very helpful in this class of cases. It was the result of a study and use of Murphy's button. It had some advantages over the button in this class of work, in that it could be introduced more quickly; it served as a splint to the soft parts; admitted of irrigation of the colon and the prevention of impaction; and by continuous drainage kept the bowel quiet, thereby favoring prompt and perfect union. He believed it was a

useful means to the ideal end, namely, an intact abdomen, intact intestine, and competent anal sphincters.

Malignant Tumor of the Undescended Testicle.—Dr. O. G. PFAFF, of Indianapolis, said that the patient was thirty-eight years of age. Examination disclosed a tumor of the size of a fetal head, occupying the left lower abdomen and pelvis. The tumor was freely movable within moderate limits, but was apparently attached by a pedicle to a point near the internal inguinal ring. The mass was considered to be a malignant tumor of the undescended left testicle, and three days later the man submitted to an operation. Through an incision made to the left of the median line, the relationships of the mass were easily made out. The pedicle was attached to the internal ring, and there were some recent adhesions to the bladder, which were easily broken up. Then the pedicle was ligated and the mass removed. The man made an uneventful recovery from the operation, but within five months died of malignant disease. The speaker did not see him after he left the hospital, and did not learn as to the location of the later growth, other than that it seemed to affect both the bladder and the bowels. The microscopical examination of the growth showed it to be a large round celled sarcoma.

Terminal Events in Gallstone Disease.—Dr. CHARLES N. SMITH, of Toledo, said that gallstone disease was very prevalent, afflicting from seven to ten per cent. of adults dying in the public hospitals of England, Germany, and America, as was apparently substantiated by the records of thousands of post mortem examinations. Rupture of the suppurating gallbladder into the general peritoneal cavity was by no means an unusual terminal event, having occurred five times in his own experience. From observation of these and other cases, and from a study of the literature of the subject, he was convinced that the frequency with which rupture of the gallbladder occurred as a terminal event in gallstone disease was scarcely appreciated. These cases were commonly diagnosed as peritoneal infection from appendicitis and so recorded unless gallstones, correcting the diagnosis, were found in the peritoneal cavity. One of his patients, a few months before coming to him, had been operated on for a supposed appendicitis and the appendix removed. When a gauze drain was being removed, following the operation, a gallstone escaped from the cavity and others were expelled at subsequent intervals. Pus was discharging from the incision when she consulted him, and several gallstones were removed from the sinus by the scoop. The gallbladder, containing one large stone and a number of small ones, was removed, and recovery followed. Two others were brought for operation with a diagnosis of appendicitis, because of pain, tenderness, and swelling in the right half of the abdomen. Correction of the diagnosis prior to operation was not difficult. Free incision, removal of a gallstone, cleansing of the cavity, and abundant drainage, with the patient in the Fowler position, were followed by slow but eventual recovery.

Of the many terminal events of gallstone disease, malignancy was without question the most hopeless

from the standpoint of cure. That primary malignant disease of the gallbladder and duct was preceded by gallstones in practically every instance was the experience of surgeons and pathologists. It would seem that a due appreciation of the frequent occurrence and the serious import of these complications must lead to the surgical removal of gallstones as a conservative and prophylactic measure long before the opportunity was given for the onset of these terminal events. That this might be done would require a more general recognition of the initial symptoms of gallstone disease rather than upon the symptoms produced by these same terminal events.

Dr. PORTER emphasized what the author had said regarding the relative frequency of the terminal events of gallstone disease and the consequent importance of operating in cases of gallstones before these more serious results occurred. He was interested in what the author had said regarding posterior gastroenterostomy in those cases in which the pylorus was obstructed because of adhesions about it or the gut below, or because, on the other hand, of adhesions that were hard to break up, which hung the pyloric orifice up under the liver. This had occurred a number of times, and in some of these cases the separation of the adhesions had been not only difficult, but accompanied by considerable injury of the liver, and it was not unattended by danger. In many cases, after these adhesions were liberated, one would still have the greater difficulty to overcome, namely, their reformation in the position they were in before, and he was therefore impressed with the fact that many of these cases could be better treated by posterior gastroenterostomy, in so far as the relief of this feature was concerned.

With reference to removal of the gallbladder, personally he very rarely did cholecystectomy, yet within the last sixty days he had done it frequently. These happened to be cases that required the removal of the gallbladder. It was clearly established, however, that the gallbladder should be preserved as long as it was performing its function and communicated with the liver.

Dr. NOBLE referred to that condition in which by reason of pericholecystitis there were changes occurring in the stomach due to encroachment by the inflammatory exudate upon the pyloric area. In such conditions there would be gastric neuroses as well as true anatomical disturbances following. While the author had advised gastroenterostomy in such conditions, the speaker preferred the Finney operation. He did not favor establishing an artificial opening between the intestine and the stomach unless every other procedure had failed. But the Finney operation maintained the normal route and made drainage free and perfect. In the five cases in which he had practised it he had had very satisfactory results.

Officers for the Ensuing Year were elected as follows: President, Dr. A. B. Miller, of Syracuse, N. Y.; vice-presidents, Dr. Charles N. Smith, of Toledo, O., and Dr. Raleigh R. Huggins, of Pittsburgh, Pa.; secretary, Dr. William Warren Potter, of Buffalo; treasurer, Dr. X. O. Werder, of Pittsburgh, Pa. Syracuse, N. Y., was selected as the place for holding the next annual meeting, on September 20, 21, and 22, 1910.

Letters to the Editor.

THE CONSTRUCTION AND PRESENTATION OF MEDICAL PAPERS.

59 WEST SIXTY-EIGHTH STREET,
NEW YORK, October 8, 1909

To the Editor:

We grow so accustomed to regarding medicine as a science that we forget that it has an æsthetic side as well. I deem the renewal of medical society activity this coming winter as a fitting occasion to stimulate cultivation in a phase of medical art in which the profession, as a whole, and medical gatherings in particular, are vitally interested. I refer to the proper construction and presentation of papers at medical meetings. That there is room for improvement in this direction is, I believe, manifest to any one who attends medical meetings with any degree of regularity. Indeed, I may venture to say that the correct principles of dialectics are probably more honored in their breach than in their observance. In the vast majority of instances the contributions offered at our meetings are of solid merit; but much of their pedagogic force is lost because the elementary principles of concise and logical exposition and of elocution are ignored.

While we do not expect trained rhetoricians or orators at our meetings, the essential principles of these fields of human endeavor are within the grasp of every one; and, if they are adhered to, it is obvious that advantages will redound not only to the prestige of the speaker, but also to the interest and comfort of an audience. A full discussion of these principles would constitute an essay of considerable length; I intend on this occasion merely to offer a few of the more important suggestions that have occurred to me. These may be discussed under two headings: First, those relating to the construction of medical papers; and, second, those relating to their proper oral presentation.

1. *The proper construction of medical papers.*—Speaking broadly, the most flagrantly violated principle is this, that the speaker fails to realize that the psychology of the individual and that of the crowd, as Emerson pointed out, are two different things, and call for different argumentative weapons in order to bring about the desired impression. In other words, a medical paper should be modified according to whether the interests of a reader or of an audience are to be served. Facts of great interest to the reader, especially if he is seeking data for a communication of his own, bore an audience very quickly. Furthermore, where the psychic state of the reader is comparatively lethargic, that of an audience is quick and nervous, and requires greater and more constant stimulation to keep its interest aroused.

More specifically, suggestions toward attaining these ends may be expressed in the order of their importance as follows: It is manifestly difficult to prescribe a definite limit to the length of medical papers, but as a rule discourses requiring more than fifteen or twenty minutes must be either of superior merit and construction or expounded by a reader of exceptional ability. These attributes are particularly necessary when the speaker holds the floor for an

entire session, as, for instance, at the Harvey lectures. Even at these meetings, however, despite the unusual attainments of the participants, the unreasonable length of some of these lectures has been known to tax the patience, not to speak of the wakefulness, of the audience to the utmost. It may be stated as an axiom, therefore, that, other things being equal, the interest and assimilability of a medical discourse are in inverse proportion to its length.

A nice sense of discrimination in the selection of such facts as will prove of interest and profit to an audience will contribute much toward relieving a paper of its fatiguing properties. It would be better to say, perhaps, that the exclusion of unnecessary data was the simpler remedy. A long list of such errors of commission could be made, but I shall mention only such as are more frequently violated.

Long preambles on the importance and much neglected state of the subject about to be expounded are futile for the reason that the audience regards such a charge as the result of the author's propinquity to the subject. Even more regrettable are those interminable introductions which omit nothing of the history of the subject and its previous literature from the time of Hippocrates! Name follows name in stately procession, until the hearer is lost in the genealogical maze. Such introductions might be published, but should not be read. If a survey of the previous work done is necessary, the concise possible summary should be offered. In histories, physical examinations, or autopsies, the recital of irrelevant findings is the grossest waste of time, and tends largely to obscure the hearer's grasp of positive data. Even more reprehensible is the reading of protocols of experiments upon animals in the form in which they were entered in the author's note book. In no other connection is a summary a more urgent desideratum. The same criticism applies to the reading of strings of chemical analyses, tables, etc.

A word may be said in regard to the judicious employment of factors which will tend to render a discourse more assimilable to the hearer. One is the use of percentages instead of figures, wherever possible, and the other is the liberal use of graphic representations in the form of charts, diagrams, pictures, lantern slides, etc.

The static elements of a well constructed paper as I have attempted to outline them require for their fullest appreciation the dynamic factor of proper presentation. For this it is unnecessary, as I have said before, to be an orator. It is the understanding and not the orations to which the appeal is to be made, and for this purpose the mere elementary principles are essential. To ask, for instance, that the speaker shall be audible, is surely not an unreasonable demand. Nevertheless, this apparently is regarded by an appreciable number of our speakers with serene indifference. Instead of trying to address an assemblage, they assume an easy conversational tone which is entirely lost in a place with the acoustics of our Academy of Medicine. Less reprehensible, but not less annoying, is the common habit of reading at a rate utterly inconsistent with the faculty of comprehension. If our speakers would not submit to the very strong temptation to impart the greatest amount of instruction within

the shortest space of time, I believe this vice would be less common than it is. The avoidance of mouth-ing and slurring of syllables and words may be regarded as one of the refinements of medical elocution, but it affords a most grateful recompense when studiously adhered to. A point of apparently insignificant importance, but of vast consequence in contributing to the audibility of a paper, is the direction of the speaker's voice. It is manifest that if the reader directs his remarks downward toward a horizontal table upon which his paper rests, the voice will have less carrying power than if it were directed toward the audience. This misdirection of the speaker's voice is due, not so much to failings in our speakers, but to the faulty construction of the speaker's tables at our Academy. I believe that, were the tables built, according to the common plan, with erect sittings, such a criticism would be less likely to arise.

While I admit that matter always outbalances the manner of its presentation, I believe that attention to the foregoing suggestions will result in greater interest and attendance at our meetings than have been shown in the past. E. M.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Rational Immunization in the Treatment of Pulmonary Tuberculosis and Other Diseases. Comprising Paper Read before the Royal Society of Medicine, March, 1909. By E. C. HORT, B. A., B. Sc., M. R. C. P. New York: William Wood Company, 1909. Pp. 75.

This is a small monograph, of which fifteen pages are devoted to the reproduction of fever charts and two pages to bibliography; yet the work contains a great deal of information and shows patient and diligent research. It has five chapters. In the first one, entitled *The Relation of Treatment by Inoculation to Other Methods of Treatment*, the author speaks of three methods of treating infectious disease—surgical, general, and specific. He subdivides the surgical into mechanical and chemical methods. Regarding the choice of these methods, he makes the statement that the patient's own serum is often better antiseptic than any the "chemist" (pharmacist) can provide. Under general treatment he speaks on the building up of the powers of reaction, but considers climate, open air régime, sanatorium supervision, diet, and drugs only accessories to specific treatment. This latter he divides into natural specific efforts at immunity restoration (spontaneous autoinoculation) and artificial methods of immunity restoration. The author enters into the various artificial methods, such as artificial autoinoculation, heteroinoculation of immune serums as serums, heteroinoculation of vaccines, and the local use of normal serums. The word heteroinoculation is a new one coined by the author to denote inoculation of immune serums, tuberculin, and other vaccines from without. In chapter II he gives a critical review of the present position of heteroinoculation as understood by him.

In Chapter III he speaks of the unreliability of the tuberculoopsonic index. Here the author expresses what has been the experience of many regarding the difficulty of standardization, technique, and agglutination powers. "There appears, indeed, to be a growing conviction that, except possibly in the hands of an extremely small band of experts, the method is not of the general utility with which it has been credited."

The chapter on spontaneous and artificial auto-inoculation is perhaps the most interesting of all. It contains numerous fever charts of pulmonary tuberculosis and other infectious diseases, whereby the author tries to prove that high temperatures are fatal to many microorganisms and that temperature charts are of service in estimating immunity responses and bacterial infections. He takes issue with Sir Almroth Wright, who maintains that the temperature curve is a measure of intoxication, but not of immunization, and that there is no direct and constant relation between such curves and the production of antibacterial bodies. The author considers this statement a confusion of terms, and agrees with Pembrey, who defines fever as not an entity, but a convenient clinical term for a group of phenomena with a more or less definite sequence and origin. The author admits that up to this time we know of no really efficient means of artificial specific treatment of any infectious disease, except diphtheria. Interesting and significant are his conclusions about tuberculosis. He says: "Since only a very small number of tuberculous patients of those that recover, or at least do not die of their infection, receive specific treatment by heteroinoculation with tuberculin, it is clear that some other factor must have been at work to protect them." This other factor, according to Dr. Hort, has been the unrecognized autoinoculation. The last chapter treats of autolysis, autolytic toxæmia, antiautolytic defense, and the antitryptic index.

In the limited space which can be given to the review of such a book it is hard to do justice to the painstaking efforts of the author, who by his work endeavors to show.

"1, that when Nature cures infection she converts tissues and bacteria into autoinoculating agents, and thereby incites both cellular and bacterial restraint; 2, that to provoke the last and ignore the first is too often to aim at half and expect the whole; 3, that, whenever practicable, autoinoculation is the best method to employ when artificial aid is needed; and, 4, that in thermometric charts and in measurements of the blood's inhibitory powers we have most useful gauges of presence or absence of many kinds of stimulus and response." The book is recommended for careful study to all who are interested in the important subject of the treatment of acute and chronic infectious diseases.

Du Microbe de la fièvre chaude récurrente (fièvre récurrente). Recherches microbiologiques et cliniques. P. I. KOUBOSSOFF. Avec 6 tableaux de microphotographies du microbe de la fièvre récurrente à différents degrés de développement. Moscou: I. N. Kouchnéreff & Cie, 1909. Pp. 24.

Koubossoff describes fully various stages in the development of the organism of recurrent fever. According to the author, spore stages, mycelium, vibrio, and spirochætæ form a cycle. The fungi are

called to mind by way of analogy. The technique is given in detail, so that one is made aware of what difficulties stand in the way of a pure culture. Such are, for example, the length of time required for growth and the renewal of the medium. Many modes of study were employed, clinical as well as bacteriological, in man, in animals, in culture, etc. The findings are illustrated with photomicrographs. The work has been carefully planned. In view of the possibility, however, that some of the forms described are contaminations, it will be well to await corroboration of the work from other sources.

The Malarial Fevers, Hæmoglobinuric Fever, and the Blood Protozoa of Man. By CHARLES F. CRAIG, M. D., Captain, Medical Corps of the United States Army. Illustrated by Four Colored Plates, Twenty-five Clinical Charts, and Twenty-eight Photomicrographs and Drawings. New York: William Wood & Co., 1909. Pp. xi-477. (Price, \$4.50.)

Dr. Craig's book on the malarial fevers, hæmoglobinuric fever, and the blood protozoa of man is the first monograph on these subjects by an American writer since the appearance of the well known work on *The Malarial Fevers of Baltimore*, by Thayer and Hewetson, in 1895; and the *Lectures upon the Malarial Fevers*, by Thayer, in 1897. The opportunities that Dr. Craig has had for the study of the malarial fevers in Cuba, the Philippine Islands, and various parts of the United States have been ample, and the author has made judicious use of his opportunities. As the junior member of the Army Board for the Study of Tropical Diseases as they occur in the Philippine Islands, Dr. Craig has had leisure to investigate numerous problems connected with tropical diseases, so that we have expected to find in his book an authoritative and modern statement of the various problems connected with malaria. And we have not been disappointed. The work is admirable and shows the results of a great amount of original work and a thorough familiarity with the literature of the subject.

The first part of the book is concerned with the ætiology of the malarial fevers. The author divides the malarial parasites into four species; *Plasmodium malariae*, *Plasmodium vivax*, *Plasmodium falciparum*, and *Plasmodium falciparum quotidianum*. He says that any one who is able to distinguish the tertian parasite from the quartan organism will be able to tell the quotidian æstivoautumnal from the tertian æstivoautumnal parasite. He cannot admit the existence of a pigmented and a non-pigmented quotidian æstivoautumnal parasite, however.

He calls the forms of the malarial parasite that are destined to perpetuate the disease in the definitive host gametes, and then says that the female cell is known as the macrogamete, that the male cell is known as the microgametocyte, and that the latter produces the microgamete by flagellation. We think it would be better to term both the original forms gametocytes, macrogametocyte and microgametocyte. It is quite likely that the female form undergoes a change analogous to the maturation of the ovum while the male form is engaged in flagellation. The result of such a process would give us a macrogamete; the result of flagellation is a microgamete.

We think that the chapter devoted to mosquitoes

is inadequate. In describing the anatomy of the proboscis the author has omitted to mention the maxillæ. He says that the Malpighian tubules arise from the hind gut of the insect, when they empty there, and that the pumping organ forces saliva into the proboscis and thence into the wound. The function of the pumping organ is to draw blood into the stomach of the insect. The adult insect is called an "imagine"; *imago* is the proper term.

We wish that some other method of generic classification of mosquitoes than that of Theobald, which depends upon the scale characters, could be devised.

An admirable discussion of immunity in malaria is given in this section of the book. The statement is made that malaria is a purely economic problem, which can be controlled by any community which is willing to spend the time and money necessary. All the facts of malaria etiology and transmission unite to prove this assertion.

The second part of the book is devoted to a description of the general and special pathology of the malarial fevers. One or two statements are made in this section which are worth calling attention to. The first of these is that great phagocytosis, as seen in the peripheral blood, is indicative of a severe infection and points to a grave prognosis. The second is that the rise of temperature in all malarial fevers is due to a toxic substance or substances produced by the plasmodia during their development and liberated at the time of sporulation of the parasites.

The third part is devoted to the symptomatology and clinical varieties of the malarial fevers. Dr. Craig believes that a classification of these fevers based upon the characters of the temperature curve is very misleading, and that the only classification admissible is one based upon the etiology. It is, then, essential that he who would accurately diagnose malarial fevers should be able to recognize the variety of parasite in the peripheral blood. With this position we are in complete accord.

The term "tropical malaria" should be abandoned; we agree to this statement. We would call attention to the remarks upon malaria in children, on pages 192 and 193. In the chapter on latent malarial infection the author describes conjugation of malarial parasites within the red corpuscles, which, he maintains, produces a form different from the gametocytes, which serves to produce recurrences under favorable conditions. This explanation of the latent phase of the parasites is supported by a carefully prepared statement of similar processes in other protozoa, and it may prove to be true. All that we can say about it at present is that the observations lack confirmation.

Part four deals with the sequelæ, complications, and prognosis of the malarial fevers. There is a good chapter on coincident typhoid fever and malaria. Part five deals with the diagnosis, prophylaxis, and treatment of the disease. Here the author makes the statement that the successful treatment of malaria with quinine depends wholly upon the proper administration of the drug. To this position we agree. Although the author does not say so in so many words, he implies that no quinine should be given unless the plasmodia have been

found in the blood. He prefers the administration of divided doses at regular intervals. The use of over forty grains of quinine in twenty-four hours, he says, is never necessary. He, of course, advocates the intramuscular and intravenous method of administration in suitable cases.

Part six is devoted to a discussion of hæmoglobinuric fever, which Dr. Craig believes has no etiological relation with malaria, but is a disease *sui generis*. Part seven treats of other blood inhabiting protozoan parasites in man, and includes a short description of *Histoplasma capsulatum* described recently by Darling from the Canal Zone. The mechanical portion of the book is excellent, except that there is an unusually large number of typographical errors. The illustrations are admirable.

The Etiology and Nature of Cancerous and Other Growths. By W. T. GIBSON, A. R. C. S. London: John Bale, Sons, & Danielsson, Ltd., 1909. Pp. xv-123. (Price, 6s.)

In this volume the author draws attention to a number of chemical irritants and poisons and seeks to establish their causative relation to cancer. Among the suspected chemical agents are fatty amines, pyridine, quinoline and acridine bases, aniline, nitrobenzol, pyrrol, nicotine, ptomaines, and indol. He presents figures showing that persons much exposed to these agents manifest a greater susceptibility to cancer than those not so exposed. The arguments advanced are not convincing, but in view of the present state of the cancer question, every bit of empirical evidence needs to be considered. It would seem easy to subject Gibson's views to experimental study.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMANN, M. D., Detroit, Michigan, U. S. A., Fellow of the American Proctological Society, etc. With One Hundred and Forty-seven Illustrations, Mostly Original, Including Two Colored Plates. St. Louis: C. V. Mosby Medical Book & Publishing Co., 1909. Pp. 374. (Price, \$4.)

The author herewith makes another addition to the rapidly accumulating literature of rectal disease. It would have been thought impossible a few years ago so to amplify the knowledge relating to this anatomical field. The author declares that he does not attempt to cover the entire domain of proctology, but only to give a guide, presumably to the younger practitioners, to the medical and surgical treatment of those conditions which are suitable for office treatment. The field therefore includes principally the varieties of fissure, fistula, hemorrhoids, and inflammatory conditions of the lower bowel. The office treatment of these conditions, with and without local anæsthesia, is intelligently and lucidly outlined and most of the illustrations are good. We doubt whether the majority of practitioners would ever attempt to subject the most of their patients with these troubles to office treatment. There are plenty of instances in which such treatment has been far from satisfactory.

A warning is very properly sounded against the too extensive use of local anæsthesia, and a series of conditions is narrated in which it may be used with advantage. The repetition of many of the statements covering this ground seems unnecessary. We are entirely in accord with the note of caution that local anæsthesia is not infrequently more dan-

gerous than general anæsthesia. It is often unsuccessful in that it does not anæsthetize. To be assured that an operation will be painless and then to suffer pain does not bring credit to the physician and is most disappointing to the patient. With the harmlessness of general anæsthesia, properly induced, in the great majority of cases, we do not concur in the tendency to extend the field of local anæsthesia.

This volume has also interesting chapters on dysentery and the scientific study of feces. They are very desirable additions, and, while the last mentioned chapter will be of practical use to but few, it is certainly most important to have such information in a form which is available should the knowledge be required. The publishers desire to note that in the frontispiece, Plate I, hæmorrhoidal is incorrectly spelled and that credit for the plate should be given to Sir Charles Ball's *The Rectum, its Diseases and Developmental Defects*; also that the explanation for Plate II, page 258, was unintentionally omitted.

Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By ANDREW BALFOUR, M. D., B. Sc., F. R. C. P., Edin., D. P. H., Camb., Director, Fellow of the Royal Institute of Public Health, etc. Published for the Department of Education, Sudan Government, Khartoum. London: Baillière, Tindall, & Cox, 1908. (Through Toga Publishing Company, New York). Pp. 477.

We welcome the third report of the Wellcome Research Laboratories. After an interval of three years this publication, which presents the results of much original work in the line of the diseases of the tropics, anthropology, industrial and agricultural chemistry, and entomology, has again appeared. Some time after the publication of the second report, in 1906, Gordon College suffered from a fire which destroyed the valuable laboratories and the equally valuable collections and apparatus which had been accumulated by Dr. Balfour and his assistants. It speaks well for the energy and efficiency of the active workers in Khartoum that such a catastrophe has been outlived in so short a period of time. The report opens with a paper on Trypanosomiasis in the Anglo-Egyptian Sudan, by Dr. Balfour, who also contributes papers on a hæmoglobine of the Jerboa, on a hæmoglobine of *Rhamphophis rubropunctatus*, on piropalmsosis in the Anglo-Egyptian Sudan, on spirochaetosis of Sudanese fowls, and on routine work, a set of miscellaneous notes, and sanitary notes on Khartoum. Papers on sleeping sickness are contributed by Captain Howard Ensor and R. G. Archibald. Papers on kala azar are from S. Lyle Cummins and L. Bousfield. Dr. C. M. Wenyon contributes the report of the traveling protozoologist. Dr. Harold King contributes a report on economic entomology. There is a paper on some interesting reptiles collected by Dr. C. M. Wenyon on the Upper Nile, by Doctor Franz Werner, and one on the poisonous snakes of the Anglo-Egyptian Sudan; a paper by Robert T. Leiper on some helminths collected by Dr. Wenyon; one by Fred V. Theobald on new mosquitoes from the Sudan; one by Hassan Effendi Zeki on the healing art as practised by the dervishes; one by L. Bousfield on the native methods of treatment of diseases in Kassala and its neighborhood; one by R. G. Anderson on

medical practices and superstitions among the people of Kordofan; and one by D. Waterson on the physical characters of Nilotic Negroid tribes. D. J. Vallance contributes some notes on ethnographical specimens collected by Dr. A. MacTier Pirrie. William Beam contributes the report of the chemical section, and E. S. Edie gives notes on the chemistry of Sudan gum.

The death of Dr. A. MacTier Pirrie, the anthropologist attached to the laboratory, from kala azar, contracted during a journey to the Burun country, between the White Nile and Abyssinia, was a sad result of scientific enthusiasm. The itinerary of the floating laboratory is excellently pictured on a map. The book is admirably printed on good paper, and the illustrations are abundant and good, those in color being especially well reproduced. There are several excellent maps.

MEDICOLITERARY NOTES.

After considerable painful research we are glad to announce our discovery of the cause of the late epidemic that swept away the high hat, so that not even the most dignified of physicians is to be seen with this glorious headgear of the past. It is because its silken majesty is positive evidence that the wearer does not own a motor car. The few cases of sporadic recrudescence we have recently noted will probably be stamped out when the sufferers have quite realized the significance of the symptom.

Anne of Denmark, queen of James I of England, suffered at one time from a severe illness "whereof the physicians were at the farthest end of their studies to find the cause, and at a nonplus for the cure." She finally sent to Sir Walter Raleigh, whose accomplishments as a pharmacist had helped to earn him the title of *free thinker*, for his celebrated cordial, thereafter long considered a panacea. We know how popular a remedy becomes that has "cured" anybody distinguished socially. Sir Walter's formula is said to have been the following:

Zedoary and saffron, of each,.....	¾ lb.
Distilled water,	3 pints
Macerate, etc., and reduce to 1½ pint.	
Compound powder and crabs' claws.....	16 oz.
Cinnamon and nutmegs,	2 oz.
Cloves,	1 oz.
Cardamom seeds,	½ oz.
Double refined sugar,	2 lbs.

Make a confection.

Students of our noble profession in the United States along in the early '30's, seem to have had little Latin and less medicine. In a quiz book of the period we find the following question: In what part of the skeleton is the *os uteri*? An elaborate explanatory answer is appended.

Even our more or less accurate terminology is subject to evolution. Embrocation is defined in Foster's *Medical Dictionary* as "any liquid medicament applied by rubbing, especially a liniment"; whereas a century and a half ago its signification was limited to a fomentation wherein the fomenting liquor was allowed to distil from aloft drop by drop very slowly upon the affected part (Mid. Latin, *embrocatus*, poured into a vessel).

Ray Stannard Baker in the October *American* states that most of the synagogues of New York are "ilily" attended; the same is true of the Christian churches, few of which are wellly attended.

Our little joke, a few weeks since, regarding our intention to indicate the titles of some five miles of medical books that might be useful to the laity in gently exposing their comparative ignorance of medicine, raised the bile of one celebrated editor, who asked if we had never heard that a man at forty was either a fool or a physician. Tiberius, who said that first, we believe, meant his *own* physician and never intended that every ass over two score who read his opinion should run about braying forth his primitive ideas about medicine, especially in the presence of physicians. The latter, while constantly trying to learn something new, have generally rejected as antiquated anything that has ultimately trickled down to the popular knowledge. It is safe to say that there is not a patent medicine or popular remedy that embodies a new therapeutical idea, while many such as soap and brown sugar or home-made salves as applications to wounds, and opium laden cough sedatives, are extremely dangerous. Other home survivals of antique practice, such as an old stocking tied about the neck to "cure" hoarseness, are no worse than inert. In medicine it is strikingly true that a little learning is a dangerous thing; better to fall into the Pierian spring and be drowned.

Among the earliest Greeks the profession of medicine was hereditary and the matriculation of an outsider, without professional ancestors, was a serious matter attended with a solemn initiation. The idea was not based at all on any labor union principle, but the profession was considered sacred and its principles were thought to have been revealed by the gods; only those, therefore, of clean life and with a proper sense of the dignity of the calling could be admitted. Medical knowledge was mainly empiric. Unless the physicians had means, not unlike those known to our predecessors not so many years ago, of securing human cadavers, it is hard to understand how they obtained their knowledge of osteology and syndesmology; for the laws against the mutilation of dead bodies were most severe. As long as the body was unburied the soul could not enter elysium, but wandered sadly on the banks of the styx. Officers, even victorious, were condemned to death for not having collected for burial the bodies of the soldiers slain under their command.

Another story told of Dr. George Fordyce, of whose dining idiosyncrasies we have written, is that he was called immediately after one of his highly stimulating banquets to attend a lady patient. Owing to his condition he had great difficulty in counting her pulse and finally muttered to himself, "Drunk, by Jove!" Next day he was waited upon by one of the lady's servants, whose message he anticipated with considerable trepidation. It was, however, to the effect that he had correctly diagnosed the lady's condition and contained an urgent request that he should preserve her secret inviolate. Dr. George thought it well to make a second call to assure his anxious patient that he would be reticent as the grave. This yarn has also been told of Abernethy; and, doubtless, in the days to come it will be related of some capacious contemporary of ours.

It is sometimes reproached to us American physicians that we are lacking in general culture. No such accusation can be sustained against the English leeches of the time of Elizabeth, among whom, according to Francis Bacon, were to be found antiquaries, poets, humanists, statesmen, merchants, divines. In fact, the Elizabethan doctors had a smattering of everything except medicine.

General culture, however, is probably a possession of more physicians than is generally known. What is a physician to do with his extra talents? He had better not let his patients hear his cultivated tenor voice or let them see his clever paintings, or astonish them with either quotation or original epigram. He is supposed to put in his spare time worrying about the remarkable and unique complications in the cases of the tiresome invalids who begrudge him leisure. Let him follow the advice to a young politician of Tom Corwin, of Ohio, as to success in his field: Be a solemn ass.

NEW PUBLICATIONS.

Hare, Hobart Amory.—A Textbook of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. Thirteenth Edition, Enlarged, Thoroughly Revised, and Largely Rewritten. Illustrated with 122 Engravings and 4 Colored Plates. Philadelphia and New York: Lea & Febiger, 1909. Pp. ix-958.

Kimber, Diana Clifford.—Textbook of Anatomy and Physiology for Nurses. Third Edition. Revised by Carolyn E. Gray, R. N. New York: Macmillan Company, 1909. Pp. xiii-438.

Bergey, D. H.—The Principles of Hygiene. A Practical Manual for Students, Physicians, and Health Officers. Illustrated. Third Edition, Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 555. (Price, \$3.)

Bandler, Samuel Wyllis.—Medical Gynecology. Second Revised Edition. With Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 698. Price, \$5.)

Hirst, Barton Cooke.—A Textbook of Obstetrics. Sixth Edition, Revised and Enlarged. With 847 Illustrations, 43 of them in Colors. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 992. (Price, \$5.)

Nolda, A.—Ueber die Indikationen der Hochgebirgskuren für Nervenkrankte. Nach einem auf dem XV. internationalen Kongress in Lissabon, April, 1906, gehaltenen Vortrage. Zweite Auflage. Halle a. S.: Carl Marhold, 1909. Pp. 26.

Steinmetz, Charles Proteus.—Radiation, Light, and Illumination. A Series of Engineering Lectures Delivered at Union College. Compiled and Edited by Joseph Le Roy Hayden. New York: McGraw-Hill Book Company, 1909. Pp. xii-305.

Hyde, James Newton.—A Practical Treatise on Diseases of the Skin. For the Use of Students and Practitioners. Eighth and Revised Edition. Illustrated with 223 Engravings and 58 Plates in Colors and Monochrome. Philadelphia and New York: Lea & Febiger, 1909. Pp. xxvi-1226.

Freud, Sigmund.—Selected Papers on Hysteria and Other Neuroses. Authorized Translation by A. A. Brill, Ph. D. M. D., Chief of Nervous Dispensary, Beth Israel Hospital, etc. New York: The Journal of Nervous and Mental Disease Publishing Company, 1909. Pp. 200.

White, William A.—Outlines of Psychiatry. Second Edition, Revised and Enlarged. New York: The Journal of Nervous and Mental Disease Publishing Company, 1909. Pp. 232.

Ueber, F.—Lehrbuch der Ernährung und der Stoffwechselerkrankungen für Aerzte und Studierende. Mit 19 Abbildungen im Text, 5 Lichtdrucktafeln und 3 mehrfarbigen Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. viii-402.

Kocher, Theodor, and Tavel, E.—Vorlesungen über chirurgische Infektionskrankheiten. Erster Teil. Die Streptokokken. Mit 50 Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. vi-251.

Haymann, Hermann.—Kinderaussagen. Halle a. S.: Carl Marhold, 1909. Pp. 43.

Luke, Thomas D.—A Manual of Natural Therapy. With Thirty Plates and One Hundred and Twenty-five Illustrations, Many of Which are Original. New York: William Wood & Co., 1908. Pp. xiv-303. (Price, \$2.50.)

Schirokauer, Hans.—Theorie und Praxis der Eisentherapie nach dem gegenwärtigen Stande der Wissenschaft. Halle a. S.: Carl Marhold, 1909. Pp. 38.

Zimmern, A.—La Fulguración, sa valeur thérapeutique. Avec figures dans le texte. Paris: J. B. Baillière et fils, 1909. Pp. 95.

Lange, Victor.—Klinische Mitteilungen aus dem Gebiete der Ohren- und Nasenkrankheiten. Für Studierende und Aerzte. Berlin: S. Karger, 1910. Pp. 126.

Saenger, M.—Ueber Asthma und seine Behandlung. Berlin: S. Karger, 1910. Pp. 82.

Clarke, Henry.—Studies in Tuberculosis. Liverpool: University Press; London: Archibald Constable & Co., 1909. Pp. 53.

Winslow, Kenelm.—The Production and Handling of Clean Milk. Including Practical Milk Inspection and Essentials of Milk Bacteriology, by H. W. Hill, M. D., Minnesota State Board of Health Laboratories, etc. New York: William R. Jenkins Company, 1909. Pp. 367.

Knight, Charles Huntton, and Bryant, W. Sohler.—Diseases of the Nose, Throat, and Ear. Second Edition, Revised, with 239 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xix-631. (Price, \$4.50.)

Hale, Worth.—The Influence of Certain Drugs upon the Toxicity of Acetanilide and Antipyrine. Hygienic Laboratory Bulletin No. 53. Washington: Government Printing Office, 1909. Pp. 60.

Elvoe, Elias.—The Fixing Power of Alkaloids on Volatile Acids and Its Application to the Estimation of Alkaloids with the Aid of Phenolphthalein or by the Volhard Method. Hygienic Laboratory Bulletin No. 54. Washington: Government Printing Office, 1909. Pp. 25.

Kastle, J. H.—Chemical Tests for Blood. Hygienic Laboratory Bulletin No. 51. Washington: Government Printing Office, 1909. Pp. 62.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service during the week ending October 15, 1909:

Places.	Date.	Cases.	Deaths.
Smallpox—United States			
District of Columbia—Washington.	Sept. 25-Oct. 2.	2	
Massachusetts—Boston.	Sept. 25-Oct. 2.	1	
Minnesota—Duluth.	Sept. 17-21.	1	
Missouri—St. Louis.	Sept. 25-Oct. 2.	1	
Montana—Butte.	Sept. 23-26.	3	
New Jersey—Newark.	Sept. 18-23.	1	
North Carolina—Charlotte.	Sept. 24-Oct. 1.	2	
Ohio—Dayton.	Sept. 25-Oct. 2.	2	
Wisconsin—Milwaukee.	Sept. 25-Oct. 2.	1	
Smallpox—Foreign.			
Brazil—Rio de Janeiro.	Aug. 29-Sept. 12.	6	2
China—Shanghai.	Sept. 17.	6	
Egypt—General.	Aug. 12-19.	109	16
Egypt—Cairo.	Sept. 20.	1	2
France—Bordeaux.	Aug. 27-Sept. 4.	1	
France—Paris.	Sept. 11-18.	1	
Germany—Königsberg.	Aug. 22-28.	1	1
India—Bombay.	Sept. 17.	1	
India—Madras.	Sept. 12-19.	2	
Indo-China—Saigon.	July 31-Aug. 7.	1	1
Italy—General.	Sept. 12-19.	9	
Italy—Naples.	Sept. 12-19.	10	2
Mexico—Monterrey.	Sept. 19-26.	1	
Russia—Moscow.	Sept. 4-11.	3	
Russia—Odessa.	Sept. 4-18.	17	3
Russia—Riga.	Sept. 11-18.	6	
Russia—St. Petersburg.	Sept. 4-11.	8	0
Russia—Warsaw.	Sept. 7-14.	1	
Spain—Barcelona.	Sept. 13-27.	5	
Spain—Valencia.	Sept. 11-18.	1	
Spain—Vigo.	Sept. 11-18.	1	2
Uruguay—Montevideo.	July 1-31.	6	

Places.	Date.	Cases.	Deaths.
Yellow Fever—Foreign.			
Ecuador—Guayaquil.	Aug. 27-Sept. 11.	1	4
Mexico—Merida.	Sept. 28-Oct. 1.	1	1
Mexico—Tekik.	Oct. 1.	1	
Cholera—Foreign.			
China—Chefoo.	Sept. 15.	1	Present
Germany—Russ.	Sept. 19.	1	1
Germany—Stolzenhagen.	Sept. 18.	1	
India—Bombay.	Sept. 17.	1	27
India—Rangoon.	Aug. 21-28.	1	4
Japan—Nagasaki.	Sept. 15.	7	1
Korea—Chemulpo.	Sept. 15.	1	Present
Netherlands—Haarlem.	Sept. 17.	1	
Netherlands—Hoogvliet.	Sept. 17.	1	
Netherlands—Pennis.	Sept. 17.	1	
Russia—Moscow.	Sept. 4-11.	3	1
Straits Settlements—Singapore.	Aug. 21-28.	1	
Sumatra—Djambi.	July 1-31.	205	108
Plague—Foreign.			
Hawaii—Hilo.	Sept. 4-11.	1	
Ecuador—Guayaquil.	Aug. 27-Sept. 11.	1	12
India—Bombay.	Sept. 17.	1	27
India—Rangoon.	Aug. 21-28.	1	19
Indo-China—Saigon.	July 31-Aug. 21.	18	18
Japan—Kobe.	Sept. 15.	1	Epidemic
Japan—Nagasaki.	Sept. 15.	1	Present
Japan—Shimonoseki.	Sept. 15.	1	Present
Mauritius—General.	July 15-Aug. 5.	5	9
Morocco—Casablanca.	July 15-Sept. 17.	1	
Siam—Bangkok.	Aug. 21-28.	9	9

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 13, 1909:

ANDERSON, JOHN F., Passed Assistant Surgeon. Detailed to represent the Service at the annual meeting of the American Public Health Association to be held in Richmond, Va., October 19 to 21, 1909.

ASHFORD, F. A., Passed Assistant Surgeon. Upon arrival of Passed Assistant Surgeon Ernest A. Sweet, relieved from duty at Stapleton, N. Y., and directed to proceed to Ellis Island, N. Y., and report to the chief Medical Officer for duty.

BOGGS, J. S., Passed Assistant Surgeon. Granted three months' leave of absence from October 15, 1909.

DE VALIN, HUGH, Passed Assistant Surgeon. Upon being relieved by Assistant Surgeon Charles M. Fauntleroy, directed to proceed to Fort Morgan, Ala., and assume command of the Service.

DE VALIN, HUGH, Passed Assistant Surgeon. Upon being relieved by Assistant Surgeon Charles M. Fauntleroy, directed to proceed to the Mobile Quarantine Station and assume command of the Service.

EAGER, J. M., Surgeon. Granted one day's leave of absence, October 17, 1909.

FAUNTLEROY, CHARLES M., Assistant Surgeon. Upon arrival of Assistant Surgeon R. H. Lyon, directed to proceed to Savannah Quarantine Station, Ga., and assume command of the Service.

FRANCIS, EDWARD, Passed Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon Hugh de Valin, directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

GUSTETTER, A. L., Acting Assistant Surgeon. Granted five days' leave of absence from October 13, 1909.

HALLETT, E. B., Acting Assistant Surgeon. Granted seven days' leave of absence from October 12, 1909.

HUME, LEA, Acting Assistant Surgeon. Granted ten days' leave of absence from October 10, 1909.

KRULISH, EMIL, Assistant Surgeon. Granted ten days' leave of absence from October 15, 1909.

LAVINDER, C. H., Passed Assistant Surgeon. Bureau order of September 22, 1909, amended to read upon completion of duty enjoined, directed to proceed to Jackson, La., upon special temporary duty.

LOWTHIAN, E. L., Acting Assistant Surgeon. Granted twenty-seven days' leave of absence from October 4, 1909.

LYON, R. H., Assistant Surgeon. Relieved from duty at Reedy Island Quarantine Station, and directed to proceed to New Orleans Quarantine Station, and report to the medical officer in command for duty and assignment to quarters.

MOORE, DUNLOP, Passed Assistant Surgeon. Directed to report to the medical officer in command at San Francisco, Cal., for temporary duty and assignment to quarters.

OAKLEY, J. H., Surgeon. Granted one day's leave of absence, October 12, 1909.

RYDER, L. W., Pharmacist. Granted two days' leave of absence from October 8, 1909, under paragraph 210, Service Regulations.

SWEET, ERNEST A., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

TRASK, J. W., Assistant Surgeon General. Detailed to represent the Service at the annual meeting of the American Public Health Association to be held in Richmond, Va., October 19 to 21, 1909.

WHITE, J. H., Surgeon. Directed to proceed to Galveston, Texas., upon special temporary duty.

Boards Convened.

Board of medical officers convened to meet at Seattle, Wash., October 6, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon F. R. Underwood, recorder.

Board of medical officers convened to meet at Seattle, Wash., October 7, 1909, for the purpose of examining an alien: Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon F. R. Underwood, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 16, 1909:

BYRNE, CHARLES B., Colonel, Medical Corps. Granted leave of absence for two months, twenty days.

HAINES, EDGAR F., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will proceed to Fort Moultrie, S. C., for duty.

HAYARD, VALERY, Colonel, Medical Corps. Granted leave of absence for three months, twenty-three days.

HULL, ALVA R., First Lieutenant, Medical Reserve Corps. Granted extension of fifteen days to leave of absence.

LEEPER, JOHN F., First Lieutenant, Medical Reserve Corps. Relieved from duty at the Army General Hospital, Fort Bayard, New Mexico, and ordered to Fort Duchesne, Utah, for duty.

VAN KIRK, HARRY H., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Duchesne, Utah, and ordered to Fort Levee, Maine, for duty.

WOODBURY, FRANK T., Captain, Medical Corps. Granted leave of absence for two months.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 16, 1909:

CASTO, D. H., Assistant Surgeon. Detached from the *Concord* and ordered to duty in connection with the fitting out of the *Princeton* and to duty on board that vessel when commissioned.

DICKINSON, D., Medical Director. Detached from duty as a member of the Naval Retiring Board, Naval Examining, and Naval Medical Examining Boards, Washington, D. C., and ordered home to await orders.

DUBOSE, W. R., Medical Inspector. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered home to await orders, ordered to command the Naval Hospital, Norfolk, Va.

FITZSIMONS, P., Medical Director. Detached from command of the Naval Medical Supply Depot, New York, N. Y., and ordered to Washington, D. C., for duty as a member of the Naval Retiring Board.

GARDNER, J. E., Medical Inspector. Detached from the Naval Recruiting Station, Boston, Mass., and ordered to continue other duties.

HOLEMAN, C. J., Assistant Surgeon. Detached from the *Arctusa* and ordered to duty in connection with the *Iris* and to duty on board that vessel when commissioned.

LOVERING, P. A., Medical Inspector. Detached from the Naval Hospital, Norfolk, Va., and ordered to command the Naval Medical Supply Depot, New York, N. Y.

STRITE, C. E., Assistant Surgeon. Unexpired portion of leave revoked; detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the *Franklin*.
WILSON, H. D., Surgeon. Unexpired portion of leave revoked; ordered to the Naval Recruiting Station, Boston, Mass.

Births, Marriages, and Deaths.

Born.

LEYS.—In Cristobal, Canal Zone, Panama, on Sunday, October 3d, to Surgeon J. F. Leys, United States Navy, and Mrs. Leys, a daughter.

NEILSON.—In Vallejo, California, on Saturday, October 2d, to Passed Assistant Surgeon John L. Neilson, United States Navy, and Mrs. Neilson, a daughter.

Married.

BILLINGS—LE MOYNE.—In Baltimore, Maryland, on Wednesday, October 6th, Dr. Frederick Tremaine Billings and Miss Romaine Le Moyne, daughter of Dr. Frank Le Moyne, of Pittsburgh.

BROWN—WALLACE.—In Omaha, Nebraska, on Saturday, October 16th, Dr. Alexander Clifford Brown and Miss Helen Clifford.

CUNNINGHAM—SMITH.—In Defiance, Ohio, on Wednesday, October 6th, Dr. Napoleon Cunningham and Miss Fern Smith.

CUTTER—GRIFFIN.—In Haverhill, Massachusetts, on Thursday, October 7th, Dr. Arthur H. Cutter, of Lawrence, and Miss Grace L. Griffin.

DAY—THOMAS.—In New York, on Thursday, October 7th, Dr. Rupert S. Day and Miss Mabel Grace Thomas.

FORT—CLARK.—In Framingham, Massachusetts, on Tuesday, October 12th, Dr. Rufus Elijah Fort, of Nashville, Tennessee, and Miss Louise Clark.

MARSHALL—BRADLEY.—In Philadelphia, on Saturday, October 9th, Dr. William R. Marshall, of Butler, Pennsylvania, and Miss Alma G. Bradley.

PENROSE—EASTBURN.—In Philadelphia, on Saturday, October 9th, Dr. Thomas Penrose and Miss Esther M. Eastburn.

Died.

ALFORD.—In Mullinville, Kansas, on Monday, October 11th, Dr. John W. Alford, aged sixty-seven years.

CHENOWETH.—In Windsor, Indiana, on Friday, October 8th, Dr. Nelson T. Chenoweth, aged seventy-two years.

CHRISTIAN.—In Effingham, Illinois, on Friday, October 8th, Dr. M. H. Christian.

DEVENDORF.—In Hunter, New York, on Thursday, October 14th, Dr. Henry A. Devendorf, aged eighty-three years.

GOLDSTEIN.—In New York, on Wednesday, October 13th, Dr. Jacob Goldstein.

GORDON.—In Chicago, on Tuesday, October 12th, Dr. W. A. Gordon, of Oshkosh, Wisconsin, aged sixty-three years.

HALLOWELL.—In Haddonfield, New Jersey, on Tuesday, October 12th, Dr. Rebecca C. Hallowell, widow of Dr. John Hallowell, aged seventy-seven years.

HASSLER.—In Allentown, Pennsylvania, on Wednesday, October 6th, Dr. William A. Hassler, aged sixty-eight years.

JENKINS.—In Towson, Maryland, on Saturday, October 9th, Dr. Felix Jenkins, of Baltimore, aged eighty-four years.

KAUFFMANN.—In Plaisance, Louisiana, on Friday, October 8th, Dr. Oswald Edward J. Kauffmann, aged twenty-six years.

MILLER.—In Champaign, Illinois, on Wednesday, October 6th, Dr. W. H. Miller, aged seventy years.

MOSHER.—In Columbus, Ohio, on Monday, October 11th, Dr. Edward B. Mosher, aged seventy-two years.

PALMER.—In Erie, Pennsylvania, on Wednesday, October 6th, Dr. Henry C. Palmer, aged sixty-eight years.

PIERSON.—In Osborn, Ohio, on Thursday, October 7th, Dr. A. M. Pierson, aged sixty years.

PIERCE.—In Boston, on Friday, October 8th, Dr. Charles W. Pierce, aged thirty-seven years.

REYNOLDS.—In Boston, on Sunday, October 10th, Dr. John Phillips Reynolds, aged eighty-three years.

TAYLOR.—In Carmi, Illinois, on Monday, October 11th, Dr. R. C. Taylor, aged seventy-seven years.

TULLEY.—In Mooresville, Indiana, on Friday, October 8th, Dr. F. A. Tulley, aged sixty-three years.

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Original Communications.

GASTRIC ULCER IN THE YOUNG.*

By A. JACOBI, M. D., LL. D.,
New York.

The anatomy of gastric ulcer and the principles of its treatment are in the main essentially the same in all periods of life. That is why a discussion of gastric ulcer in infancy and childhood may be brief. One of the best, and at the same time short, papers on that topic is that of Dr. William Leland Stowell, of New York. It was read before the Section in Pædiatrics of the New York Academy of Medicine, May 11, 1905, and appeared in the *Medical Record* of July 8, 1905. Its most valuable parts are those on history and on symptomatology.

Stowell has gathered from the literature of the subject thirty-four cases of ulcer of the stomach, and added one of his own. Three of the thirty-four cases were those of patients above sixteen years, but these, being chronic cases, must be and have been, referred by him correctly to previous years. Perhaps he would have facilitated the use of his quotations by also citing the exact references. That is why in the additional cases I have found in literature I have noted the source from which they were taken.

Soheuer: Perforating Gastric Ulcer in a Girl of Twelve Years. (*Allgemeine Wiener medizinische Zeitung*, xiv, p. 336, 1869.)

Sidey: Case of Erosion of the Inner Coat of the Stomach in a Boy of Fourteen Years. (*Edinburgh Medical Journal*, xlv, p. 258, 1835.)

Schultz: Round Gastric Hereditary Ulcer. (*Verhandlungen des Vereins pfälzischer Aerzte*, Speyer, p. 23, 1856.)

Carteaux: Observation of Gastric Ulcer in a Fœtus at Full Term. (*Comptes rendus de biologie*, iv, Paris, 1858.)

Sieveking: Two Cases of Ulcer of the Stomach in Boys. (*Lancet*, ii, p. 370.)

G. U. Cocks: Fatal Hemorrhage from an Ulcer of the Stomach in the Newborn Infant. (*Brooklyn Medical Journal*, v, 557, 1891.)

Steinmann, J. K.: Some Cases of Gastric Ulcer at an Early Age. (*Dissertation*, Kiel, 1890.)

F. Greiss: Gastric Ulcer in the Young. (*Dissertation*, Kiel, 1879.)

Chvostek: Chronic Round Gastric Ulcer in Three Boys. (*Archiv für Kinderkrankheiten*, iii, p. 267, 1881-82.)

Donné: A Case of Gastric Ulcer in a Child of Three Years. *Allg. M. A.*, June, 1907.

Immerwohl: Gastric Ulcer in a Patient of Four Years. Died of Nephritic Uræmia. (*Archiv für Kinderkrankheiten*, xliii, p. 321, 1906.)

Chiari: On Gastric Syphilis in *Virchow's Festschrift*, 1891, ii, p. 209, quoted by Arthur Curtis, of Chicago, in *Journal of the American Medical Association*, 1909, No. 19. In seven years Chiari had 243 cases of syphilis, of which two were gastric. A child of three weeks had multiple syphilis. Its stomach had some flat, gummatous elevations, most of them with superficial ulcerations, the new tissue of the submucosa consisting of round, oval, and spindle shaped cells.

Rilliet and Barthez's *Handbook*, of 1855 refers to seven cases of gastric ulcer; Biedert in the twelfth edition of his *Textbook* of 1902, to a girl of twelve years with hæmatemesis, with unilateral convulsions, and probable sinus thrombosis.

Arnim Huber has eleven cases of his own and refers to nineteen others. (*Münchener medizinische Wochenschrift*, 1907, No. 5.)

CAUSES:

1. Prenatal disposition. Defects in the wall of the stomach are occasionally, though rarely, met with. They are of a nature similar to those in the wall of the intestine, or in that of the large bloodvessels where, according to Eppinger, aneurysms take their origin. That is why gastric ulcers are observed among the children of consumptives who do not transmit their tuberculosis but their textural debility, mainly their small hearts and vascular incompetency.

2. Thrombosis of the umbilical vein and of its small ramifications, and local embolisms in the wall of the stomach, some of which depend on congenital diseases of the heart. The first days of life are threatened to a high degree. Thrombosis and emboli are frequent causes of fatal melæna, of which those of us who are inflicted with advanced antelisterian years or with an obstetrical practice among the neglected and congested part of the population have seen and do see more than those whose occupation is always among the clean and well to do and comfortably housed people, and in salubrious hospitals. The worst cases of melæna are those of sepsis. Puerperal sepsis has not yet been exterminated among the ill favored women, by either Semmel-

*Read at a meeting of the New York Academy of Medicine, October 7, 1909.

weiss or Lister. Indeed, it is more frequent with us to-day than many believe who take the number of deaths among the puerperal women and the newborn alleged to have been caused by nephritis, pneumonia, peritonitis, or carditis, to be different from puerperal sepsis. In the puerperal sepsis of the newly born extensive punctiform hæmorrhages over all sorts of mucous membranes are numerous. When melæna does not directly destroy life, I have seen it to give rise to extensive erosions and ulcerations weeks after, with subsequent death. During the sixth and seventh decades of the last century, after 1853, when I was engaged in a large obstetrical practice, mostly in the tenement houses and slums, among which the "Five Points" formed a prominent part, I made many autopsies on the babies, who mostly died during the first few weeks or days. Case after case exhibited hæmorrhages or petechiæ on the mucous membrane of the stomach, also of the intestine, in the tissue of the kidneys, on and in the spleen, on the pleura, pericardium, and peritoneum, in the lung tissue, even in the heart muscle and the mesentery. A few of my old histories emphasize the latter two. This condition I found so often that before I learned more about the influence of sepsis I was tempted to believe that this universal finding was almost normal in the newborn and depended on the normal feeble structure of the bloodvessels. I even taught so when, in 1860, I began my career as a teacher. I speak of this one of the causes of ulcer of the stomach and the cause of numberless deaths among the newborn of all nations, to make those of you who do not rely on last year's reports only, aware of the wealth of ætiological, beside other, knowledge which may be gathered from the older literature. Indeed there were great doctors and close observers before us. The sad advantage of having seen many cases of septic gastric ulcer in the very young I owe to the fact that I was, as I have remained, a general practitioner with, at those early twenty years, an extensive obstetrical practice mostly among the poor and what is styled the lower middle class.

3. To the *Festschrift* dedicated to me as a punishment for the completion of my seventieth year, nearly ten years ago, Kinnicutt contributed an article in which he spoke of the causation of gastric and duodenal ulcer by burns and by septichæmia, particularly when complicated with nephritis, the frequency of which is mostly found at the two terminals of life, viz.: old age and after birth.

4. It is very probable that such of the cases of stenosis of the pylorus in the newborn and very young as depend on spasm caused by superacidity may produce ulceration. Defects of the epithelium, it is true, must occur very frequently in the healthy stomach, but under otherwise normal circumstances the mucous membrane is able to cover a slight wound at once and to exclude the gastric acid when in normal quantity. But superacidity when present prevents a rapid healing in the living,—that is why it requires frequent neutralization,—while in the dead it is known since Elsasser (1848) to cause softening and perforation of the stomach.

5. Local injuries cause ulcers,—such as are produced by swallowed bones or other foreign bodies. One of my patients died of a safety pin, another of

a shoe button. Corrosive sublimate, potassium chlorate, arsenic, barium salts,—the latter even when administered under the skin,—and caustics of all kinds, are known to have the same effect,—so have the salts of antimony and croton oil.

6. Infectious fevers have been charged with causing gastric ulcers since Letulle (1888, *Bulletins et mémoires de la Société médicale des hôpitaux*). Tuberculous ulcerations are found near the pylorus usually, but a single one only. Their shape is that of a thickened and dentated ring, which is surrounded by caseous tissue and perigastric lymph bodies. I have not seen one in a child. Vascular spasms are accused by Klebs, venous stasis by Rokitsansky,—who, however, never saw one before the fourteenth year,—gastritis by Cruveilhier and by Galliard, pressure necrosis by Rasmussen. To what extent this latter may happen may be concluded by occurrences which take place in other mucous membranes. Altogether, that of the stomach is very liable to swell rapidly and extensively,—for instance, by an acute gastric catarrh. The folds raised by it compress each other similarly to what is observed,—though its varicosities may not amount to what is called hæmorrhoids,—in the lower part of the rectum. In these folds small fissures or ulcerations are often found as the results of the mutual pressure. In the adult, Hale White has seen many instances of ulcer as the result of mere diapedesis.

SYMPTOMS.

Pain is a common—the most common—symptom of gastric ulcer. It is rarely absent, and is caused by oversecretion, by undue peristalsis, or by pressure. In infants and children this symptom is quite deceptive, for obvious reasons. In adults it is hardly ever absent. Pressure on the full or the empty stomach reveals it in the median line, or slightly to the left, below the ensiform process mostly. Now and then the pain is first referred to the dorsal spine, or even higher. Eating causes it immediately; it continues during the meal and until the stomach gets rid of its contents. Children betray what seems to be merely loss of appetite and fear to eat.

Pain which arises half an hour or an hour after a meal means duodenal ulcer or peritonitic adhesions of the duodenum. Pain starting three or four hours after a meal should be referred to the colon. Pain while the stomach is empty, which is quieted by eating, means neurosis. Pain which is developed during a meal need not always, however, be referred to ulcer; ice water, cold temperature, emotion may cause it. It is to be regretted that this important symptom is more valuable in the adult; the young require more time, patience, and persuasion to yield it unmistakably. In many cases the slow but persistent emaciation caused by insufficient nutrition is an indispensable adjuvant symptom.

Vomiting is a frequent symptom among adults, not so frequent in the young, though in the very young, the infant, vomiting is a common occurrence in health. When it is produced by ulcer, it behaves like the same symptom in the adult and is mainly caused by excessive acidity. This need not always mean an excess of hydrochloric acid. Fat acids are quite common in infancy and childhood that are still

being sacrificed on the heathenish altar of the top milk and cream gospel which tells women that a cow's milk when run through a laboratory is preferable to the breast milk of a human woman. The normal proportion of hydrochloric acid in the stomach is one quarter per cent., or, according to Boas, three per mille. The assertion that in the young it is less has not been proved by the vast number of inconclusive or insufficient magazine articles. As long as the surface of the stomach is normal its hydrochloric acid, when normal, is easily neutralized by some foods and the alkali of the blood; a surface lesion, however, may become subject to direct irritation by the acid, mainly when in excess. Excess is most dangerous as a cause of the impossibility on the part of an ulcer to heal. I believe that Deaver, in a paper published in the *Boston Medical and Surgical Journal* of September 2, 1909, is incorrect in his suggestion that it is the ulcer which causes, and is not caused by, an excess of hydrochloric acid.

In a few cases there is no excess of acidity, but alkalinity. They are those of dilatation of the stomach, which depend on stricture of the pylorus, either antecedent to or caused by an ulcer located either in the closest proximity to or on the pylorus. In a few such cases the centre of the stomach may contract and form an hourglass constriction. This anomaly has been observed in the newborn—probably also depending on an inflammatory process—by I. H. Musser (*Philadelphia Medical Times*, 1883, p. 331), K. Sievers (*Berliner medizinische Wochenschrift*, 1899, p. 325), and Dwight (*American Journal of the Medical Sciences*, 1903, p. 581). Still, Ballentyne (*Antenatal Pathology*, ii, p. 533) believes that these cases mean nothing but an atavistic return to the condition of some animals.

Hæmorrhages behave as they do in adults, but they are rare. Still, I have seen a case in a girl, nine years old, with vomiting of coagulated and liquid black blood; and one in which the feces contained during many weeks a sufficient daily quantity to be detected by the guaiac test. Care should be taken to ascertain that bleeding from the gums, mouth, nose, œsophagus, rectal polypi, or varicosities, is not mistaken for ulcer.

STATISTICS.

Leube reports a mortality of 2.4 per cent.; Debove and Remond, fifty per cent.; others, any number between the two extremes. Statistics are a very deceptive and most irrational method of dealing with clinical questions (*Albany Medical Annals*, June, 1907). The experience of the general practitioner in a large practice among the poor or among the rich, or among men or among women, or among children; in the country or in the city crowded with factories; the general practitioner with a family practice only, or with an office practice preeminently; the consultant who is called in on bad cases only; the stomach specialist; the surgeon in general practice; the hospital physician in whose wards very sick patients only take refuge; the hospital surgeon who never sees anything but hæmorrhages and perforations—what a variety of good observers, bent upon truth, trying to avoid mistakes, but also what a variety of cases and durations and causes and terminations and possible sta-

tistical mistakes. Exclusive hospital physicians and surgeons gain no knowledge of the average ulcer of the stomach—their is only an experience of bad or of fatal cases. Their statistics refer to hæmorrhages and perforations, but not to chronic ulcer of the stomach, which in almost every case is a disease of slow development, chronic in its nature, amenable to dietetic and drug treatment, part of the domain of the general practitioner, and influenced by general therapeutic methods, the last stage of which, in a few cases comparatively, may—or rather will be—an operation, which should, if possible, be performed by a man who has attained a high degree of skill at the expense of previous cases. The most reliable statistics of chronic ulcer of the stomach could, or should, be established by one hundred or five hundred general practitioners, provided they keep records of all their cases. They see them in the beginning when the symptoms are those of dyspepsia, superacidity, or pain only; they see the advanced cases which have been neglected by the factory girl who is compelled to work ten or twelve hours daily for a living; by the nearsighted college girl who cripples her pelvic circulation and prepares for sterility and invalidism by a sedentary life; by the business man, the working man, the mechanic; they see also the worst cases—the so called acute ones of hæmorrhage and perforation. Collected in large numbers—but in large numbers only—they would yield reliable data.

TREATMENT.

The nature of the disease being the same at all ages, the principles of treatment are the same. A diseased organ must not work; it must rest. The attempts at feeding, even in the most acute cases, on the plea of preserving strength and weight, are mistakes. The reputation and standing of the men counseling feeding the first day of a hæmorrhage from the stomach is a sad temptation to us, the medical public, but their advice should be resisted. An acute case requires rest in bed; small doses adapted to pain, restlessness, general condition, and age, of morphine, repeated or not as the case requires. Hæmorrhages require starvation, ice on the stomach, a morphine dose in the mouth where it is rapidly absorbed, or subcutaneously, and adrenalin which, however, is useless when swallowed. Lead has not often proved successful at my hands; ergot, never. Six ounce doses of a five or ten per cent. solution of gelatin have been recommended; its bulk is an objection. In a few very bad hæmorrhages, like those in pulmonary cases, I believe I have seen a favorable effect from ligating the venous, not the arterial, circulation of the lower extremities by a heavy band. Collapse after hæmorrhage has its own indications.

In chronic cases, that is those we mostly see, the cause should be looked after. Heart disease should be moderated, chronic gastric catarrh treated with proper diet and medicines. No solid food; milk or stale bread, cereals, and the white of egg; in very bad cases, milk only, raw in the country, in the city, mostly heated. It must not be drunk like water, but eaten with a spoon to avoid coagulation. Butter-milk, when obtainable fresh, is advisable. Those who tell you they are not able to take milk, and those cyclopædia taught folks who talk of idiosyncrasy, will be cured of the latter by twelve or twenty-four

hours' starvation. The worst patients should be kept on milk exclusively, or on milk mixed with a strained decoction of rice or barley or gelatine. Milk, though mostly benefited by the addition of table salt, must not be so mixed in gastric ulcer where hydrochloric acid is injurious. Stale white bread may be added. It should not be soaked in the milk, but eaten separately so as to secure insalivation. A few slices of dry bread and a few quarts of milk, more or less, will keep up both strength and weight—children in proportion. The meals should be many, not large. This diet may be continued for weeks, even months, in quantities adapted to individuals and to ages. I have seldom found any difficulty in enforcing it with people who want to get well or in children who must get well. Meals must not be ice cold in chronic ulcer, lest there be an increase of peristalsis.

Medicines are required to keep the stomach alkaline. Neutralize fat acids and hydrochloric acid. Boas tells us that three drachms of sodium bicarbonate are required to neutralize the three per mille solution of hydrochloric acid in the stomach. Its constant use has, however, its drawbacks or uncertainties. The carbonic acid inflates the stomach, causes peristalsis, and contracts the pylorus. It is quite possible that, as it exhibits all these results it is more serviceable in duodenal than in gastric ulcer. That lime water, with its one part of lime in 780 of water, has very little neutralizing effect, is evident.

Magnesium oxide, with or without bismuth, is best adapted for neutralization. A dose should be given every two hours, one at all events a few minutes before every one of the frequent meals. A child of ten may take daily one or two grammes in divided doses. It should not cause diarrhoea. If it does, the dose should be reduced and calcium added, the carbonate, perhaps the phosphate, prepared chalk. Magnesium requires from one to two hundred parts of water to prevent it from forming gelatinous masses, even conglomerates, which have been found to consist of ammoniomagnesium phosphate. With some little circumspection, it may be given for months in succession.

The proper preparation of bismuth is the subcarbonate. The subnitrate is gritty and hard, the subgallate and salicylate are not tolerated sufficiently as to give permanent relief. Bismuth poisoning, with cerebral convulsions and local inflammation like that caused by mercury, in the organs of elimination, kidneys, colon, salivary glands, has been noticed by good observers, probably or possibly when epithelium was thrown off to an extensive degree. I have used bismuth frequently, thousands of times, these fifty-six years, but have not been unlucky enough to meet such a case. A child of ten will take daily, alone or mostly with the magnesium, from one to five grammes. Other bismuth preparations have been strongly recommended in these cases by some physicians.

Excessive peristalsis and pain may demand the use of an opiate, once or often. The excommunication of opium from the treatment of the young has been copied from one textbook into the other. The one and the other are mistaken. There is nothing that cannot be abused; not even opium; so there should be no abuse. Chloral or paraldehyde or

chloroform preparations irritate and cannot take the place of opium.

Instrumental treatment I cannot advise. Stomach tubes may irritate the ulcer, cause a hæmorrhage—I have seen that—and remove a beneficent clot and start bleeding anew. Among others, Louis Bourget, of Lausanne, after emptying the stomach by means of a soft tube, introduces 100 c. c. of a one per cent. solution of iron sesquichloride. That is removed and replaced by a new injection four or five times until the liquid returns clear. The same procedure is continued during four or five days. In rare cases he makes the patients drink the fluid and turns them on their faces. It seems to me that that is treating the ulcer and maltreating the patient.

Silver nitrate, in spite of the chemical objections—decomposition by the acid of the stomach—is a good remedy in protracted and relapsing cases. One quarter of a grain in a pill, or in a tablespoon of distilled water, may be given an adult three times a day two or more hours after a meal; children, in proportion. I continue that for a month, then stop a while, fearing argyria.

After treatment may require iron. It is not necessary to go outside the *Pharmacopœia* and *National Formulary*, particularly when these standard books will have been, in the near future, shortened and corrected and freed of the quack preparations smuggled in by those who may know why. Warm applications will relieve local pain. Opium may be required.

THE ÆTIOLOGY AND SYMPTOMATOLOGY OF PEPTIC ULCER.*

By CHARLES G. STOCKTON, M. D.,
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ÆTIOLOGY.

It is impracticable to analyze all the excellent experimental work and ingenious speculations on the pathogenesis of peptic ulcer.

The most interesting and probably the most important recent contribution is that of Weinland who maintains that there is formed in the gastric mucosa an antibody, an antipepsin, which opposes the digestive action of the acid gastric juice. Weinland holds that, for some unknown reason, there occurs, in certain areas of the gastric mucosa, a deficiency of these antibodies and that the stomach, thus unprotected, is readily injured by the corroding effect of the gastric secretion. This statement at once suggests a number of inquiries, and to the questions raised it is proper to attempt an answer. Before doing so let us consider other features of the ætiology of the disease.

Sex. Gastric ulcer occurs in women somewhat more frequently than in men; duodenal ulcer as well as chronic gastric ulcer in men more frequently than in women.

Age. Ulcer is seen most often in women between the fifteenth and thirty-fifth year, in men between the twenty-fifth and fiftieth year, but may occur at any age. The frequency in which it is found in later years may be misleading for the reason that it may

*Read at a meeting of the New York Academy of Medicine, October 7, 1909.

have developed early in life and then recurred or continued in later life with few symptoms. In other words, an ulcer found in a man of sixty may have begun when he was forty. The disease belongs to the middle third of life, but reaches into the first and last thirds.

Occupation and geographical distribution. On close examination, occupation appears to have little bearing on the matter. The place of residence seems to be a matter of some importance. The Slavs are said to be relatively free from ulcer, while the reverse is true of the inhabitants of Great Britain. It is said that the Japanese and Chinese rarely suffer from ulcer as compared with the people of western nations. Clinically the majority of cases that are seen in England and Ireland are among young, chlorotic, serving women. Little profit arises from the study of the incidence of the disease in small sections of the country, because the possibilities of error are great.

Predisposing causes. It has been held that anemia and especially chlorosis favor the appearance of peptic ulcer. In experimental lesions of the gastric mucosa in animals, subsequently bled, it is found that the healing of the wound is retarded. Many years ago Riegel called attention to the fact that the gastric acidity was usually heightened in subjects having chlorosis. Hyperchlorhydria is present in the majority of ulcer patients, and it has come to be a prevalent belief that this superacidity is one of the factors in the development of gastric ulcer. There can be little doubt that with an exaggeration of digestive function of the stomach the healing of ulcer is made difficult and, by the same agency, the development of ulcer is probably favored. The fact that hyperchlorhydria is bound up in the history of most cases of ulcer and that hyperchlorhydria develops in chlorosis, probably explains the belief that chlorosis is a factor in the development of gastric ulcer.

It has been shown that erosions or ulcerations in the stomach occur in association with typhoid fever, syphilis, tuberculosis, diabetes, and other diseases, but these lesions are quite another thing from peptic ulcer and should not be included in its history. Various experimenters have studied the action of infection in producing gastric ulcer. After feeding large quantities of colon bacilli, Turck found apparently typical round ulcers in the stomach of animals. This occurred in animals in which the general health was deteriorated by infection. Rosenau and Anderson, of the Government Hygienic Laboratory, report having successfully produced gastric ulcer in guinea pigs by the injection of diphtheria toxine. Botton, of London, has made interesting experiments that seem to show that a gastrotoxic effect occurs in the mucous lining of the stomach of animals into whose circulation is injected the macerated gastric mucosa of other animals and animals of other species. He also believes that he has successfully immunized animals against this cytolytic toxine. These results may have some relationship with the antipeptic body reported by Weinland. We do not know of any antecedent condition predisposing to peptic ulcer except hyperchlorhydria and possibly chlorosis and infection.

Exciting causes. Beaumont, nearly a century ago,

showed that wounds of the stomach, whether made deliberately or as the result of accidental trauma or of inflammation, underwent rapid healing if unprovoked and left to Nature. Cohnheim and Matthes showed that this holds true in animals. The healing of injuries of the gastric mucosa is found to proceed even more rapidly than in other regions of the body, perhaps owing to the remarkable vascularity of the stomach. Notwithstanding this fact, local injury of the stomach has been held as an important aetiological factor. The statement seems to have little basis for foundation. In consultation with Dr. Gaylord, I studied a patient who was in the habit of swallowing knives, broken glass, steel nails, bits of coal, and other extraordinary articles; the gastric secretion was not particularly disturbed. As he suffered some inconvenience, a gastrotomy was done whereupon there were found knife blades penetrating the walls of the stomach; many sharp fragments had to be extricated, some hundreds of bits of steel, glass, broken needles, etc., were found free in the stomach. There existed a few erosions, but none that resembled true ulcer. The foreign bodies were removed and, after recovering from the operation, the man's digestion seemed no different from what it was before, although he was free from the uneasiness which these bodies, foreign to the stomach, seemed to create. There are recorded a number of similar observations. There is no reason to believe that local trauma excites gastric ulcer. Possibly there is more proof that blows over the epigastrium lead to ulcer, but its bearing is dubious. Superficial burns undoubtedly excite duodenal ulcer. The reason is unknown. Trophic disturbances, resulting from lesions of the central and sympathetic nervous system, are suspected as being a direct cause of peptic ulcer. The experiments of Ebstein upon the brain, and of Schiff, Ewald, and others upon the spinal cord were followed by focal hæmorrhage and later by ulceration of the gastric mucosa. R. de la Vedora, in a long series of experiments, injured the celiac plexus and the splanchnics which resulted in producing typical round ulcer of the stomach. Injuries of the pneumogastric were not followed by lesions of the stomach except when they were made below the diaphragm. When abdominal fibres of the vagi were injured, as shown by Yzeran, almost uniformly there developed gastric ulcer, rather typical in character, with death from hæmorrhage some months after the experiments.

Without going more minutely into this subject, enough is presented to show that there are seeming contradictions. Why is it that the stomach so well endowed with the power of restoration to the normal should lose its resistance in small areas, especially located at the lesser curvature, near the pylorus, or in the upper part of the duodenum? It is universally admitted that when the tissues of the stomach lose their vitality, autodigestion ensues; in other words, peptic ulcers are formed. It is known that the gastric juice attacks unfavorably living tissues otherwise than that of the stomach, for instance, the leg of a living frog, the ear of a living rabbit. Dead tissue is digested more quickly than living tissue, but other living tissue is attacked more readily than the tissue of the gastric mucosa. Unquestionably there is something peculiar to the stom-

ach by means of which it is protected from the gastric juice. Also there must be some factor that disturbs or destroys the inherent protecting influence in the area of ulcer. To explain this, let us turn to the doctrine of Weinland, viz.: that there is a protecting antibody developed in the stomach for the preservation of its lining. But after accepting this we find remaining the need of an explanation for the focal disappearance of the antibodies in isolated regions wherein round ulcers develop. This is the unknown element in the etiology of gastric ulcer.

When we take into consideration all the facts hitherto rehearsed, it has seemed to me that the best explanation for this local disappearance of resistance in the stomach may be found by including in the group of factors of the pathogenesis, the element of trophic neurosis. Through the influence of the nervous system the circulation may be temporarily or continuously disturbed, thus leaving the part vulnerable to the action of the gastric juice; or, including Weinland's theory, through the nervous system the development of antibodies in a certain region might be inhibited as the result of which the tissues would be attacked and round ulcer would follow. I am aware that this suggestion has met with opposition in certain directions, but it has never been satisfactorily excluded from the possibilities and, in my judgment, of the probabilities of the case. I believe that the essential factors in the cause of gastric ulcer include certain systemic predisposing conditions, among which are chlorosis and hyperchlorhydria; that resistance as to digestion is lost in certain small areas through the intervention of a trophic neurosis interfering with the circulation of the normal nutrition of the part. As an illustration of what is meant in this use of the term trophic neurosis, I would suggest herpes as a satisfactory illustration. It is not strange that ulceration can be produced in the gastric mucosa by a variety of causes. The mystery is that peptic ulcer should be so reluctant to heal. It belongs to a class by itself, and its history strongly points to a trophic cause.

It is in the nature of herpes to attack certain portions of the body by preference, as for instance, the lip or the prepuce. It is prone to recur repeatedly in the same vicinity. Some individuals seem predisposed to it, especially when the health is deteriorated. It is obscurely related to the infections. The experiments of Turck, instead of excluding, rather confirm this origin of gastric ulcer. I would not insist on herpes as the invariable precursor of gastric ulcer; on the other hand, it may result from angiospasm, or from other circulatory disturbance, like thrombosis, as shown by Virchow and Janeway.

At present there is a gap in the etiology of gastric ulcer, and we have only an hypothesis to bridge it. I venture to suggest the following explanation: That the etiology of gastric ulcer depends upon a constitutional disturbance leading to a neurotrophic change in the structure of the gastric mucosa, thus interrupting circulation or inhibiting the local production of antibodies; that the heightened gastric acidity leads to a rapid erosion of the devitalized part; that chlorosis contributes inasmuch as it leads to excessive acidity; that infection or septic toxins may induce the disease through the destruction of the antibodies in the gastric mucous membrane. It

is demonstrated that infarction, or other factors that interrupt the blood supply in a given area of the stomach lining, may give rise to ulcer.

SYMPTOMATOLOGY.

Pain. Peptic ulcer is at times surprisingly devoid of symptoms, a concealment that belongs more frequently to duodenal ulcer. As a rule there is pain, often paroxysmal and intense. This pain is made worse by eating, sometimes appearing immediately after a repast, at other times worse at the height of digestion. In duodenal ulcer severe pain is apt to occur two or three hours following the taking of food, at which time the escape of gastric juice into the duodenum is most active. The location of the pain in gastric ulcer varies with the position of the stomach. It is usually found slightly below the ensiform and rather to the left of the median line. In women it often is felt at a lower point. The pain is usually localized, but may radiate widely over the epigastrium, or even beyond, but there always exists a circumscribed painful point wherein suffering is greatly increased by pressure. From this we may distinguish the pain of ulcer from that of gastritis or hyperchlorhydria. Besides this point of tenderness there often occurs another situated to the left of the dorsal spine, somewhere between the seventh and the twelfth vertebrae. The epigastric pain is relieved by taking orthoform or anæsthesine. This fact, announced by Murdock, is of diagnostic value.

Vomiting. Vomiting is an important, but far from ever present symptom. It is usually acid in character, follows the taking of food, and generally gives relief to the pain.

The appetite may be good, but there is often a fear of eating which results in lowered nutrition. There is constipation.

In the vomitus, in the wash water after lavage, and in the stools, blood may be found, perhaps merely occult in character.

Hæmatemesis, even when abundant, is not a proof of ulcer. Its presence may be explained by hepatic cirrhosis, carcinoma, splenic anæmia, acute congestion of the stomach from any cause, and occasionally it is not to be explained. It is an important symptom of peptic ulcer for the reason that it is generally associated with other highly suggestive symptoms.

The stomach content removed by aspiration shows usually a very high secretion of hydrochloric acid. This is not invariable, and cases occur in which no free acid can be found. I do not hesitate to use carefully a stomach tube in ulcer cases either for diagnosis or treatment. Needless to say, dexterity is important. In those cases wherein the chief complaint is an irritable stomach, the use of the tube is very important in making a diagnosis. In these cases we find that the digestion of proteids is active, while the starches are poorly changed. Ordinarily we encounter an intense hyperchlorhydria, and not infrequently in the wash water may be found traces of blood. The high acidity is very often a result of over retention of gastric contents, and not necessarily from excessive secretion of hydrochloric acid. The delay in the onward passage of the acid chyme depends upon pyloric spasm. This condition of pyloric spasm is fruitful of symp-

toms, by raising the acidity, causing more irritation and increasing pain. Pyloric spasm is practically ever present when the ulcer is seated at the pylorus or in the duodenum.

We may distinguish between peptic ulcer and *gastric crisis* in that the latter appears suddenly with great intensity and with intervals of perfect health. The pain of cholecystitis may be excluded by its location, its radiation, the difference in point of tenderness, the accompanying hepatic disturbances, and, often, the presence of urobilin. Gastralgia or hysterical pains are generally relieved by deep pressure. The pain of hyperchlorhydria occurs toward the end of the gastric digestion, or when the stomach is empty, is relieved by taking food, is accompanied by only moderate tenderness, and is diffused in location. There is little danger of confounding the diagnosis of cancer and peptic ulcer except in those cases that, clinically, are not so very frequent, which begin as ulcer and terminate in cancer. In these cases there is a period in which it is impossible to exclude one disease for the reason that both exist.

Pyloric ulcer, often chronic, is as much duodenal as gastric. The pylorus has a double personality and is at once the sphincter outlet of the stomach and the mouth of the duodenum. It is often impracticable to differentiate between pyloric and duodenal ulcer, but sometimes this may be done through finding blood in the feces while none appears in the stomach contents.

436 FRANKLIN STREET.

THE CLINICAL AND PATHOLOGICAL SIGNIFICANCE OF BACTERIÆMIA IN SUPPURATIVE OTITIS.*

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and JONATHAN WRIGHT, M. D.,
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The clinical and microscopical study of the blood in health and disease, during the past twenty years, has been of inestimable value in establishing the diagnosis and prognosis of many conditions which had hitherto been doubtful. One has only to recall the uncertainty in malaria, typhoid, leuchæmia, etc., previous to such examinations to appreciate their importance. So, too, the great value of differential leucocyte counts in estimating the gravity and extent of purulent infections has been well demonstrated.

Although the study of larger quantities of blood, by culture methods in different media, is more recent; and the results, naturally, from the comparatively limited experience, of less certain significance, it bids fair to throw much additional light on morbid conditions.

Dr. Wright, who has joined me in the preparation of this paper, and in the discussion of the problems presented by the work done in the clinic, and in the laboratory, remarks: "The idea that clot formation somewhere in the body must be present to form a

nidus for the bacteria circulating in the blood, is not borne out by theory or observation or experience, as noted in recent work. Fraenkel¹, for instance, explains the occurrence of thrombi born from infection of wounds at the time of operation; also from distention of the intestines, letting the infectious agents through; also in angina.

The idea here is, undoubtedly, that minute clots in the veins form a culture medium in the wound for infecting bacteria. This is noted in abdominal work, but, since they accompany angina and intestinal distention and other conditions of trifling import, and since our experiments show that they are concomitant with systemic disturbances accompanying middle ear suppuration, it seems reasonable to suppose, from these and many other similar facts, that the blood clot has little to do at least, with the sporadic occurrence of bacteria in the circulation. The initial disturbance is probably a systemic one, which may let the bacteria through from the surface, as operative shock of various kinds, including that from operative procedures, loss of blood, etc., frequently overturns the equilibrium existing between a streptococcus, or other pathogenic agent, present in the blood without signs, whereupon the obvious, and sometimes threatening, symptoms of septicæmia develop. I think this is the only view consistent with what we know of the extremely frequent saprophytic existence of the tubercle bacillus in the human organism. The same support may be found in the numerous instances of those carrying typhoid, diphtheria, and cholera bacilli in the circulating blood. A like support can be found in the literature of latent microbism of the lymph nodes.² I need specifically to refer to two more quotations, only, in my notes bearing on the subject: (1) When mice were experimentally fed with a bacillus of the paratyphus group³ "in the circulating heart blood the bacteria could be repeatedly demonstrated at a time when the mouse was still entirely healthy." "When the mouse became sick it was then first found in the intestinal canal."

(2) "Out of the blood of two women typhoid suspects (during an epidemic of typhoid) the typhoid bacillus was repeatedly cultivated. These patients did not have typhoid nor was there any history of their having had typhoid, but autopsy revealed miliary tuberculosis. Another case of a man with phthisis showed typhoid bacilli in the blood." The author, from whom I quote, remarks very pertinently to our subject, "the blood diagnosis, therefore, is not trustworthy in this respect."

Professor Rosenberger, of Philadelphia, at the meeting of New York County Society at the New York Academy of Medicine, recently reported several hundred cases of tuberculosis where in all types tubercle bacilli were found free in the blood current.

At the meeting of the New York Academy of Medicine in March of this year, Dr. Emil Gruening⁴

¹Ueber post-operative Thromben-Embolie: *Archiv für klinische Chirurgie*, lxxxvi, 1908. Ref. *Centralblatt für allgemeine Pathologie*, etc., xx, No. 4, February 27, 1909.

²Dudgeon and Ross: *Journal of Bacteriology*, March, 1906. Dr. Reiner Muller: *Centralblatt für Bakteriologie*, xl, No. 5, p. 620, March 10, 1906. Conforti and Bardon: *Idem*. For full literary reference, see Wrozek: *Virchow's Archiv*, clxxviii, p. 83.

³Marks, L. H. *Arbeiten aus dem Institute für experimentale Therapie zu Frankfurt am Main*, 1908.

⁴Busse: *Münchener medizinische Wochenschrift*, 1908, p. 1113.

⁵Medical Record.

*Read at the meeting of the American Otological Society, in Boston, June 1 and 2, 1909.

read a most interesting report of ten cases of mastoiditis complicated by septic lateral sinus thrombosis, in which Libman, the pathologist to Mount Sinai Hospital, had found in seven cases the presence of a bacteriæmia. Two of these cases presented no definite clinical signs, other than the history of an otorrhœa and streptococciæmia. A septic clot was demonstrated in every case on opening the sigmoid sinus.

Based on this experience, added to that of a large number of negative findings, Libman stated his belief that, in a case of suppurative otitis, in which there was no active purulent focus elsewhere, (like pyelonephritis, peritonitis, etc.,) the presence of a bacteriæmia was sufficient evidence of septic lateral sinus thrombosis to justify immediate operative interference, even in cases where other definite clinical manifestations were absent.

Realizing the immense advantage of this comparatively easy method of positive diagnosis in doubtful cases, where statistics have proved that operative interference, when adopted within the first week, has saved twice as many patients as when adopted after that time, the authors attempted to substantiate or disprove this position, from the large material offered by the Manhattan Eye, Ear, and Throat Hospital. All of the attending surgeons courteously consented to the examination of suitable cases admitted to the hospital wards in their respective services, and we are therefore able to present the result of a large number of cases in a comparatively short time.

In all, from February 27, 1909, to March 15, 1909, at the time of this writing, cultures have been made from fifty-seven patients, fifty-five ear cases from the clinics of Berens, Phillips, Duel, McKernon, two frontal sinus cases from the clinics of Chappell and Coffin. In some of the positive cases, one or two repeated cultures were made to confirm the first.

Owing to the difficulty in making them, cultures in infants and small children were not attempted. At first only cases just operated in, or about to be operated in, for mastoiditis were examined. Later on, cases of acute otitis, in which symptoms cleared up rapidly after myringotomy, were investigated.

In forty-two of these cases the following technique was adopted by Miss Ginoux, who did all the laboratory work: "Ten c.c. of blood drawn with sterile syringe or 'mosquito' from the median vein is transferred to the Erlenmeyer flask containing 150 c.c. of broth (either plain broth or one per cent. dextrose) and is then incubated for thirty-six hours at 37° C. It is then thoroughly shaken, its neck well flamed off, and 15 c.c. of its contents poured out into a previously sterilized centrifuge tube. This tube full of blood broth is then immediately centrifuged for fifteen or twenty minutes; the supernatant liquid is poured off, and agar slants are inoculated from the sediment. This inoculation should be made with a stiff platinum loop, and plenty of the blood corpuscles at the very bottom of the tube should be picked up and carried on to the agar."

In these forty-two cases by this method, fifteen positive cases of bacteriæmia were demonstrated. In a second series of fifteen cases, the blood was mixed with an ammonium oxalate solution, to prevent co-

agulation, and immediately plated. By this method one positive case was demonstrated.

Brief histories of these positive cases will be interesting:

CASE I. No. 520,630, Dr. Duel's Clinic.—Male, thirty-seven. Acute mastoiditis. Operation by Dr. Kerrison, Subperiosteal pus. Pus and granulations found throughout mastoid. Temperature never above 100° F. Discharged from hospital, thirteenth day. Uninterrupted recovery. Smear from ear showed extracellular diplococci. Blood culture: 1, Short chained streptococci, on day of operation; and 2, same, two days after operation.

CASE II. No. 521,978, Dr. McKernon's Clinic.—Male, thirty-two. Acute mastoiditis of one month's duration, operation by Dr. Rae; soft parts œdematous; mastoid softened and necrotic. Sinus accidentally punctured with thumb forceps near bulb. Temperature not above 99.4° F. after operation, except for one day, until the eighth day, when it went to 105.4° F. Evidence of systemic infection followed; jugular excised on thirteenth day after primary operation, no clot demonstrated; sinus opened and bled very profusely.

Blood culture: 1, At first operation long streptococci (February 26th); 2, at second operation short streptococci (March 12th).

Pneumonia and pleurisy after last operation, temperature varying from 101° to 104° F. for twelve days after excision of jugular. Ultimate recovery. Blood count made before last operation: Leucocytes, 12,000; polynuclear neutrophils, eighty-five per cent.

CASE III. No. 522,793, Dr. Duel's Clinic.—Male, twenty-two. Acute mastoiditis, duration ten days. Operation by Dr. Duel; pus and granulations throughout mastoid. First day after operation temperature went from 99° to 106.2° F. Patient isolated on account of suspicious œdema and redness about wound. This subsided in twenty-four hours. Temperature fell gradually, but varied between 99° and 104° F. for six days. Patient then had a chill and rise of temperature to 105.2° F. Jugular ligated and excised above the facial; no clot demonstrated. Sinus was opened and bled freely. On third day after operation temperature went to 103° F., but subsided and became flat shortly afterwards. Discharged on twenty-fourth day after first operation.

Blood culture: 1, At first operation negative (March 10th); 2, long streptococci (March 13th); 3, at last operation long streptococci (March 19th).

CASE IV. No. 522,594, Dr. McKernon's Clinic.—Male, forty-three. Acute mastoiditis. Short duration. Operation by Dr. Rae. Uneventful recovery. Temperature never above 100° F.

Blood culture: Pneumococcus.

CASE V. No. 523,093, Dr. McKernon's Clinic.—Male, twenty-three. Otitis media purulenta chronica with polypi, duration, since childhood; complained of pain in knee joint (its condition not noted). Operation, radical mastoid, by Dr. Haskin. Sinus exposed, not injured, condition of mastoid not noted. Temperature after operation varied daily from 98.6° to 102.2° F. for six days.

Blood culture taken on fifth day after operation: Pneumococcus found. Temperature became practically normal, no further operation. Patient discharged on eleventh day after operation.

Blood culture: Pneumococcus.

CASE VI. No. 523,238, Dr. Coffin's Clinic.—Male, twenty-eight. Frontal sinusitis. Operation by Dr. Hubbard. Gradual rise and fall of temperature from normal to 102° F. for four days—practically flat afterward. Uneventful recovery.

Blood culture: Streptococcus.

CASE VII. No. 524,664, Dr. Beren's Clinic.—Male, thirty-four. Acute mastoiditis, duration three weeks. Operation by Dr. Braun. Pus and granulations throughout mastoid. Flat temperature following operation; no evidence of systemic infection.

Blood culture: Short streptococci.

Discharged on seventh day.

CASE VIII. No. 525,678, Dr. McKernon's Clinic.—Male, twenty. Acute mastoiditis, duration one week. Operation by Dr. Brown. Pus and granulations throughout, with softened bone. After recovery from anesthetic chill and rise of temperature to 104.2° F., gradually subsided to

normal on third day; recovery uneventful. Discharged on the nineteenth day.

Blood culture: 1, Short streptococcus; 2, same.

CASE IX. No. 525,817, Dr. Beren's Clinic.—Female, eighteen. Otitis media purulenta acuta, two weeks' duration. Myringotomy under nitrous oxide gas by house surgeon. Ear irrigated every three hours; no pain, no mastoid tenderness. Temperature normal. Discharged on fifth day.

Blood culture: Short streptococci.

CASE X. No. 525,874, Dr. Duel's Clinic.—Female, thirty. Acute mastoiditis, ten days' duration. Operation by Dr. Duel. Pus and granulations throughout mastoid. Uneventful and rapid recovery. Temperature gradually subsiding from 102° F. directly after operation until day of discharge on seventh day.

Blood culture at time of operation: Staphylococcus; taken again day before discharge, short streptococcus. Mastoid pus smear, short streptococcus.

CASE XI. No. 426,531, Dr. McKernon's Clinic.—Male, thirty-four. Acute mastoiditis. Operation by Dr. Rae. Recovery uneventful. Temperature practically normal after operation. Discharged on sixth day after operation.

Blood culture: Short streptococcus.

CASE XII. No. 526,355, Dr. Beren's Clinic.—Male, thirty-five. Otitis media purulenta acuta. Myringotomy on first day of pain. Uninterrupted recovery.

Blood culture: Short streptococcus.

CASE XIII. No. 526,350, Dr. Chappell's Clinic.—Male, thirty years. Frontal sinusitis. Admitted April 14th. Temperature, normal. Operation by Dr. McKenty, April 16th. April 18th temperature rose to 102.4° F. and fell rapidly to normal. Patient complained of headache and pain in back of neck. April 19th, temperature rose to 105° F., wound was reopened under chloroform. Lumbar puncture, large quantity of turbid fluid obtained. Temperature continued high, reaching 106° F. on April 21st, when patient died.

Blood culture: Long streptococcus.

CASE XIV. Dr. Duel's Clinic.—Female, twenty-three. Rapid infection of mastoid without early noticeable involvement of middle ear. Definite signs of acute labyrinthitis following mastoid operation by Dr. Duel. Acute leptomeningitis and death. Autopsy confirmed diagnosis. Sinus not involved.

Blood culture: Streptococcus.

CASE XV. No. 527,103, Dr. Duel's Clinic.—Male, thirty-four. Acute mastoiditis. Duration ten days. Drum membrane white, but mastoid very tender. Operation by Dr. Duel. Extensive involvement of mastoid with erosion of sinus wall. Internal jugular ligated, clot above facial and not excised, sinus then incised and clot extending into bulb removed, free bleeding from above, none from below. Recovery uninterrupted; general condition always good. Temperature never above 100.2° F.

Blood culture: Streptococcus.

CASE XVI. Dr. McKernon's Clinic.—Boy, eight. Operation by Dr. Rae for mastoiditis, rapidly developing clinical signs of sinus thrombosis. Jugular excised, sinus incised, and septic clot removed. Recovery.

Blood culture: Streptococcus.

We have, then, demonstrated a positive bacteriæmia in sixteen cases out of fifty-seven examined. Four patients had definite clinical signs of septic sinus thrombosis for which jugular ligation and excision, and opening of the sigmoid sinus was performed (two with demonstration of clot; two without, on account of violent hæmorrhage; recovery in all). One patient had acute suppurative labyrinthitis and acute diffuse leptomeningitis. One patient had acute purulent otitis without mastoid involvement. Two patients from the throat clinic had frontal sinusitis, one of these cases was complicated by meningitis.

The remaining nine cases were those of mastoiditis without complications, each of these patients ran an uneventful course after operation. Streptococci were present in fourteen of the cases, pneumococci in two.

It is significant that streptococciæmia was present

in all of the patients presenting clinical symptoms of sinus thrombosis, and in the case of diffuse leptomeningitis; however it is none the less significant, from another point of view, that in nine patients without any alarming symptoms of further complications seven had streptococci and two pneumococci in the blood.

It seems perfectly evident that a bacteriæmia occurring in the course of a purulent otitis can by no means be considered sufficient cause for invasion of the sinus in the absence of other definite clinical symptoms.

The fact that Libman found a bacteriæmia in seven out of ten of Gruening's cases and that we found it in all cases in which the clinical symptoms were pathognomonic of sinus thrombosis would seem to make it a valuable additional sign in connection with definite clinical symptoms.

A review of the histories and charts of the forty-one cases of mastoiditis in our series in which blood cultures were negative reveals the interesting fact that many of them showed rise of temperatures and passed through a much stormier course subsequent to operation than the nine cases which showed a bacteriæmia without other symptoms.

Dr. Wright in remarking upon the facts which I have adduced from our work in the laboratory adds: "The technique of inoculating broth with 10 c.c. of blood and incubating it for two or three days and then centrifuging it is one which has proved very efficacious in demonstrating that in a large proportion of cases, with trifling symptoms of otitis, there is at least, in these cases (nearly thirty per cent.) one or more streptococci in 10 c.c. of the patient's blood. As this quantity of blood is only something like a thousandth part of all the blood, it naturally follows that the proportion of cases actually having bacteriæmia must be much higher than our figures indicate. That Miss Ginoux made no mistake in the basis which she offers for this view seems probable, since, aside from the care she exercised in the technique, a certain number of the cases were examined more than once and the same organism so far as we could judge was found each time. Where smears from the mastoid were compared with the culture results, there was a significant coincidence."

By plating the blood direct, and counting the colonies without losing so much as to break up any physicochemical inhibitive influence the red blood cells may have on the microorganisms in the circulation, it may well be urged by those who have persistently obtained negative results by this method, a surer indication is obtained of the systemic relationship of the patient to the infecting organism.

We have begun a series of cases using a mixture of the blood in an oxalate of ammonium solution to prevent its coagulation and then immediately plating.

Miss Ginoux has obtained some positive results, one in a simple case requiring only paracentesis and showing thirty-nine colonies of streptococci, which would seem to indicate so far as it goes that the ammonium oxalate solution is in itself capable of breaking up any such physicochemical combination as may exist, if there is anything in this view of the matter. After establishing these two facts and at the present writing the latter series of cases needs

extension, it will remain for us to repeat the technique of other observers.

We are able, through the courtesy of Dr. McKernon, to report four other positive cases of bacteriæmia in simple mastoiditis in which there was no clinical evidence of sinus involvement. Recovery was uneventful in all.

The blood culture in two of these was made from Sondern's Clinical Laboratory, where the following technique is observed: Ten c.c. blood drawn with sterile syringe or "mosquito" from vein at elbow. Three c.c. are put into each of two flasks holding 100 c.c. nutrient bouillon. One c.c. is put into each of four tubes each containing four c.c. melted two per cent. glucose agar and plated after mixing. The object of the latter is to grow gonococci and meningococci which do not grow in the bouillon, and this sometimes applies to pneumococci.

The other two were made by Henry T. Brooks, pathologist to the Postgraduate Hospital and Medical School. He uses practically the same method as Miss Ginoux but does not centrifuge.

At least we have proved that a bacteriæmia does exist in such mild cases. Naturally all its limitations have not yet been investigated.

THE COMBINED DIRECT AND INDIRECT TEACHING CYSTOSCOPE.

BY RAMON GUITERAS, M. D.,
New York.

The object of every instrument is to have it serve the purpose for which it is designed and yet be of the simplest possible construction.

The cystoscope has been complex in its structure and difficult for the practitioner to understand. My endeavor in teaching urology has consequently been to so simplify the instrument that a working knowledge of cystoscopy may be more easily acquired.

About two years ago I had a combined direct and indirect observation cystoscope made that differed from other instruments heretofore devised in that the indirect telescope served both as an obturator and for indirect examination. In this way one of the additional parts of the cystoscope, the obturator, was done away with, and the instrument was simplified. It thus seemed a more satisfactory cystoscope for teaching practitioners how to make a thorough and systematic examination of the bladder.

For a long time cystoscopy was not taken up in this country, although it was extensively used abroad. The principal reasons for the neglect of this important step in diagnosis were the price of the imported in-

strument and the lack of teachers in cystoscopy such as could be found in Paris and Berlin. When at last it dawned upon our genitourinary surgeons through their readings and observations that such was the case many visited Paris and Berlin to acquire the art and knowledge in which they found themselves lacking. Finally, our instrument makers and electricians, principally Wappler, of New York, and Preston, in Rochester, through the suggestions of urologists interested in cystoscopy, began to manufacture cystoscopes, and they have placed upon the market very satisfactory and creditable instruments.

At the time, however, when the American manufacturers began to introduce their instruments, the cystoscopists of Europe had passed through the period of observation cystoscopy and were interested in catheterizing cystoscopes. The result of this was that the catheterizing instruments were principally brought out in this country and were employed by practitioners who had had no training in cystoscopy and who found themselves unfitted for the work. The instruments then became toys that they could not use, and when trials were made they were generally for the purpose of endeavoring to pass catheters into the ureters in which undertaking they were usually unsuccessful, and consequently most of them gave up cystoscopy as a hopeless undertaking.

When I started the cystoscopic room in my clinic, seven years ago, I used the Leiter and Nitze indirect observation instruments. The assistants, following me, used a direct ureteral catheterizing cystoscope of the Wappler make, with the result that they were not familiar with the appearance of the bladder and found numerous traumatic lesions of the wall which they called papillomata that were due to the rough manipulation of the telescopic end of the direct cystoscope. Accordingly I made a rule that no one should do cystoscopic work until he had served a certain time as an assistant in the cystoscopic room washing out bladders and preparing cases for cystoscopy. After this there were no more cases of so called vesical papillomata.

I also found that with the development of the

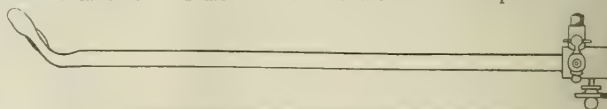


FIG. 1.—Straight, hollow shaft for reception of the telescopic tube.



FIG. 2.—Indirect telescopic tube.

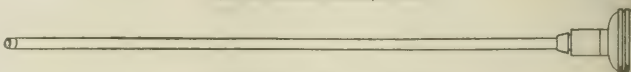


FIG. 3.—Direct telescopic tube.

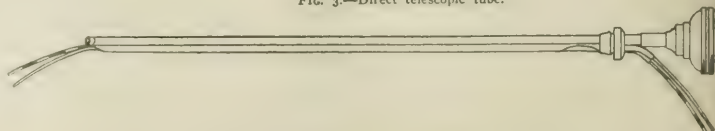


FIG. 4.—Direct telescopic tube with catheterizing attachment.

direct catheterizing cystoscope the object of cystoscopy, that is the examination of the interior of the bladder, was lost sight of, and the men working in cystoscopy looked for the ureters simply that they might catheterize them as a matter of practice. I, therefore, had this teaching observation cystoscope made in order that the assistants might learn to examine the bladder before taking up the catheterization of the ureters.

Description.—This cystoscope is a combination of the Nitze, Brenner, and Boisseau du Rocher instruments; or, perhaps, more properly speaking, of those of Ayres, Brown, Cabot, Bransford Lewis, and Otis, with modifications that seemed practical to me, the principal of which was the elimination of the obturator as an unnecessary attachment. In case I have incorporated the ideas of others than the gentlemen I have mentioned, I have done so through not having a more extensive knowledge of the subject. There are at the present writing so many direct and indirect and combined observation and catheterizing cystoscopes that have been devised by my colleagues, bearing their names, which closely resemble one another, that I have written the description of this instrument with a certain feeling of doubt and apprehension.

The instrument consists of three parts:

(1).—A straight hollow shaft with a curved beak in which there is an electric light that throws its rays both from the convexity and the concavity. This tube has an opening on the convexity and an open space on the concave side at the point where it joins the curved part. This serves as a window through which one can look from the indirect visual part of the telescope that fits directly behind it. (See Fig. 1.)

(2).—The indirect telescopic tube has its distal end cut obliquely and at an angle that fits and fills the opening in the concavity of the hollow shaft. The tube contains a prism for indirect vision and a window that fits behind the open space in the concavity of the shaft of the instrument. It will thus be seen that when the indirect telescope is introduced into the shaft its distal end takes the place of the obturator, while its visual opening is just behind the open space in the shaft. A lock serves to keep the two parts of the instrument in this relation to one another. (See Fig. 2.)

(3).—The direct telescope has its lens at the distal end. When it is introduced through the shaft the distal end protrudes from the opening in its convexity for about a sixth of an inch. (See Fig. 3.)

This instrument is very practical as when the indirect visual apparatus is inserted it answers the same purpose as a Nitze observation cystoscope. After the bladder has been thoroughly examined by the indirect method, the telescope is removed and the direct visual tube is introduced and a direct examination made.

Since then the instrument has been made shorter and of larger calibre with an irrigating and catheterizing attachment. The indirect part of the cystoscope remains the same, and by its use we have the best means of thoroughly familiarizing ourselves with the walls of the vesical cavity and its contents.

(4).—The catheterizing part closely resembles the direct cystoscopic portion excepting that it has on its

surface a fin with a groove on either side of it. These two grooves connect with the nozzles on the proximal end through which the catheters are inserted. The catheters then pass along the grooves to the end of the instrument, being held in place by the inner wall of the hollow shaft as far as its distal end, from which point they are pushed out into the ureters when the instrument is in the bladder. (See Fig. 4.)

75 WEST FIFTY-FIFTH STREET.

INTRAVENOUS INJECTIONS OF MERCURY. A REPORT OF 9,838 INJECTIONS GIVEN FOR THEIR ANTISYPHILITIC ACTION.¹

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Chicago,

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In 1900 (1) I first reported the results of a limited number of intravenous injections of mercury given for their antisiphilic action. Up to the time of this report the number of injections were about equally divided between the use of a one per cent. solution of mercuric cyanide and a 0.1 per cent. solution of mercuric chloride. Even from these few injections, clinical observations showed that of these two salts the preference should be given the latter. Recommendations by foreign authors using this form of treatment stated that a 1 in 1,000 mercuric chloride solution was the maximum strength to be adopted and that the dose should seldom exceed 0.005 gramme (1/12 grain). By gradually increasing the concentration of the solutions, I found that a one per cent. and even a two per cent. solution could be used with impunity and that the recommended 0.005 gramme dose could be exceeded many times, in fact, the maximum dose which I have given was 0.0455 gramme (7/10 grain) and this for several days in succession. The use of these high concentrations and the administration of large doses is a matter first inaugurated and recommended by myself, my past writings (2) thoroughly cover this part of the subject.

While many physicians will grant that the intravenous injections of mercury in all probabilities are rapid and decided in their antiluetic action, they, at the same time and for some inexplicable reason, are markedly reluctant toward accepting this method of treatment. Their strongest opposing argument is that the procedure is fraught with danger, exclusive of this no tangible reasons have been given for its nonacceptance. My experience with a large number of injections will possibly enable me to view this subject from all angles.

The 9,838 injections included in this report were given in 422 cases. Only twenty-two patients completed what I call a full term treatment, namely, about eight courses given during a period of about two years' time, the intervals between these periods being devoted to some other form of treatment; these twenty-two patients averaged 108 intravenous injections each. Eighty-six of the patients received

¹Statistics compiled February, 1908.

two or more courses, averaging thirty-two injections for each individual. Three hundred and fourteen patients received only one course, the average being fifteen injections for each patient. The mercuric chloride was injected 9,446 times, the cyanide of mercury 327 times, the biniodide of mercury thirty-three times, and mercury ethylenediaminesulphate (sublimine) thirty-two times. Of the mercuric chloride the average dose was 0.02 gramme (4/15 grain), the minimum single dose of this salt was 0.0032 gramme (1/20 grain) and the maximum was 0.0455 gramme (7/10 grain). The average dose of the cyanide of mercury was 0.01 gramme (1/6 grain), of the biniodide of mercury 0.013 gramme (1/5 grain), and of the sublimine 0.016 gramme (1/4 grain). Besides these preparations I have used mercury succinimide, mercuric lactate, mercury sozoiodol, and the salicylarsinate of mercury intravenously; the combined limited number of injections of these salts, however, does not make it worth while to include them in this report. The quantity of contained mercury in these latter preparations is considerably less than in the mercuric chloride and besides their use offers absolutely no advantages over this salt.

The complications which attend the intravenous administration of mercury will be considered first, as the fear of these seems to be the primary objection against the adoption of this method. Before continuing, it might be advisable to state that an intravenous injection means the placing of the medicine direct into the circulation through a needle which has accurately punctured the vein wall and the point of which is free within the lumen of the vessel; under no consideration can an injection into the perivenous or cellular tissues or into a hæmatoma produced by a scratching, cutting, and tearing of the vein be considered as being intravenous. A successful injection is as "slick as a whistle," and the insertion of the needle requires but a few seconds' time and frequently less, any long, blind, and rough manipulation is always followed by some irritation. Unsuccessful attempts are most liable to occur in patients with loose folds of subcutaneous tissues or fat or markedly emaciated; in the latter the veins often slip from beneath the needle's point irrespective of anything which can be done to hold them.

A simple phlebitis followed after 208 of the injections, this slight complication was of no moment excepting that it was moderately painful and prohibited the use of the involved veins for several days. It seldom lasts over four to seven days and leaves no after effects. An obliterating endophlebitis occurred after forty-eight of the injections, this complication is slightly more painful and usually destroys the usefulness of the vein. It is most liable to occur when small veins are injected and occasionally for some unknown reason even in the larger ones. This obliteration does not always occur at the site of the injection but may be found a few inches further up the arm. A dissection of one of these veins showed a thickening of the vessel's wall which completely closed the lumen. An observation of several of these cases showed eventually a complete reestablishment of the lumen in some while in

others it was evident, although the small, hard, and pencillike mass had become absorbed, that the vessels did not regain their patency. The severest case of phlebitis after an injection followed the use of a two per cent. solution of mercuric lactate—this preparation is supposed to be one of the least irritating of the mercury salts.

The danger of embolism is entirely theoretic when the injection of a suitable preparation is truly intravenous. The medicines ordinarily used certainly do not produce a coagulum which is deleterious, as a syringe half full of a two per cent. mercuric chloride solution can be filled with aspirated blood and the whole quantity then thrown back into the circulation without the production of harm. In the face of recent experiments, the injection of air into the veins can be considered as being free of danger, but as it is a simple matter to remove all air from a syringe and needle, its entrance into the circulation never need occur. The use of a clean syringe and needle and a filtered solution assures that no solid particles are injected. The only way in which an embolism might occur is through the tearing or cutting of a vein and the injection made into an extravenous blood clot, a portion of which might break loose and enter the circulation; such an occurrence would be due to a faulty technique, not to an intravenous injection.

The fear of embolism is in all probability the "bogey man" of this procedure, as it is the only complication which might be productive of serious results. During the last two years I have made many inquiries and have searched nearly the entire literature in an effort to find any fatalities directly connected with the intravenous injections of mercury or other drugs. My search was fruitless with this exception: A physician was called to one of the hospitals of this city to examine a man evidently suffering from embolism of one of the cerebral vessels. It was stated that this man had entered a physician's office apparently in perfect health (?), that he was given an intravenous injection of some mercury solution, and that within ten or twelve hours after succumbed from an embolism due to the said injection. A post mortem examination was not made. Outside of this voluminous report I was flatly denied further information and nothing more could be dug out of an abyss of silence. Not knowing anything more than this about the case, I dare say that providing the injection was strictly intravenous it had nothing to do with the man's death.

The coining of the phrase "blood trauma" as a deleterious accompaniment to the intravenous injections of mercury seems to have been the grasping of the last straw in lieu of more tangible arguments aggressive to this form of treatment. The immaterial changes which do take place after an intensive course are more than counterbalanced by the material changes for the better after the treatment is stopped; the microscope will fully substantiate this statement. For a clinical verification it is only necessary to observe a case of luetic anæmia before and after the treatment.

Considering the intensity of this method of treatment it would seem that a renal irritation must be quite a frequent accompaniment yet the complete

opposite of this is true. A marked renal irritation occurred in only three of the 422 cases and was undoubtedly due to the preparation of mercury used, namely, the cyanide, which has a reputation of being a renal irritant. I attribute the infrequent occurrence of kidney irritation to the speed efficacy of the method, as a control over the disease is obtained before the kidneys have been poisoned by the drug.

Under proper judgment an acute degree of gingivitis is rare, in fact it is far less frequent than under the use of mercury either by mouth or by inunction. The forerunners of salivation, pains in the angles or rami of the jaws, if heeded, prompt a physician to decrease the dose and to inaugurate a proper local medication, thus avoiding an advancing disturbance.

A severe intestinal tenesmus, a simple diarrhoea, or even a bloody diarrhoea occasionally follow in the wake of the injections of mercury. These complications are usually sudden in their onset and vary in severity. Among the 422 cases a well marked bloody diarrhoea occurred in seven patients and lasted from two to twenty-four hours. The smallest amount which ever produced a severe bloody diarrhoea was 0.0097 gramme (3/20 grain) of the mercuric chloride given during twenty hours. A marked intestinal tenesmus with or without a simple diarrhoea occurred after less than one per cent. of the injections and exclusive of the inconvenience produced at the time was a matter of no moment. The patients with severe diarrhoea, especially those with a bloody diarrhoea, complained of a varying amount of depression but otherwise no serious results followed. Personally, I consider these intestinal disturbances the only bad feature connected with this form of treatment. The occurrence of a mercurial diarrhoea should always be met with full doses of the powdered extract of opium by mouth, hypodermic injections of morphine do not begin to be as effective.

As far as my experience has carried me, it is a noteworthy fact that all the patients having a severe simple or a bloody diarrhoea of sudden onset were under the influence of some saline cathartic taken either shortly before or after the injection was given. Almquist (3), after an extensive search, states: "Mercurial inflammations of the colon were the production of three factors; the action of the mercury, the action of hydrogen disulphide on the mucous membranes, and injury to the membranes." He asserts that "the gas generated by putrefactive processes causes erosions and loosening of the mucosa and is absorbed through these lesions, and, if the blood contains mercury a deposit of mercurial sulphate occurs in outer loops of the capillaries, their endothelium becomes coated with mercury sulphate, and the physiological functions are interfered with. Upon this follow nutritional changes, a partial paralysis and dilation of the vessels, the whole resulting in degenerative processes. The same chain of evidence could not be produced by other metals." Whether or not, this explanation of the pathogenesis of mercurial colitis is applicable to my statement that saline cathartics are contraindicated during an intensive mercurial course I am unable to state; clinical evidence, however, would lead to an affirmative belief.

Regarding the speed efficacy of this form of treat-

ment, I have no reason for modifying my statistics (4) published in 1906. The figures given then are probably more accurate than the ones derived from computations made from the number of injections cited in this article. The former paper dealt exclusively with ulcerative lesions of active syphilis and all cases were watched until a complete control had been obtained, this period averaged eighteen days. Deductions from the full number herein considered give an average of fifteen days for the obtainance of a control, but as some of the cases were exceedingly mild because of recent treatment, I prefer to accept the findings as stated in my previous paper. It can, however, be conservatively stated that fifteen to twenty-five days of intravenous treatment will fully control any lesions of active syphilis.

The exact curative value of the treatment is difficult to outline because of the limited number of patients treated, the lack of sufficient time for observation, and the insincerity and migratory character of many of the patients treated. The previous reference to a full term treatment, meant the administration of an intravenous course every two to four months over a period of one and one half to two and one half years, the intervals between these courses being covered by the intramuscular use of some insoluble salt of mercury or the administration of medicine by mouth. Rest from treatment, the use of iodides or tonics, was controlled by the same causes which would be competent for cases under some other method of medication. Of the twenty-two patients who completed this prescribed course (treatments finished before February, 1908) only one has shown a recurrence of his disease. This patient was difficult to control because of excessive drinking throughout the period of treatment, he regularly indulged in several drinks every twenty-four hours and at times would imbibe excessively for several days at a stretch. The case showing the longest period of freedom from any syphilitic signs since the completion of a full term treatment, stopped all medication over five years ago. Those patients taking only one intravenous course and then neglecting further treatment showed that the shortest period of freedom from symptoms was about nine weeks and the longest over five years. Although unable to draw any positive conclusions as to the exact curative value of the intravenous medication, it can, however, be emphatically stated that a single course of such injections carries more effective and therapeutic value than can be obtained in the same time from any other method of medication. When active syphilis is the factor to be considered they always will produce quick and favorable results.

Unfortunately, the intravenous use of mercury or of the iodides is considered a measure of last resort and as such is usually given the last trial in desperate cases. There comes a time in the life of many luetics when the obtainance of an improvement is impossible, in such cases nothing can be expected from intravenous medication. The time to utilize and get the good out of this form of medication is when recurrences take place because of the failure of other treatments to be effective and upon the recognition of what promises to be severe and dangerous lesions. It is my firm belief that intravenous

injections are of an advantage during any stage of active syphilis and in many cases presenting incipient parasyphilitic manifestations.

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- 42 MADISON STREET.

THE DIAGNOSIS OF RENAL TUBERCULOSIS.*

By A. P. CONDON, M. D.,
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The subject, renal tuberculosis, is one which has made great progress in the past two decades. Prior to this time, the disease was recognized, but only as a complication to pulmonary tuberculosis or as a sequence to some other tuberculous focus in the body. While it is true that it is frequently an accompaniment of pulmonary tuberculosis, recent study has demonstrated the fact that it can and does occur as a primary affection.

Tuberculosis of the kidney is most often observed from the fifteenth to the fortieth year, its frequency being about equal in the two sexes. It is insidious in its onset. The earliest and most constant symptom is frequent micturition, to which condition Tilden Brown has applied the term *thamuria*. Polyuria and dysuria also occur early, the polyuria usually being more troublesome at night. These three symptoms are, in the beginning, due to reflex irritation of the bladder; while later in the disease they are usually caused by pathological changes in the bladder itself.

Hæmaturia is observed in about one fourth of the cases. It, like hæmoptysis in pulmonary tuberculosis, often occurs very early in the disease. The hæmaturia may be excessive or it may be so slight as to be detected only by the microscope. When excessive, it may be accompanied by colicky pain resembling that produced by renal calculi. Hæmaturia occurs usually in that anatomical form in which there is a tuberculous ulceration of a papilla. It differs from the hæmaturia of renal calculus in that it is not produced or increased by motion and is not accompanied by the excruciating pain of calculus. Tuberculous hæmaturia resembles that kind usually classed as "essential." When spontaneous hæmaturia occurs in a patient past middle life, one must always keep in mind the possibility of its being the result of a malignant growth in the kidney. As to the renal origin of hæmaturia, aside from those cases in which there are blood casts of the ureters, the only way of determining the source of the hæmorrhage is by a cystoscopic examination.

In one of my cases, the patient had had continuous bleeding for six weeks and on entering the hospital was in a grave state of anemia. Tubercle bacilli were found in the urine and a cystoscopic examination showed the left ureteral orifice injected and ecchymotic, and blood coming from it. A

nephrectomy was done, primarily for the profuse bleeding which threatened the patient's life.

Pain is one of the most variable symptoms. It may be out of proportion to the involvement, or there may be complete destruction of the kidney with little or no pain having been present. On the other hand, it may be so intense that for that reason alone the patient seeks surgical aid. Tuffier has described this form as "painful tuberculosis of the kidney." The sensation of which the patient complains may be one of weight or dragging rather than actual pain, or it may be acute and lancinating in character. If the pain is intense, the diagnosis between a tuberculosis and renal calculus is most difficult. When blood is present, the differential diagnosis is even more obscure. It must be kept in mind, too, that calculus and tuberculosis may be present at the same time.

Besides the tenderness elicited over the region of the kidney, a number of referred tender points have been described which are of more or less diagnostic value. I shall not go into a description of these areas as they are common to all pathological changes in the kidney.

The kidney, when affected by tuberculosis, is usually enlarged but it may be atrophic and contracted; however, not much in a diagnostic way can be determined from the size of the organ. Sometimes the affected kidney is shrunken and the opposite one enlarged; the pain and tenderness being more marked over the enlarged one. These symptoms, together with the finding of the tubercle bacilli in the urine, have, on several occasions, given rise to the error of removing the hypertrophied kidney in place of the one affected by tuberculosis. In these instances only the clinical signs were relied upon and no ureteral catheterization was done. It is also necessary to remember in studying the diagnostic signs that a floating or a movable kidney is predisposed to tuberculous invasion.

When the ureter is involved by the tuberculous process, it can usually be palpated through the vagina or rectum. However, the fact that a ureter is palpable does not necessarily mean that the enlargement is due to a tuberculosis, for in women we may get an inflammation of the ureter by extension from the pelvic organs. Owing to the anatomical build of the broad ligaments, an inflammatory thickening of them produces a tension upon the connective tissue surrounding the ureters, thereby dragging upon them and making them more easily palpated. In order to know just where to feel for the ureters, it is well, when one has the opportunity, to study their exact location and relative anatomy with the catheters in position.

Pyuria is almost always present in a varying amount. It is such a constant and characteristic sign, that Albarran says, "if pyuria is not present, one cannot make the diagnosis of renal tuberculosis even though tubercle bacilli are found in the urine." A number of authentic cases have been reported where the tubercle bacilli have been carried through a healthy kidney from a tuberculous focus in some remote part of the body; so that the finding of a few isolated bacilli in the urine would not be positive proof of kidney involvement without other manifestations.

*Read before the Omaha-Douglas County Medical Society.

Intermittent pyuria may be observed; when present it is due to a stoppage of a ureter, or, what is more probable, to the rupture of tuberculous cavities into the pelvis of the kidney. Intermittent pyuria is quite pathognomonic of renal tuberculosis. The pyuria of renal tuberculosis differs from that caused by pyogenic bacteria in the fact that the urine in the former is not so foul smelling and does not decompose so quickly. A pyuria which microscopically shows none of the ordinary pus producing organisms is probably due to tubercle bacilli. The turbidity of the urine is sometimes affected by a change of position, being most marked in the upright. The urine from a tuberculous kidney is usually acid in reaction; the reason for which being that the bacilli of Koch do not cause a decomposition of urea. If the urine is alkaline it is due either to a mixed infection or to phosphaturia.

Albuminuria is very frequently observed. The amount of albumin present bears but little relation to the kidney lesion. It may be small in quantity and is often found in the urine from the sound kidney, in which instance it is thought to be due to toxic changes. It usually disappears after the removal of the diseased organ. It is well to bear in mind that gonorrhoea with its ascending tendency of the genitourinary tract, predisposes to tuberculous invasion.

With a patient presenting the usual symptoms of renal tuberculosis, one must verify the diagnosis by finding the bacilli in the urine in sufficient number to exclude the possibility of their origin being at some distant focus, the presence of which, after all, together with animal inoculation, are the only positive proofs of the existence of the disease. This is not so easy, and the fact that the bacilli are not found in the urine is not ample proof that they are not present, when the clinical signs point to the contrary. There is a difference of opinion as to when the bacilli are most likely to be found. Tilden Brown thinks they are most often present subsequent to a hæmorrhage. Tuffier believes they are more numerous and more easily discovered when there is marked pyuria. Albarran emphasizes the necessity of looking for the bacilli in freshly catheterized urine after it has been centrifuged.

The small, caseous particles should be carefully examined, and one should always examine many slides. When there is marked pyuria, it is a good plan to employ one of the digestive methods before examining for the bacilli. I have used a solution recommended by Pettit, which consists of pepsin scales, 2; glycerin, 11; hydrochloric acid, 10; sodium fluoride, 3; water, q. s. ad. 1,000 cubic centimetres. The urinary sediment is added to about one hundred volumes of the solution and then placed in an incubator at 38° C. for twenty-four hours. All the sediment is dissolved excepting the bacteria and the nuclei. If there are only a few bacilli this method makes it much easier to find them.

When the tubercle bacilli are found in the catheterized bladder urine, one must then determine whether they come from the kidney which shows clinical signs of the disease, from the opposite organ, or from both. Therefore a catheterization of both ureters must be done and the urine of each examined.

Tubercle bacilli may be confounded with other acid resisting bacilli, especially with the smegma, which they closely resemble. Methods of differential staining of the tubercle from the smegma bacilli are unreliable. By examining only catheterized urine, noting the morphology and arrangement of the bacilli, this error may be avoided.

It has been recently shown that in a local tuberculosis the bacilli are frequently found in the general circulation. This fact is of valuable aid in the diagnosis of renal tuberculosis.

The inoculation of a guinea pig with the suspected urine is another means of arriving at a diagnosis. The method advised by Kapsammer is, in my opinion, the best. It is as follows:—

The urine must be taken from the patient under absolutely aseptic precautions; the urine is then centrifuged or kept in a test tube and allowed to settle. After sedimentation has taken place, the clear fluid on the top is decanted off and the sediment used for injection into the guinea pig. Two guinea pigs should be used for one test, both of them getting intraperitoneal injections of from 0.5 to 1.0 cubic centimetre of the sediment. In one of the guinea pigs, 0.5 cubic centimetre of the sediment is injected into the inguinal region and the corresponding inguinal glands crushed between the thumb and finger. Ten days later the glands in the region into which the injection was made should be removed. They are usually found enlarged, but this does not prove that they are tuberculous. The glands should be examined histologically and for the bacilli. If this examination is negative one can not say positively that tuberculosis is not present, as one often finds in the slide only the signs of a subacute inflammation without specific microorganisms; while the intraperitoneal injections produce unquestionable tuberculosis later. If there is no tuberculosis the wound after the removal of the inguinal glands will usually heal promptly. If the material used for injection is tuberculous, then the wound will not close but will present walllike, elevated borders, and contain cheesy pus.

If the examination of the glands has been negative, then four weeks after the inoculation of the guinea pigs, a 0.5 c.c. of tuberculin (Koch's hoechst) is given hypodermically to each pig. Animals which have been infected with tuberculosis will die within the first twelve hours after the tuberculin injection. It is a rare exception that such an animal, if tuberculous, can stand the tuberculin in the amount mentioned, and only when the tuberculosis has made very slow progress in the four weeks. If the guinea pigs withstand the injection of tuberculin they are kept for several months before being autopsied. Occasionally one will find the tuberculous process developing so slowly that it may take this length of time for it to become evident.

In a suspected case of renal tuberculosis, if the tubercle bacilli have not been found in the urine from the catheterized ureter, I do not believe one is justified in performing a nephrectomy without first confirming the diagnosis by animal inoculation. The method I have described is positive in giving either the affirmative or negative evidence of the disease.

Tuberculin is a valuable aid in the diagnosis also,

After its administration, not only a general reaction is observed, but there is increased pain and tenderness in the region of the kidney if it is tuberculous. It is also thought that the tubercle bacilli are increased in the urine after its use.

In our study of renal tuberculosis the early vesical irritation and involvement makes it imperative that we study the bladder. The factors which have done the most toward aiding in the diagnosis of renal tuberculosis are the cystoscope (invented by Nitze in 1879) and later the perfection in the technique of ureteral catheterization.

In the early stages of tuberculosis of the kidney, even with marked vesical symptoms, there may be a normal cystoscopic picture. Later on there may be a picture of a mild cystitis, due to the irritation of the tuberculous urine, most marked around the ureteral orifice and the trigonum. When the tuberculosis invades the bladder, it usually appears in the form of miliary tubercles, and then later on the bladder becomes more generally involved and more extensively ulcerated.

When an indication arises for the removal of a kidney, for any cause whatever, the question which has long worried the surgeon is to know whether two kidneys exist, and if so, will the one be able to do the work after its fellow has been removed?

Until within the last few years, surgeons were content with the mere knowledge that a second kidney existed; to this end percussion and palpation was done, and sometimes an exploratory incision was made. Kocher advised opening the peritoneal cavity during the course of a nephrectomy, passing the hand to the opposite side and palpating the kidney, and if it was seemingly healthy to proceed with the operation.

The presence of an anatomical kidney means little. Its parenchyma may be destroyed or so altered that it is incapable of functioning. In testing the functional activity of a kidney "not only the elements found in the natural course of metabolism" are considered, but foreign substances must be used in order to study more accurately the kidney elimination. Among these are methylene blue, indigo carmin, sodium salicylate, potassium iodide, and phloridzin. Besides these chemical agents, there is cryoscopy and experimental polyuria.

The phloridzin test was first used by von Mering in 1885. It is the most simple and most accurate method. It is very easily followed out as practised by Kapsammer. It depends, not upon the amount of sugar excreted in the urine from the kidney under observation, but upon the time of its appearance. Ten milligrammes of phloridzin is used at one injection. In a kidney capable of doing normal work, the sugar appears in from fifteen to thirty minutes. If it appears in not later than thirty minutes Kapsammer does not hesitate to remove the affected organ. The more involved the parenchyma of the kidney is, the more delayed will be the appearance of the reaction.

Albarran and his school lay greater stress upon the amount of sugar excreted than upon its time of appearance in the urine and advise the use of this test in conjunction with the induced polyuria. The feature which recommends the phloridzin test is the fact that its action ceases in from three to four hours and the catheters can be left in place during

this time. Albarran believes that one gets the best idea of the functional capacity of a kidney by increasing its work within physiological limits. He calls this experimental polyuria. This is based upon the law that: "The affected kidney has a much more constant function than the normal organ; its function varies less from time to time, in proportion to the amount of parenchyma destroyed." In other words, a diseased organ has not the physiological range which a normal one has. This law is general and is applicable to all organs of the body. To increase the function of the kidney, the patient is given a large draught of water to which has been added a simple diuretic. A comparison of the urine before and after its administration is made.

A catheter is inserted about ten centimetres into the ureter of the diseased kidney and an ordinary urethral catheter inserted into the bladder. Fifteen minutes is allowed for the bladder to become empty and the ureter to become accustomed to the catheter. He then collects the separate urine during four to six consecutive half hours. At the end of the first half hour the patient is given to drink a pint of hot water to which has been added two drachms of the fluid extract of triticum.

The first quantity of urine collected, care being taken to keep the urine from each kidney separate, serves as a means of comparison for a study of the modification of the urine as it is collected at the end of each half hour. The quantity of the urine increases after the absorption of the water, especially noticeable at about an hour and a half, when the maximum is reached. Too much water should not be given, as it is not desirable to keep up the polyuria very long. The amount of sugar, urea, and sodium chloride should be estimated in each sample, making a comparison between the two kidneys. The age, sex, body weight, and activity of nutrition will somewhat influence the polyuria. The technique employed by Albarran for the polyuria test is this: A ureteral catheter is placed in the ureter of the suspected kidney, and an ordinary urethral catheter into the bladder; thus the urine from each kidney is collected separately.

I have found that by this method it is impossible to prevent a leakage into the bladder from the catheterized ureter; and when both ureters are catheterized, there will be more or less leaking into the bladder from both sides, which fact destroys the accuracy of the test. This leakage takes place even when a No. 7 olive tip or open end catheter is used, and is more likely to occur on account of the increased amount of urine at this time. In doing the polyuria test of Albarran I have used the Luys's separator instead of the catheters, and in the majority of the patients this can be used and *all* of the urine from each kidney collected separately. In the polyuria test, only by obtaining *all* of the urine which is secreted from each kidney, can one determine their functional capacity.

In conclusion: The diagnosis of renal tuberculosis is based upon the clinical manifestations, the history of some previous tuberculous invasion, and the study of the symptoms referable to the kidney and bladder. But the essential elements in the diagnosis are the finding of the bacilli in the urine from the affected kidney and the verification by animal inoculation.

A NEW TREATMENT OF LOCOMOTOR ATAXIA,
BASED ON A NEW THEORY OF THIS DISEASE.*

By A. HEYM, M. D.,
Chicago.

In reference to the aetiology of *tabes dorsalis* the Wassermann's test has given the positive proof of the syphilitic nature of this disease. But we are still in ignorance how the pathological changes of the nerve tissue gradually develop. We presume that these alterations are caused by toxins or by similar substances which circulate within the human system, but we do not know anything definite about the way, in which these toxins attend to their destructive work, neither do we understand why sensory conducting paths are principally involved.

I am of the opinion that the destruction of the nerve tissue is not due alone to the toxins circulating in the blood, but to the toxins contained in all the other fluids of the system. Therefore the toxins in the lymph and in the cerebrospinal fluid are also concerned in this destructive action. The cerebrospinal fluid appears to me to be the active and destructive element in tabes in consequence of its toxic condition, as it seems to be very probable that this fluid, perhaps on account of its slow circulation, is the more saturated with toxins than the blood or the lymph.

It is known that the ganglion cells of the spinal ganglia are the trophic centres of the sensory peripheral nerves and of the posterior roots and their prolongations. The spinal ganglia are in direct communication with the subarachnoidal space by means of lymph paths, and a part of the cerebrospinal fluid flows off in this way. In consequence of this we can see that from the beginning of the disease the nerve tissue of the spinal ganglia is exposed to the toxins of the liquor cerebrospinalis. Owing to this influence the ganglion cells will be changed pathologically at first in their functions and later on in their structure. The functional change is sufficient to lower the resistance of the nerve fibres. The sensory peripheral nerves degenerate because they are exposed to toxins circulating in the system; the posterior roots degenerate, and in a much more pronounced manner than the peripheral nerves, because they are surrounded by the cerebrospinal fluid in the subarachnoid space. The degeneration of the posterior column is the remote result of the degeneration of the posterior roots.

The motor nerves probably have the power to resist longer than the sensory ones, because their trophic centres are located in the gray matter of the spinal cord, and the cerebrospinal fluid does not seem to come into such intimate relation with the compact matter of this organ, perhaps on account of the protection of the pia. Only in the final stages of tabes do we find that the trophic centres of the motor nerves slowly become affected because of the cerebrospinal fluid, entering more profusely into the gray matter perhaps by way of the lymph paths of the posterior column.

Therefore we find in the paralytic stage quite often a degeneration of the motor nerves and a general atrophy of the muscles. This also explains the partial atrophies of muscles which sometimes

appear early and which were considered erroneously as an ascending neuritis by Dejerine.

The pathological changes of the cranial nerves originate in the same way; before the nerve fibres succumb to the attacks of the toxins their trophic centres must have been impaired. The nuclei of the motor cranial nerves are influenced from the ventricles. If we consider the location of the most frequently affected nuclei, we find that the same are situated almost immediately under the ependym of the ventricles and the aqueductus Sylvii. They are thus directly accessible to the liquor cerebrospinalis. Nuclei, which are relatively distant from the ventricles as for instance the nucleus of the nervus facialis, become diseased in exceptional cases only.

The sensory roots of the trigeminus and vasoglossopharyngeus are influenced in the same way as the spinal ganglia. The nervus opticus, however, is affected in a somewhat different way. The trophic centres of the nerve are located in the ganglia cells of the retina which is influenced by the cerebrospinal fluid in the following manner: The nerve, when it leaves the subarachnoid space, is surrounded by a dura sheath which includes a lymph space. Through this space the cerebrospinal fluid is in contact with the bulbus. It is very characteristic that the peripheral fibres of the nerve degenerate first, and that the degeneration progresses slowly toward the centre.

Reviewing these conditions we shall see that the theory of the destructive influence of the cerebro-spinal fluid upon the different nervous elements explains in a surprisingly easy manner the pathological changes of tabes.

The correctness of this theory has an immense practical value. If the toxins of the liquor cerebrosplinalis are the destructive agents in tabes it is a problem of the therapy to try to destroy or neutralize these toxins where they are most abundant. The most simple way to produce a result of this kind is to inject into the subarachnoidal space a substance that has the effect of eliminating or neutralizing, perhaps, the toxins without irritating the brain and the spinal cord. If my theory is correct symptoms like shooting pains which are according to my opinion the consequence of the active work of the toxins in the spinal fluid, should disappear after the injection of such a substance as I have alluded to.

With the exception of injections of Flexner's serum in cases of cerebrospinal meningitis a treatment of this kind never having been tried before, I had to perform a great number of experiments upon animals. It was necessary not only to find a substance of such qualities as I mentioned but also to study experimentally the question of the influence of the cerebrospinal fluid upon the central nervous system. I performed these experiments in the physiological laboratory of the Chicago College of Medicine and Surgery with the aid of my assistant Dr. Walkup. As I intend to report these experiments in another place I will only mention briefly that I injected into the subarachnoid space of dogs and rabbits 1 or 2 c.c. of a two per cent. solution of methylene blue. I chose this substance on account of its inclination to be absorbed by the living ganglion cells and axis cylinders. The experiments gave very positive results in regard to the in-

*Read before the Chicago Neurological Society, October 21, 1909.

fluence of the cerebrospinal fluid upon the different elements of the nervous tissue and in regard to the way the cerebrospinal fluid circulates through the spinal cord.

Among the substances which favor the destruction of toxins without having an injurious effect on the nervous system cacodyl preparations seem to be the best ones, but I must say my experiments are not yet completed, and it seems to me not improbable that a remedy still more specific will be found. For the injections into the subarachnoid spaces of my patients I have used exclusively Clin's sodium cacodylate, put up in sterilized vials, each vial containing 0.05 arsenic in 1 c.c.

It is not necessary to dwell on the technique of the injection as it is the same that is used in making a lumbar puncture. It makes no difference into which vertebral space the injections are made, the frequent repetitions making it necessary to change the place. To avoid all disagreeable effects, I never drain off any cerebrospinal fluid. After a little practice one distinctly feels when the needle enters into the subarachnoid space. I have always performed the injection by putting the patient on his side; after the injection the patient must retain the recumbent position from one to two hours. I inject 1 c.c. every second or third day. Nineteen cases have been treated by me in this manner, twelve cases of tabes and seven cases of mental paralysis. None of the patients showed, after the injection, any of the symptoms commonly found after lumbar puncture. On the contrary, the condition of the patients after the injections was always very good.

The beneficial effect of the injection which I expected appeared promptly after the third or fourth injection in every case with two exceptions. The pains originating from the roots were greatly reduced and finally disappeared almost entirely. But we have to distinguish two different varieties of pain in tabes. First the lancinating or shooting pains. These are according to my opinion the result of the activity of the toxins contained in the cerebrospinal fluid. The second variety, the neuritic pains, remain more or less constantly in the same location of the body and are very often associated with tenderness of the overlying parts. These pains are the consequence of toxins circulating in the system (in the blood, etc.), and consequently they do not disappear so promptly as the other kind, but they were also diminished to such an extent that all the patients showed improvement after the injections. As the cacodylate has no antineuralgic properties the disappearance of pains can only be explained by the destruction or neutralization of the toxins contained in the cerebrospinal fluid. This presumption is also supported by the following experiences. Before I began with injections of cacodylate I have tried on the first of my patients injections of 1 c.c. of a one per cent. solution of methylene blue, without getting the slightest result.

As the first case treated had very interesting features I desire to give a brief history of it:

CASE I.—The patient was forty-seven years of age. When he entered the Alexian Brothers Hospital he was in the paralytic stage of tabes. Weight eighty-six pounds. Blood 2,840 reds, 5,500 whites, seventy per cent hæmoglobin.

bin, Wassermann's reaction positive, Argyll-Robertson pupils; Westphal and Romberg symptoms, and analgesia were present. He was completely atactic in the upper and in the lower extremities. I had this man under close observation for six weeks in the hospital before I began the injections. The patient was in constant torture from severe lancinating pains through the entire body, he also suffered from a constant burning sensation in the rectum, culminating in very severe rectal crises during the night. He was really in a pitiful condition. Nothing would relieve him, except morphine, which would give him a few hours' rest. After the second subarachnoidal injection the pains were very much reduced, after the third injection he slept for eight hours, after the fourth injection the rectal crises disappeared entirely. His present condition after twelve cacodyl injections is as follows: The shooting pains have disappeared entirely, he has only an occasional neuritic pain, which is mild in character and of short duration. He has not had a return of the rectal crises. The burning sensation in the rectum is the greater part of the day entirely absent, and if perceived at all, of a very mild character. The ataxia of the upper extremities has disappeared almost entirely, he is able to write and to feed himself, neither of which functions he had been able to attend to during the nine months previous to the treatment. The ataxia of the lower extremities is still present, but improved, and that without any Frenkel treatment. Before I commenced the injections he was just able to stand on his feet with the aid of two canes, but could not walk. Now he is walking fairly well with the aid of one cane. His appetite and his general condition are still poor, he has gained a few pounds only.

He did not receive any treatment other than the cacodyl injections, except that for about two weeks I gave him a saturated solution of potassium iodide on account of his occasional neuritic pains. As this drug does not transmute into the cerebrospinal fluid such treatment could not influence the result of the cacodyl injections.

I want to mention briefly another case interesting in some respects.

CASE II.—The patient was thirty-four years old and was in the initial stages of tabes. Wassermann's reaction positive. He had Argyll-Robertson pupils, analgesia with shooting pains in the lower extremities. He was not atactic and did not show Romberg's symptom. The knee reflexes were present, on the left side somewhat increased. Bladder and rectum normal. I had this man under close observation for two weeks before I began the injections. During these two weeks of observation I noticed the following condition: Every second or third day the daily lancinating pains culminated in very severe, crisislike, attacks. During such attacks the patient suffered from extreme exhaustion. The morning succeeding such attacks I could always observe a decrease of the right patella reflex. At the end of the second week the right reflex was very weak, nearly lost, the left patella reflex remained the same as before. At the beginning of the third week I began the injections of cacodyl; now the pains diminished and the attacks disappeared in the same manner as in the first case already described. But it is important to notice that before I commenced with the injections the right knee reflex decreased day by day. The normal pathological course should have been, that within a short time the right reflex should have entirely disappeared and the left reflex action should be somewhat modified. However, both reflexes remained and still remain the same as since I first began my injections. Therefore the conclusion seems to be justified, that by virtue of the injections the disease has come to standstill, which fact objectively can be proved. Of course it is impossible to predict whether this arrest of the disease is to be permanent.

The last patient under treatment has had up to the present time six injections only, but he is still suffering from pains. His is the first case, so far, in which I have not had the usual favorable result. Of course it is quite possible, even probable, that the pains will disappear after some further injections, but it is also possible that the following circumstances explain his refractory condition. The patient had suffered from pain during fifty years, he had been atactic for eight years and during that

time had been under my constant care. Through administration of Frenkel's treatment the atactic condition was so much improved that for the last seven and a half years the patient had been able to attend to business. During that time the disease had not been a progressive one, although the pains were constantly present and sometimes very severe. The pains were seldom lightninglike, they had always more the character of neuritic pains. At the present time the pains are again characteristically neuritic. They are the consequence of the circulation of toxins in the system, and for that reason we cannot expect an immediate result. The neuritic nature of his disease seems also to explain the fact that the patient has grown no worse in seven years. All progress of the disease is, in my opinion, the consequence of the active work of the toxins floating in the cerebrospinal fluid. Cases like this one, therefore, in which the cerebrospinal fluid does not seem to be overlaid with toxins do not seem to have a progressive character in as long as this condition prevails.

Reviewing the results of my twelve cases I think I am entitled to say that the subarachnoidal injections of cacodyl have a very well defined effect upon all symptoms that are the consequence of the active work of the toxins contained in the liquor cerebrospinalis. But how long the effect of the injections will continue to inhibit the accumulation of toxins in the cerebrospinal fluid, after the injections themselves are stopped, we do not yet know. Then also, the pains which come from a neuritic condition of the sensory nerves have in some of my cases remained unchanged. In certain pathological conditions therefore, an additional treatment that should destroy the toxins in the blood will be necessary. Intravenous injections of bichloride of mercury irritate and increase the pains. I am not prepared to say anything definite about intravenous injections of cacodyl, because I used them only in a few instances, guided by the idea to avoid everything that could obscure the effect of the subarachnoidal injections of cacodyl. Saturated solution of potassium iodide given internally seemed to have a very soothing effect on the neuritic pains.

Whether the cacodylate injection in the subarachnoidal space is able to influence the atactic condition is now too early to say. Of my twelve cases three are in the initial stage, and these patients are not atactic, but nine are atactic. Two of these atactic patients show a marked improvement in the function of the lower extremities, a third, an improvement in the function of the lower extremities, and a much greater improvement in the upper extremities. The other six atactic patients are so far, as the ataxia is concerned, in an unchanged condition. It is not to be expected that a symptom which is partly the consequence of the degeneration of certain parts of the nervous system, will be influenced to a great extent by the cacodyl injection.

For cases in the initial stage this treatment seems to give a hopeful outlook. I do not consider it impossible to finally eliminate entirely the toxins by beginning this treatment in the early stages of the disease, and thus furnishing a chance for installation of the impaired functions. I will, however, say that I consider my treatment only as the initial

step in the direction of a new therapy. I believe that the same will have to be elaborated, but I am convinced that the principles of this treatment will finally lead to the desired goal.

34 WASHINGTON STREET.

OBSERVATIONS AND STATISTICS ON SIXTY THOUSAND LABORS, OCCURRING IN THE SERVICE OF THE SOCIETY OF THE LYING IN HOSPITAL OF THE CITY OF NEW YORK.*

By JAMES W. MARKOE, M. D.,
New York.

The following statistical report covers a period of twenty years, during which time marked strides have been made in the technique and general management of obstetrical cases. It is therefore obvious that a comparison of the work of the first ten years must show different percentages from that of the last decade. It has been deemed wise to present the tables compiled from both the out door and in door cases, simply as found in the records of the institution. In addition the causes of death have been given as an aid to those who care to study the different classes more in detail, but no comparison has been made with similar work in other hospitals. As in a search of the literature, no statistics have been found, covering so great a number of cases, it was impossible to combine several together on account of the varying methods of compilation used by each institution.

In the 60,000 confinements, the number of children born was 60,878, with a maternal mortality of 0.94 per cent. These maternal deaths have been classified under the following headings: Diseases of heart and lungs; diseases of the kidneys; diseases of pregnancy and the puerperium; and miscellaneous.

The following analyses are given as fully as possible without making it too cumbersome:—Vertex, breech, shoulder, face, and brow presentations, cases in which it was impossible to ascertain the presentation, plural births, displacement of fetal parts, induction of labor, forceps, podalic version, placenta prævia, Cesarean section, vaginal Cesarean section, craniotomy, symphysiotomy, hebosteotomy, hydatidiform mole, abortion, ectopic gestation, and surgical complications and sequelæ.

20 WEST FIFTIETH STREET.

CLINICAL REPORT OF A CASE OF HERPES ZOSTER OPHTHALMICUS INVOLVING THE FIRST DIVISION OF THE LEFT FIFTH NERVE.¹

By CHARLES A. OLIVER, A. M., M. D.,
Philadelphia.

CASE.—On the first day of January, 1906, an intelligent, forty-five year old, laborer, who never had been addicted to the use of alcohol and tobacco, and who had not taken any drugs, came under my care in the eye wards of the Philadelphia General Hospital. He had been always free from worry, any influencing avocation, disease, and dyscrasia, and had not any history of exposure or traumatism.

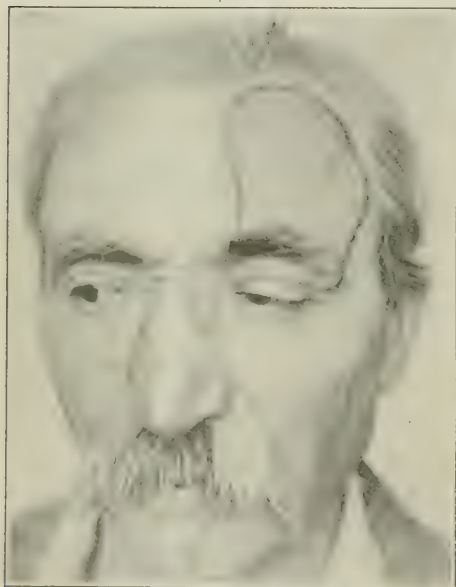
*Abstract of paper presented at the Budapest Congress.
¹Vide *Philadelphia General Hospital Reports*, vii.

He was suffering from an inflammation of the conjunctiva of the left eye, with a series of sensitive vesicles situated across the left side of the forehead, which had suddenly appeared, without any assignable cause, some six weeks previously. At the time of the primary attack, he had had a sudden diplopia of esophoric type, and a localized neuralgia and redness with subsequent vesiculation which was confined to the left upper lid and corresponding forehead. At times, there were exacerbations of pain confined to the left eye, which were so severe as to prevent sleep. Not infrequently, the pain, which was made worse by pressure, was most intense at the point of emergence of the nerve trunk.

As a result of appropriate treatment, these conditions lessened, leaving a rather large area of numbness.

When I first saw the patient, I made a careful physical study which proved negative as regards any causative general disorder or local disturbance, except that at times the urine showed a few blood corpuscle elements. There were not any other evidences of the disease, and not any ordinary herpetic vesicles or history of the same throughout the body.

Locally, there was a slight inflammation of the Morax-Axenfeld diplobacillus type in the left conjunctiva, which quickly responded to appropriate treatment. In a few days time, the vesicles on the forehead became less painful, and



The patient, showing the area of numbness, and the vesicles on the forehead.

commenced to dry under the use of an ointment of ichthyol. Careful esthesiometric study showed a well defined area of analgesia with scaly papules, representing quite accurately the peripheral distribution of the upper branch of the left fifth nerve; the analgesia being the most pronounced nearest the upper trunkal extremity.

Careful examination of the nose and accessory sinuses failed to reveal anything abnormal.

Under the use of a lotion of zinc sulphate and potassium sulphide, with biweekly applications of the galvanocurrent, the affected portion became less analgesic and apparently not so extensive. At this time, the area of impaired sensation, as outlined by the patient himself, equalled the position and the size shown in the accompanying reproduction of a photograph kindly taken for me by Dr. Ross V. Patterson, the assistant chief resident of the hospital.

There were also an irregular series of reddish, blood stained papules, each about the size of a pea, over the left side of the forehead, the papules somewhat resembling

acne rosacea. They did not respond as readily to treatment, and the affected area was not numb like that of the forehead and upper lid.

There was not any anesthesia of the cornea, the membrane being transparent throughout. The conjunctiva was not quite as responsive to sensory irritation at the outer canthus, as that of the right eye. There was not any change in local temperature in the two conjunctival cul-de-sacs. Intraocular tension in both eyes was normal.

The pupils were round and equalled three millimetres in horizontal diameters. The irides were freely mobile to light stimulus, accommodative action, and efforts for convergence. The media were clear, and the eyegrounds were healthy, there not being any vascular dilation or lymph stream disturbance. Corrected vision with the right eye was normal, while that with the left was slightly lessened. At first, there was some general and local pyrexia, with local hyperaesthesia, which lessened as the rash appeared, to later rapidly disappear. Both the deep and the superficial reflexes obtainable throughout the body were normal. Station was good. The fields of vision for form and color were properly and relatively sized and shaped. There was not any subjective and objective evidences of disturbed exterior ocular muscle equilibrium, and there was not any want of muscular action in either the bulbar or the palpebral muscles.

At the present time, two and a half years later (July 1908), there has not been any recurrence. The affected tract is profoundly scarred, depressed in places, and parchmentlike toward the upper median line. Fortunately for the most part, it is coarsely aesthetic, though the patient is not able to appreciate slight thermometric changes throughout the entire extent. At the lower, outer, proximal margins of the area there are points which, while not tender, are somewhat painful at times, particularly when barometric pressure is low. There are not any electric proofs of facial muscle weakness or spasm. The eyeballs have preserved their integrity and function properly in every detail.

Remarks.—The case is offered not only for its many points of clinical interest, in its comparative rarity, its appearance in the more usually affected male, though without apparent cause, and rather late in life and with its associated severity in such cases, its usual unilaterality, its probable singleness of attack, its direct relationship with the peripheral distribution of a central nerve area, and its appearance in the most commonly affected portion of the trigeminus, but as a contribution to the anatomical distribution of both the neural and the lymph channel elements of the affected parts, the invasion of the vesicles by extraneous bacteria of pyogenic origin, the fortunate but slight involvement of the ala of the nose, with the probable resultant integrity of the cornea and the entire bulbar contents, the normal condition of the retinal and choroidal circulation, the implication of the conjunctiva, especially in its temporal portion, the probable temporary paresis of the corresponding external rectus muscle (possibly nuclear in part), the time of year of its occurrence (in November), and above all, the hæmaturia, which most probably showed that the affection for which the patient came was secondarily dependent upon an accidental hæmorrhage into the corresponding posterior root ganglion or related portion of the Gasserian ganglion, which gave rise to a local active inflammation which extended to the point of emergence of the nerve at the side of the pons; a local ganglionic pathological expression of some obscure general hæmorrhagic dyscrasia, which has been so devoid of coarse clinical expression that the true etiology of the case can be only settled by autopsy; a plan of procedure which should be pursued in each individual case whenever possible until sufficient data for generalization have been obtained to be authoritatively studied.

1507 LOCUST STREET.

SOME OBSERVATIONS ON CERTAIN PATHOLOGICAL QUESTIONS CONCERNING THE MUTILATIONS REPRESENTED ON THE ANTHROPOMORPHOUS HUACOS POTTERY OF OLD PERU.

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I am in receipt of the following interesting letter from Dr. Julio C. Tello, of the Biblioteca Nacional, Lima, Peru, which I have translated from the Spanish:

Dr. Albert S. Ashmead,
New York.

LIMA, JUNE 7, 1906.

MY RESPECTED FRIEND—With greatest pleasure, I read your very agreeable communication, dated April 16, by which you inform me that you have received my work *La Antiquedad de la Sífilis en el Peru*. I took the liberty of honoring my work by attaching your name on its first page, confident, as you had so bountifully and with so much scientific interest occupied yourself with the autochthonous pathology of my country, that you would see only in it love and veneration which I professed for your illustrious name.

Without any doubt, my work contains very little of importance to what has been written on pre-Columbian syphilis, and without any doubt also, to what relates especially to Peru. Incalculable are the difficulties of diverse nature that, in my country unfortunately yet present themselves to the undertaking, even superficially, of this class of investigation. The lack of literature respecting it, the lack of publications, American and European, so scarce even in these times, and the specific collections, and these only in some scientific centres, give to the majority of the writings, like mine, the seal of deficiency and mediocrity. Notwithstanding, I have been able to investigate a part of the documents and archives of the colonization, that the Biblioteca possesses, and the papers of the monasteries as well as to thoroughly examine the skeleton remains which are found in the ancient Peruvian tombs. I have had, too, the good luck to form an anthropological collection, while excavating for some years in ancient habitations and tombs. The crania of my collection offer an infinite variety of lesions, unequivocal traces of divers traumatism, pathological processes, and surgical interventions.

Only a few days have elapsed since I closed my study at the medical school, and as you may readily understand, my knowledge of the subject is very moderate, so

that I do not consider myself capable to undertake a trustworthy study of my collection. I hope, therefore, that at no distant day I can find time to extend my knowledge in Europe or the United States, so as to undertake, better prepared, the study of this valuable collection, whose aggregation has cost me many toils and penuries.

Conformably with a law or regulation of my country for the sending of physicians to foreign parts, in order that they may perfect their study, I am elected by the faculty of medicine; but owing to poverty, which has become accentuated in the last few months, my voyage to your country, in all probability, must be postponed indefinitely.

On my own account, to terminate my study, I have thought to send the most interesting examples of my collection to New York, so that you could be able to examine them. This I could not do before. I hope in three months more, if my voyage does not materialize by September, to send you those specimens which I believe offer greatest interest for science.

Your opinion on the theory which I developed in my book, *La Antiquedad de la Sífilis en el Peru*, interested me

very much. I, therein, come to the conclusion that the mutilation found in the huacos can not be attributed to *uta*, and much less to surgical treatment. It appears to me, if you will permit me to express my opinion in this respect, that the hypothesis supported also by you, to attribute them to syphilis, has greater foundation. Moreover, if the mutilations are of luetic origin we can accept surgical intervention, as well as *fashion*, attributing its employment to the primitive *Curanderos* of Peru.

My companion and friend, Dr. Palma, will answer you about your ideas expressed in your letter. Dr. Palma and myself have written on the diseases pictured on the ceramics. We possess some photographs and huacos pertaining, the majority of them, to the collections of Gaffron and Hoyle, in which are encountered most beautiful examples, that we believe are of great interest. The photograph of an amputated huaco, which I herewith enclose, will give you some idea of these collections. Dr. Gaffron possesses an excellent huaco representing paralysis of the facial nerve.

If I could induce you to reproduce these photographs we might save much time in solving this problem, and we would owe you once more our eternal gratitude.

Lately I have read of a work on *Espundia*, which Dr. Sagarnaza, of Bolivia, has had the kindness to send to me. I have thus acquired some knowledge of the aborigines in the mountains of Peru.

Sututu, Jucuya, Hichu, etc., of which I shall write you in my next letter. I shall also send some copies of my book, which I would ask you to present to some of your friends, or to send to some medical periodicals of the United States.

There has died on the 20th of this month Dr. Manuel O.



FIG. 1. Ancient Peruvian huaco pottery.

Tamayo, the writer of the monograph *La Uta en el Peru*, which he sent to you. Although very young, his studies in Peruvian verruga have been very celebrated and won applause. He is lost and is mourned by the medical profession of my country.

The huaco which Dr. Palma studied in his thesis and which has both arms amputated, is not of great importance. I have seen some others like it, and, according to Dr. Gaffron, whose authority on these points is unquestionable, these models are not rare.

The photograph I here enclose shows undoubted amputation of an arm.

With respect, your affectionate friend and servant,

JULIO C. TELLO.

I print here the evidence of pre-Columbian amputation of an arm:

In a publication of mine, in the *American Anthropologist*, ix, No. 4, October to December, 1907, entitled *An Ancient Peruvian Effigy Vase Exhibiting Disease of the Foot* I expressed myself as follows: "As already implied, I have never seen represented on the huacos potteries of ancient Peru, amputation of the hands or of one hand. This seems strange, for the hands as well as the feet would naturally have been attacked by the insect carriers of disease. As clearly as I can explain it, the circumstance of absence from the pottery of human figures lacking one or both hands may be accounted for thus: The ancient Peruvians believed that the soul took four days to journey from the grave to its future abode. Hence food and especially drink in that dry climate were requisite, and these therefore were buried with the

corpse which needed its hands to reach out for them. If the natural hands were mutilated they would not be so represented on the soul (or clay image) of the departed, but artificial hands would be given him; otherwise he might die of hunger or thirst on his trip to Paradise. But this is a problematical explanation. I should like to know whether any European anthropologist has ever found on the mortuary earthenware of Peru evidence of mutilation (amputation) of the hands."

I sent copies of this publication to various correspondents in Peru where my work for the past twenty years on these problems, the interpretation of the pre-Columbian diseases as depicted or modeled on the mummy grave pottery, is fully known. Dr. Ricardo Palma then kindly sent me a photograph of a huaco wine or water bottle, found buried

with a mummy, which showed absence of both arms just above the elbow joints. This was a beautiful specimen of the potter's art. It represented an unusually noble looking man. His Roman nose was finely chiseled, his eyes were perfect, the vault of forehead was intensely brainy looking, the lips were firmly set together, showing power and strong will, the chin was full of character. The body was shown clad in white shirt, the sleeves of which were sharply cut off, just above the elbows, the arms as viewed in the photograph seemed to have been cut squarely off, through loosely hanging sleeves, with a saw, or sharp knife. Dr. Palma wrote that by turning the original image on its back, one could see clearly apparent stumps represented, beneath the overhang-

ing sleeves. There was a belt about this man's waist, beautifully wrought in strange figures. It might be that the arms were removed by the potter merely to show the figuring on the wide belt, which might have been his insignia of rank. The man's face showed him to be a noble or a person of great power. But then there was Dr. Palma's positive statement that the stumps were visible beneath the represented sleeves. There was no evidence of disease whatsoever represented on the face. Now, in every represented amputation of one or of both feet, in every museum of the whole world, there is always shown some disease or mutilation of nose or upper lip. Yet here was a represented figure with both arms off, if not really amputated, showing no accompanying disease of the face whatsoever.

I have always contended in all my articles on this subject, published in the *Verhandlungen der Berliner anthropologischen Gesellschaft* or in the *La Plata* (Argentina) reports and in all my American publications, that it was probable that the same diseased condition as was represented on the faces of these clay figures, with accompanying evidences of pre-Columbian amputation, had required mutilation of the foot or feet, and always at the tibiotarsal articulations. Did this image, then, without any evidence of disease in his face, have a double amputation performed at or above the elbow joints for something other than disease? And if so, what could have required such in one so noble looking, a probable leader or chieftain? Had he been captured and mutilated thus, when deprived of his pos-



FIG. 2. Uta, of three months' duration, involving nose, chin, and angles of lips.

sessions or power? He does not look in the photograph which I have published in the *American Anthropologist* like a criminal, so it is impossible to believe from it that the Carrasquillo theory is true; that these amputations were really performed as punishment for crime. Rather is it more plausible to believe that this man was so mutilated as a prisoner of war. Yet, until I have viewed the original figure itself and had an opportunity of studying the signs which Dr. Palma accepts at once as evidences of "amputation," I may be permitted to doubt that it represents amputation at all. These doubts I

On these debated questions as to the mutilated anthropomorphous huacos potteries among others two capital points are always to be considered which are not yet explainable. First, why the amputations of the lower members, according to the artists who have sculptured the huacos, are always limited to the tibiotarsal articulation, when the diseased condition as represented on every one of the faces so mutilated might attack, just as well, the legs, forearms, or hands of the Indians. Physicians all see to-day practised in Peru this surgical intervention for the relief of disease of hands, forearms, and legs; and



FIG. 3.—Four cases of early uta; nose, upper lip, and cheeks involved.

wrote about at once to friends of mine in Peru. Dr. Palma says of my expressed theory:—"Dr. Ashmead has put forth an hypothesis which at first sight is convincing as explanation, why in the anthropomorphous clay vessels found in the tombs of ancient Peruvians there is never represented amputation of the arms. But he says those Indians would never think of putting in their tombs anthropomorphous huacos representative of servants. All the historians agree that when they gave sepulchre to a person they jointly interred with them their servants to continue to serve them as they had done in life."

amputation of hands or feet for snake bite is practised by the *Curanderos* on the very ground where one is bitten. "If a snake bites any one on the hand," says Gumilla (*El Orinoco Ilustrado*, Tomo ii, Cap. xii, Madrid, 1741), his companions at once cut off the hand; and the foot, if it is bitten." Second. Why do these clay figures so well represent the blind, the crippled, etc., and do not show models without upper members?

Dr. Palma says: "Dr. Ashmead has given in his last work a reason for the nonobservance of representations of the handless among the huacos: 'As

we all know,' says Dr. Ashmead, 'by the chroniclers, the huaco was the facsimile of the subject interred, a duplicate of the soul, in whose immortality they all believed. These figures were more especially wine or water bottles containing drink, which was put there near the hands of the departed, so that he might quench his thirst on his four days' travel to the other world. Now, if the subject interred had no arms by having suffered amputation of them in life he could not raise to his dry lips, when fatigued on his journey, the drink that his relatives had supplied for this purpose, and the facsimile of the individual could not serve him if without arms. Therefore would not those good friends, who had interred him with such a show of devotion and love, consider it necessary to supply him with artificial hands? Hence, they would not leave off the hands from the anthropomorphous jar. What would be left in the tomb in such case to lift the aliment and drink, if there were no hands there?"

Dr. Palma has published the example of the armless huaco to which I have before referred, and which completely robs my beautiful hypothesis of all value. For even if there is doubt of its being an example of such amputation there is no doubt that it is an *armless* huaco which could not hand food or drink to the person interred.

Dr. Palma also says: "Even if this huaco did not exist there is another thing to invalidate the hypothesis of Dr. Ashmead, and that is the chronicled fact that the Indians of Peru never buried huacos

potteries as servants; such burials were religious entirely."

The photograph here published of a pottery sent me by Dr. Tello from the Gaffron Collection, represents undoubtedly a person with one arm amputated above the elbow, the crude stump is freely expressed even in the photograph. This figure has the ordinary gross looking ancient Peruvian face. The nose is enlarged and ulcerating off; the face is diseased and scarred, but the enlargement of nose shows most evidently disease. *This patient is represented blind*, as appears to me, although the eyelid is lifted from the eyeball.

As in all the specimens of foot or feet amputations, disease of the individual's face is undeniable, and no one can say that this person with amputated forearm has not a diseased face. Now what disease could affect the face and make us think also that the same disease had affected the hand to require an amputation at the elbow?

I show here photographs of five living incipient *uta* cases. We see that the noses and lips and cheeks are all represented diseased.

The regions of the body where *uta* shows itself constantly prove its exogenous origin. The disease always attacks the parts permanently uncovered during waking and sleeping hours where the bite of the mosquito is most readily received. No one ever saw a lesion of *uta* on the hairy part of the skin or on the sole of the foot or palm of the hand. Neither has it ever been heard of on the trunk, or the



FIG. 4.—Pre-Columbian water bottle from Pachacamac graveyard, Peru, showing designs of life and diseased upper lip. (From the American Museum of Natural History, New York.)

genitals, nor in the upper segments of the extremities, arms or thighs. In every kind of workman it is inoculated on the individual below the clothing line. Besides, it always affects those who live or work in the fields, or places where insects are most abundant.

Here is plausible explanation for the constancy of the tibiotarsal site of amputation. And there is reason for believing that the image which I have reproduced here of a diseased sole of the foot, and which I before interpreted as having required amputation of feet in other cases, is not *uta* at all, but some other disease propagated by insects. The *mosca de Arena*, as Mr. Mead, of the American Museum of Natural History, thought, had laid its eggs in the skin, and which the patient was represented as extracting, might possibly be the cause of this disease of sole of foot. *Uta* of the face affects preferably the upper lip, nose, and cheeks. The forehead, the chin, the eyelid, may also be the seat of utotic manifestations. *Uta* may also affect the ear, especially its upper border.

The superior extremities are more frequently affected than lower members. (Why then should there be so many more representations of tibiotarsal amputations and of wrist none?) The back of the hand and the lower third of the forearm, the dorsum of the foot, the maleolar regions, and the lower third of the exterior of the foot, are special sites for utotic lesions. In seventy-five cases of *uta* observed by Dr. Ugaz, forty-eight patients had the face affected exclusively, nine the hands, fifteen had the feet attacked when they were not protected by the shoe, and in seventeen cases the lesions were multiple, that is the face, hands, legs, and feet were all affected. Dr. Tamayo has given me numerous facts about those diseases of his country which are like *uta*. He has found a greater proportion of *uta* of the upper extremities than for the lower. *Uta* therefore as a disease is not responsible for all the amputation of feet shown on huacos pottery. *Uta* may be confounded with many of the other diseases of this part of the world. And it must also be borne in mind, when considering this work of the nonmedical professional potters of Peru who have modeled these excellent specimens, that they had no idea of difference between the conflicting diseases of their country. They merely intended to represent a condition of the dead one. So they sculptured the pot as best they could to answer that purpose, and to meet the religious or superstitious idea of its burial with the corpse. They worked for money and not for future anthropological glory or exact medical nomenclature. The potter's art of that remote time as represented on those anthropomorphic images was acceptable to their world, for they were bought and buried with the corpses hundreds and hundreds of years ago.

It made no difference to the artists whether the diseased condition which had frequently required amputation during life for cure was *uta*, or syphilis, or both together, or another disease. They sculptured a picture of misery, a condition of physical distress, expressing it in their clay. The stumps which they represent tell simply a story that the poor humans while alive were objects of pity; beggars for sympathy or support, who in their graves still cried out for mercy by appeal to God.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XC1.—What is your experience in the therapeutic use of thyreoid feeding? (Closed, October 15, 1909.)

XCII.—What are your views on the open air treatment of pneumonia? (Answers due not later than November 15, 1909.)

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Answers due not later than December 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question XC has been awarded to Dr. M. P. Ferstler, of Brooklyn, whose article appears below.

PRIZE QUESTION XC.

THE TREATMENT OF TYPHOID FEVER.

By M. P. FERSTLER, M. D.,

Brooklyn.

While house physician in one of the hospitals in Brooklyn last fall, somewhere between twenty-five and thirty typhoid cases came under my observation affording me excellent opportunity of both studying and treating the disease. Hence I deduce the following views:

In every case of typhoid fever the physician has a twofold duty, namely, that of safeguarding others and that of treating his patient. Every hospital should be furnished with separate wards for these patients, and special trained nurses should be assigned to their care. In private practice two trained nurses, if possible a day and a night nurse, should be obtained, if not, two attendants one for day and the other for night duty should be instructed as to the prophylaxis and care of a typhoid case.

Prophylaxis.—This is imperative, and cleanliness is its first requisite. Only those measures to be observed in the sick room will be mentioned. The danger of infection narrows down to the excreta and objects coming in contact with them. Disinfection of the excreta and things contaminated by them is the proper remedy. Two chemical disinfectants will be mentioned, carbolic acid solution, 1 in 20; and bichloride of mercury solution, 1 in 1,000. The urine is to be kept in equal parts of either, and stools in double its own amount, for two hours before being rejected; the sputum collected in cloth must be burned up. Objects in direct danger of infection are, bed clothes, the hands and clothes of the patient, nurses, or attendants, dishes, towels, and floor, etc. Indirectly anything coming in contact with these objects. Clothes, dishes, and everything that can, should be boiled for no less than twenty min-

utes. The floor if soiled demands a thorough scrubbing with a disinfectant. If the nurse's hands are contaminated she must resort to scrubbing and immersion for several minutes in one of the disinfectant solutions. Water employed for hydrotherapy or water suspected of being contaminated must be properly disinfected before being rejected. Bedpan and urinal must always contain a strong antiseptic solution.

Additional prophylactic measures are the following: Isolate the patient in a well ventilated room which must be as empty as possible, especially so far as carpets are concerned. Flies being a recognized danger must be kept out of the room by proper screening of windows. A rubber sheet beneath the bed sheet to prevent soiling of bed. The nurse should wear a rubber apron to prevent her clothes from being soiled. All work pertaining to the patient or sick room must be done by nurses or attendants, and they must observe the same routine of disinfecting their hands and nails before eating or leaving the sick room, as if they had been contaminated. Separate clothes should be worn in the sick room. It is good practice to scrub the floor and wash the wall with one of the antiseptic solutions twice weekly.

After the patient is well a thorough fumigation of the sick room is to be demanded.

The physician has not been mentioned in the foregoing because he is supposed to be familiar with the disease and its dangers of spreading, and can and should act accordingly.

Treatment.—Every physician well understands that typhoid fever *per se* is in no degree to be shortened or cured. Too much medication is often practised. On the other hand, we know that the symptoms and complications may prove dangerous to the life of the patient, also that we might often prevent their becoming serious or even get rid of them by careful treatment, and thus often save life or prevent an unnecessary prolongation of this disease. Careful nursing is the most essential part of the treatment. It should be the duty of every nurse to have a record of every symptom that may occur, and to keep a chart containing the patient's temperature taken several times each day at regular intervals. She must keep a record of his pulse and respirations, of the number of bowel movements, etc. Food or medication must be recorded. An urinary analysis must be made frequently, and the findings recorded. For the sake of convenience the bed should be in the centre of the room. A cheerful disposition on the part of the nurse may influence the patient's nervous system and help along to a great extent. It is the physician's duty to watch carefully and interfere with medication if need be. Routine treatment here is uncalled for excepting absolute rest and diet.

The diagnosis established, the patient is put to bed. Absolute physical and mental rest is imperative to preserve all the strength and vitality possible. The diet must be regulated. All our patients were placed on a milk diet. Should the taste become disagreeable a little salt or lemon juice may be added, or vichy and milk may be given. Whey, buttermilk, or plain soda water may be part of his diet. The

patient should drink as much water as possible. Eggs, although never employed in any of our cases, may be given, soft boiled. Peptonized milk or milk and lime water may be required. Beef extracts are of little value and their administration is not advocated by some of the best authorities. These two routine measures, absolute rest in bed and diet, are to be inaugurated once the diagnosis is made and continued until the patient is well out of all danger. Cold and hydrotherapy are next in importance. Their action on fever, on the general nervous system, and accompanied by friction on the circulation is unquestionable. Employed are tepid and cold water. For subnormal temperature, warm water. Modes of administration are sponging, ice bag, tub bath. Friction may be resorted to.

Some of the more important symptoms and complications will now be considered.

Fever: This is a constant phenomenon and its character is peculiar to typhoid fever. Hydrotherapy and cold are the means to be employed here. If a cause for a sudden rise of temperature is suspected it must be attended to. Antipyretics are to be avoided in the active stage of this disease. An ice bag to the head was almost a general rule when the thermometer registered 101° F. When the mercury ascended to 103° F. we employed in addition to the ice bath cold water sponging. Tub baths were not employed in our cases though their value is unquestionable. The patient should always be covered lightly. If the temperature should become subnormal warm water accompanied by friction followed by warm covering must be recommended. Treat cause.

Nervous symptoms: Hydrotherapy also acts well here, often preventing these symptoms from becoming serious. An ice bag applied to the head is of benefit whether or not the nervous symptoms are caused by high fever. Additional medication is sometimes called for. The bromides may be tried and will often relieve. By far the best remedy in the line of drugs is morphine sulphate, gr. $\frac{1}{8}$ to $\frac{1}{4}$, p. r. n., but should be withheld until other measures have failed. Codeine sulphate, gr. $\frac{1}{4}$ to ss. may aid us. The same drugs should be tried as a remedy for somnolence. A quiet room with perfect rest on the part of the patient, not many visitors, and cheerfulness on the part of the nurse, are all factors for good. Here as well as in fever there may be a cause, if found, treat.

Sordes: A mouth wash consisting of equal parts of glycerin and water, and cleanliness, which the nurse is to look after, are sufficient for this condition.

Flatulence and distention: The patient's bowels must be regulated, constipation is to be avoided. Guaiacol carbonate has been given in nearly all of our cases, it may not be as much of an antiseptic as supposed by some, but it seems to prevent, to some degree, and if present to lessen the severity of flatulence. Its dose is, gr. v, t. i. d. It seems to be better borne than creosote carbonate, gr. v, t. i. d., the latter having been employed in several cases. Hoffmann's anodyne, \mathfrak{ss} , acts very nicely. I have come to the conclusion that oil of turpentine, given in four minim doses by mouth, or in the form

of a stupe or enema, is by far the best remedy for distention. If necessary it may be given both by mouth and by rectum.

Constipation: This must be avoided for it increases the toxæmia, and I am sure often causes a rise in temperature or severe nervous symptoms. Although some practitioners object to purgatives there seems to me every reason for their use. Of course drastic purgatives must be avoided and even such as may be employed should not be given oftener than once or twice a week. Calomel, gr. ss to j, in divided doses, with a few grains of sodium bicarbonate acts very well; this is followed by magnesia the next morning. Other remedies which I employ are cascara sagrada, fluid extract, ʒss or compound liquorice powder, ʒj. These remedies do not disturb the intestines and act well. By far the best remedy and one resorted to most frequently in our cases was a rectal enema.

Diarrhea: If there are more than three movements a day lime water should be added to the milk. Peptonized milk may be administered. It may be necessary for us to discontinue the giving of milk for a few days. Bismuth subnitrate, grs. xv, or the acetate of lead, grs. ij, p. r. n., are among our best remedies. Opium may have to be resorted to, given in one grain dose p. r. n. A codeine or opium suppository relieves rectal irritation.

Vomiting: This symptom did not appear to any extent in our cases but a carefully regulated diet with bismuth subnitrate, gr. xv, may be sufficient.

Hæmorrhage: This occurred in three cases. Our treatment consisted in giving morphine, gr. ⅓, if necessarily repeated, calcium chloride or lactate, gr. v, every 3 h., if continued a day after the bleeding has ceased, and I gave Monsel's solution, ℥ iv, every 3 or 4 h., though Monsel's salt, gr. ij, is to be preferred. Ergot may be tried. I think with small doses of morphine, with calcium chloride, and Monsel's salt most of such cases may be relieved.

Perforation: Immediate operation is imperative. If shock is present let this first pass off.

Shock and collapse: This is due to perforation or loss of blood. Elevate the foot of the bed. Warm sponging with slight massage, warm covering. Hot bottles should be placed to the soles of feet. Adrenalin, gr. ij, every 3 or 4 h., cardiac stimulants are indicated. Hypodermoclysis or intravenous infusion of a normal saline solution is beneficent here as well as in severe toxæmia and cardiac failure.

Heart: Being more or less weakened in every case the heart often calls for our attention. Let careful auscultation guide us rather than the pulse. Strychnine sulphate is an excellent remedy here, and was given at some time during the disease in all of our cases. Its dose should range from gr. 1/60 to 1/30 p. r. n. Small doses frequently given act better than larger ones at longer intervals hence, gr. 1/60, every 2 h., should be preferred to, gr. 1/30, every 4 h. This may be administered in water if the heart trouble is not very serious or in whiskey if the case should demand it. Some patients need whiskey, and in patients of previous bad habits large quantities must be given. Its use should be discontinued as soon as it is no more needed. Caffeine has been used occasionally. Digitalis should not be

employed so long as high fever is present. Strophanthus and sparteine have not been used to any extent in our cases. For cardiac failure nothing seems to compare to camphor, gr. ij, and ether, ℥ xx, hypodermically. It may be repeated, or strychnine sulphate, gr. 1/30, in warm whiskey hypodermically may be employed. Adrenalin seems to be of benefit. Hypodermoclysis or intravenous infusion may be called for.

Kidneys: Encourage the patient to partake of as much water as possible, for it dilutes the toxins and flushes out the kidneys. Plenty of urine should always be avoided; if a diuretic is needed, potassium citrate, gr. xx is very effective. Theobromine sodium and sodium salicylate, gr. v to x, has been employed in many of our cases with perfect satisfaction. Hexamethylenamine (urotropine), gr. v, t. i. d., is very useful, as a urinary antiseptic, and is indicated when bacilluria or severe toxæmia present themselves.

Bed sores: These should be prevented by cleanliness and massage with alcohol and cold water to stimulate the circulation. If present astringent applications are necessary and as little pressure to the part as possible.

Profound toxæmia: In this condition should be used hypodermoclysis or intravenous infusion of a normal saline solution; diuretics; urinary antiseptics; also regulation of bowel movements; all of which have already been mentioned as bringing very good results.

Relapses: Relapses are frequently met with. Perfect quiet, mental and physical, is to be observed.

Other complications: Other complications must receive prompt attention. One of our patients suffered from pleurisy, another from bronchopneumonia, one rectal abscess appeared, and phlebitis developed in one case; it was diagnosed by one of the visiting physicians who suggested the need of a thorough examination at frequent intervals. One profound jaundice with hepatic enlargement proved fatal.

Serum therapy: I have not seen any of it employed and cannot therefore say anything in favor or against its value.

Convalescence: A gradual increase in diet was allowed after the temperature had been normal for nine days. Not infrequently cases are met with in which the temperature is normal a day or two then goes up to 99° or 99.5° F. at night, and goes down to normal in the morning only to repeat this indefinitely. In such cases quinine sulphate, grs. v, t. i. d., has proved of value. The heart being in good condition, acetphenetidin, gr. iii, with caffeine, gr. j, may do good but should not be repeated more than once or twice. There were two such cases in which nothing seemed to have any influence on the slight febrile condition so that I resolved to act according to the advice of one of my college professors and allow the patients to get up a short time, with a resulting normal temperature. This bed fever might be a nervous phenomenon. The patient should gradually remain up and about. Fresh air and moderate exercise are indicated as soon as possible. A tonic may be given. Posttyphoid insanity or neuritis should receive due attention.

Therapeutical Notes.

The Treatment of Pertussis.—Méry, of the Hôpital des Enfants-Malades, is quoted in *La Quinzaine thérapeutique* for September 10, 1909, as remarking that belladonna is most relied upon for the relief of whooping cough, especially in certain forms. It is necessary, however, to have recourse to other medicaments, and it is suggested that the inhalations of the fumes of a burning pastil of the following composition be employed as an adjunct to other remedies:

R Pulverized wood charcoal, 5v;
Potassium nitrate, 5i;
Naphthalene, gr. xv;
Creosote, 5iss;
Carbolic acid, 5ii;
Tar, 3iiss;
Aconite leaves, gr. xxv.
M. et Sig.: Ignite one pastil in the sick room and let the fumes be inhaled.

The fumes arising from the burning pastil relieve the cough in a certain measure.

Hufeland administered belladonna for the first time in the following form:

R Belladonna root, pulverized, gr. ¾;
Pulverized sugar, 5i;
M. In pulv. viii æq. divid.
Sig.: One powder twice daily.

Trousseau prescribed belladonna in pill form:

R Extract of belladonna gr. 1/7
Pulverized belladonna, gr. 1/7
M. ft. pil. No. 1.
Sig.: One pill to be taken every three hours and the dose gradually increased until a daily dose of twelve pills is reached.

Méry prefers to administer a solution of atropine made by dissolving one centigramme (gr. ¾) of atropine [sulphate] in 250 grammes (eight ounces) of distilled water. The dose of this is one teaspoonful for a child of six to eight months of age, increasing it during a dangerous spasm.

In addition to this he has confidence in the usefulness of the herb, sunden (*Drosera rotundifolia*), which is given in tincture form in fifteen minim doses, but he speaks of the difficulty of getting a preparation on which dependence can be placed. The following mixture is esteemed by him:

R Tincture of dorsera, 3i;
Tincture of lobelia, 3i;
Tincture of belladonna, 3i;
M. et Sig.: Five to seven drops three times a day.

Antipyrine is most useful in diminishing the number of coughing spells. Méry gives it to infants in daily doses of three quarters of a grain for each year of age.

Bromoform gives good results, but it must be administered with circumspection. The author employs the following formula:

R Bromoform, gtt. xl;
Oil of sweet almond, 5ss;
Acacia, 3ss;
Cherry laurel water, 3i;
Water, q. s. ad 3iv.
M. ft. emulsio et Sig.: Dose, one teaspoonful.

Bromoform is never given by M. Méry to children under the age of two years.

Hygienic precautions are not less important than medicinal measures. In the first stages of pertussis

the child should not be allowed to leave the bedroom. At the catarrhal period a change of air is beneficial, but not before. Well attended to, the subject of whooping cough is quickly cured.

The Use of Garlic and Santonin as Anthelmintics.—In the treatment of round and thread worms at night on retiring, and the morning after give the following:

R Garlic, cut into small pieces; i clove.
Milk, i glassful.

Cook on a light fire for ten minutes, filter through cheese cloth and sweeten to taste. This dose is said to make the worm more easy of attack by the oily solution of santonin as cited in *La Tribune médicale* for September 25, 1909, and at the same time diminish the capacity of the mucous membrane to absorb the oily solution. The santonin is administered a few moments after the dose of garlic and milk has been given, in the following combination:

R Santonin (dose according to age of the patient),
generally, gr. ¾
(From one year up, 4½ grains.)

Oil of sweet almond, ℥lxxv;
Dissolve and add:

Syrup of acacia,
Orange flower water, āā 3v

M. ft. emulsio.
Sig.: To be taken in three doses at five minutes' intervals, followed two hours afterwards by a dose of calomel.

For Chronic Cystitis.—In the treatment of chronic cystitis Guyon prescribes a pill of the following composition to be taken four to six times a day (*Journal de médecine de Paris*, September 18, 1909):

R Venice turpentine, gr. iss;
Extract of cinchona, gr. iss;
Calcined magnesia, q. s.
M. ft. pil. No. 1.

The Treatment of Gastric Ulcer.—In the *Monthly Cyclopadia and Medical Bulletin* for September, 1909, a clinical lecture on gastric ulcer by John V. Shoemaker is published. After describing the case history and showing the points of difference between gastric ulcer and chronic gastritis, cancer of the stomach and gastralgia respectively, Dr. Shoemaker discusses the pathology, ætiology, and treatment. As to treatment he observes that diet plays an important rôle. Rest in bed with very little food by mouth, and lavage of the stomach does more to relieve symptoms and hasten granulation of the ulcer than all other medication. He believes in keeping the patient alive by nutritive enemata containing:

R One egg,
Liquid peptonoids, 3ii;
Peptonized milk, 3vi.
M. et Sig. Per rectum every four hours.

To keep the rectum clean and healthy so that the best results of the enemata may be obtained, a cleansing enema of a normal saline solution should be given at least once daily. The patient receives nothing by mouth for ten days, except a little water to quench the thirst. Lavage with a gallon of normal saline solution, twice daily, is followed by silver nitrate, grain one fourth in a drachm of mucilage of acacia. If at the end of ten days the patient has

sufficiently improved, peptonized milk broths, lemon and orange albumen are given by mouth, and a nutritive enema twice daily. As the patient progresses more liquid foods are allowed and the nutritive enemata discontinued. Lavage once daily is continued until all symptoms of the ulcer have disappeared.

As a tonic and hæmatinic in the anæmic and emaciated condition of the patient Dr. Shoemaker prescribes the following:

- B** Soluble iron pyrophosphate, gr. iii;
 Precipitated manganese dioxide, }ãã gr. i;
 Quinine disulphate, }
 Extract of nux vomica, gr. 1/6;
 Extract of gentian, gr. ii;
M. Fiat capsula No. 1.
Sig.: One four times daily.

The Treatment of Ophthalmia Neonatorum.—

Jourdan and Vachez (*Archives de médecine d'Angers*, August 20, 1909, and *Revue de thérapeutique*, October 1, 1909) describe the treatment of ophthalmia neonatorum for the benefit of nonspecialists in ophthalmology. Prophylactic measures should be first observed, the utmost cleanliness being enjoined as regards the care of the mother before confinement, and frequent vaginal injections being prescribed. After birth the infant's eyes should be washed with large quantities of water, and one drop of the following solution should be dropped into each eye:

- B** Silver nitrate, gr. i;
 Distilled water, 5i.
M.
Or:
B Protargol, gr. vi;
 Distilled water, 5i.
M.

The curative treatment is generally as follows: Wash the eyes freely twice daily, and instill into each eye a little warm solution of potassium permanganate of the strength of 1 in 10,000. In the intervals remove any accumulation of pus with a swab of absorbent cotton moistened with a solution of potassium permanganate of the strength of 1 in 4,000. Instill two or three times a day a collyrium of silver nitrate, varying in strength from one and a half grains to three grains of the nitrate dissolved in seventy-five minims of distilled water. In very severe cases apply to the mucous membranes of the inner lids of the eyes with a camel's hair pencil the following solution:

- B** Silver nitrate, gr. viiss;
 Distilled water, ʒi lxxv.
M.

The application of this is to be neutralized immediately by instilling two or three drops of a solution of sodium chloride. The application of concentrated solutions of this character should, however, be confined to those who have had experience in their use.

The Treatment of Migraine.—Rankin (*Monthly Cyclopædia and Medical Bulletin*, September, 1909) observes that remedies for the relief of migraine are almost without number, but the most that can be expected of any of them is a diminution of the severity and a curtailment of the duration of the pain once the attack has become fairly established. Preventive treatment can do no more than endeavor to improve the patient's general health by correcting

unhygienic conditions or pernicious habits so that an increased resisting power is acquired by the establishment of greater nerve stability and increased physiological activity in the secretory and excretory functions of the various organs. On the first threatenings of an attack, the patient should lie down in a darkened room, and if the cause be immediately preceding fatigue, ten grains of antipyrin swallowed with one tablespoonful of brandy and water will often, when combined with one or two hours' rest, cut short the pain. In more acute cases such simple measures are insufficient. It is then necessary for the patient to go to bed and to submit to wholesome starvation for twenty-four hours. Primary relief is afforded by the application of cold to the head and of a mustard plaster the whole length of the spine. If there is reason to suppose that the stomach contains a quantity of undigested and fermenting food, it should be emptied by an emetic, thirty grains of zinc sulphate by the mouth, or one eighth of a grain of apomorphine hydrochloride hypodermically, being suggested.

For the Asthma of Hay Fever.—Huchard in the treatment of the asthma of hay fever prescribes an insufflation of the following composition (*La Quinzaine thérapeutique*, September 10, 1909):

- B** Quinine sulphate, gr. xv;
 Gum benzoïn, pulverized, gr. xviii.
M. et. **Sig.:** Snuff up the nose several times daily.

Application for Bromide Acne.—Kellner (*Deutsche medizinische Wochenschrift*, June 24, 1909; and *The British Medical Journal*, October 2, 1909) recommends the following ointment as a remedy for the acne which follows the prolonged administration of bromide salts:

- B** Resorcin, }
 Starch, }ãã 5i;
 Zinc oxide, }
 Petrolatum, 5iii.
M. ft. unguent.

Hordenine Sulphate in Gastrointestinal Affections.—According to *La Quinzaine thérapeutique* for September 25, 1909, Mercier and Pepin prescribe hordenine sulphate in the following combinations:

- Syrup**—
B Hordenine sulphate, gr. iv;
 Distilled water, ʒi xv;
 Alcohol, ʒi xv;
 Syrup of bitter orange peel, ʒss.
Capsules—

- B** Hordenine sulphate, gr. iss;
 Sugar of milk, ʒi xv;
M. ft. capsula No. 1.

- Amoules**—
B Hordenine sulphate, gr. iss;
 Distilled water, ʒi xv;
M. ft. Ampoule No. 1.
Sig.: For hypodermic use.

New Method of Administering Castor Oil.—Rittier is quoted by the *Journal de médecine de Paris* as recommending the following palatable method of preparing castor oil:

- B** Saccharin, gr. ii;
 Oil of peppermint, gtt. v;
 Alcohol, enough to dissolve the saccharin and oil of peppermint.
M. Castor oil, ʒviiss.

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COLLABORATION IN STATISTICAL
WORK.

Of late there has been a hopeful increase in the United States of interest in promoting the accuracy and completeness of vital statistics. We sent earnest and efficient delegates to the recent Paris conference for revising the International Classification of Causes of Death, men who, in addition to their individual views, presented the conclusions arrived at by representatives of various American organizations which for months had been conferring, by meetings and by correspondence, on matters pertaining to the classification and nomenclature of diseases and injuries. Moreover, the comparatively new Section of Vital Statistics of the American Public Health Association has grown to an importance which at the time of its establishment was thought by many of the members of the association to be unattainable.

But a great deal yet remains to be done before the United States can make a creditable showing in vital statistics. A notable effort in the direction of helping to accomplish the necessary work was the arrangement of a dinner which was given in the Ebbitt House, in Washington, last Monday evening. There were invited to that dinner the members of the American Statistical Association, of the Association of American Government Accountants, and of the American Public Health Association, as well as a number of other persons known to be working

for the desired end. The card of invitation gave the object of the gathering as "not statistics alone, but the promotion of acquaintance and good fellowship among statistical workers." That object was certainly promoted at the dinner. Moreover, a distinct impetus to the progress of statistical improvement was given in the remarks of several of the speakers, notably those of Dr. John S. Fulton, of Baltimore, the energetic secretary general of the International Congress of Hygiene and Demography, which is to be held in Washington in less than a year from now.

Dr. Fulton drew a vivid picture of some of the grave results of our remissness in vital statistics, including the inability of the general government to comply with the terms of an agreement upon which it entered some years ago with the government of an important European country, an inability consequent on the negligence of many of our States and municipalities. He depicted also some of the hardships suffered by individuals as a result of our backwardness in registration. Thanks largely to the persistent and tactful efforts of Dr. Cressy L. Wilbur, the chief statistician of the Division of Vital Statistics of the Bureau of the Census, the registration area in the country is gradually being extended and the availability of the returns for statistical purposes enhanced; but progress in these directions can be greatly expedited by such cooperation as the medical profession may justly be expected to manifest.

In December there is to be a meeting of the American Statistical Association in New York, and it is probable that at that meeting there will be appointed a committee to cooperate with a committee constituted at the recent meeting of the Section of Vital Statistics of the American Public Health Association. It is hoped that such collaboration between medical registration officers and statisticians who are accustomed to dealing with data that have little or no connection with public health matters will be particularly conducive to the adoption of methods which will simplify and systematize the collection and digestion of explicit and authoritative returns of births, marriages, and deaths.

LEPROSY AND CONTAGION.

Dr. Sand, of Trondhjem, read a very interesting paper at the second International Scientific Congress of Leprosy, held at Bergen, Norway. (See our *Journal* of September 18, 1909, p. 561.) He based his negative conclusions as to the contagiousness of leprosy upon observations of 1,558 persons, made in Norway from 1870 to 1905 (*Monatshefte für praktische Dermatologie*, October 1, 1909). Sand always

was a defender of the theory that leprosy is not transferred by direct contact. From his statistical material he demonstrated that men (at about thirty-two years) were attacked later than women (at about twenty-nine years), although the men led a strenuous life, mostly as fishers or helpers, outside their homes, for a greater part of the year away from their families, under unsanitary conditions, and much exposed to contagion, while the women lived at home, and did their work at their own firesides, under clean and sanitary conditions. Furthermore, he showed that in 512 marriages, observed from 1864 to 1905, in which one member entered wedlock as a leper, only seventeen other members became leprosy, or 3.32 per cent. And finally, of the 512 marriages, 357 leprous fathers had 1,178 healthy and sixty-three leprous children (4.9 per cent.); while 138 leprous mothers had 477 healthy and fifty-six leprous children (10.5 per cent.). In the seventeen marriages in which both parents were lepers there were fifty-five healthy and eight leprous children (12.7 per cent.). The children had always, naturally, been in close contact with their mothers. The mother nurses her infant, keeps it clean, and attends it; when it grows up it is still the mother who looks after it; thus mother and child come in direct contact, and still we find in Sand's report that 138 leprous mothers had among 533 children only fifty-six leprous offspring.

Dr. Sand comes, therefore, to a conclusion, which seems warranted by his observations, that leprosy is not carried directly from individual to individual, but that the microorganism of leprosy must, outside of the human body, undergo an intermediate state before it can transfer leprosy to a healthy person. But this view was not accepted by the congress, which adopted among its resolutions a paragraph saying "leprosy is a disease which is contagious from person to person, whatever may be the method by which this contagion is effected," although it added later: "It is desirable that the question of transmissibility of leprosy by insects should be elucidated."

PIROPLASMOSIS AND TRYPANOSOMIASIS.

An interesting observation is published in the June number of the *Philippine Journal of Science* by Martini, who had been engaged for several months in examining the blood of cattle at the Biological Laboratory in Manila. Among the apparently healthy calves placed at his disposal he found one in which there was a species of piroplasma which resembled the piroplasma of coast fever, that of Texas fever, and other parasites of the same genus.

In order to determine the species, cultures of the

blood of this animal were made. In thirty-three hours one of the tubes was found to contain a trypanosoma, and later other tubes were found to contain the same organism. The piroplasmata remained in the cultures until the fifth day without having undergone change and then disappeared. At no time was there evidence of the transformation of piroplasma into trypanosoma or of transformation of trypanosoma into piroplasma. Careful examinations of the blood of the animal failed to show trypanosomata in the smears, but piroplasmata were always present.

Inoculation of monkeys with the blood of the calf failed to produce trypanosomiasis. Experiments on healthy calves showed, finally, that this animal was infected with two distinct protozoan parasites. One, which was demonstrable in the peripheral blood by the usual staining methods, was a piroplasma; the other, demonstrable in cultures only, was a trypanosoma. The piroplasma was of the Texas fever type, and the trypanosoma was a new species. It was found impossible to infect fresh animals with the latter organism by the injection of the blood of the original animal; only after the organisms had developed in culture media could that result be obtained. This fact is accounted for by the small number of organisms in the blood of the original animal and the natural resistance of the experimental animals.

THE UNITED STATES MEAT INSPECTION.

At the recent meeting of the American Public Health Association, held in Richmond, a Michigan lady, Mrs. Caroline Bartlette Crane, read a paper entitled What is Happening to American Meat Inspection? Mrs. Crane read her paper in a very spirited manner, and it was well received—to such a degree, indeed, that she was applauded, though no doubt the applause was chiefly due to a chivalrous feeling toward the author, who has been favorably known for some years. The substance of the communication was a severe arraignment of the methods employed in the government inspection of meat. That in itself was no novelty, but the author created a sensation by declaring that she had in her possession a copy of a secret order, issued by the government, by which the published instructions to the inspectors were in some respects nullified. This astounding declaration called, of course, for something more than a discussion, and a motion was entertained that a committee be appointed to investigate Mrs. Crane's charges. The motion was referred to the association's Executive Committee, and that committee made the following report:—

The Executive Committee, having been directed by the association to consider the advisability of appointing a

committee to investigate certain charges made in an address before the association (which alone they can consider) against the meat inspection under the direction of the United States Department of Agriculture, beg leave to report that, inasmuch as the giver of that address appeared before the committee and submitted certain documents, and inasmuch as neither those documents nor her statements, in the judgment of the committee, substantiate those charges, they recommend that no such committee be appointed, and that the motion calling for it be laid on the table.

A motion was promptly made, and carried unanimously, that the Executive Committee's recommendations be adopted. It is gratifying to note that this motion was made, not by any citizen of the United States, but by such an esteemed Canadian member as Dr. Frederick Montizambert, of Ottawa, the director general of public health of Canada. It was doubtless Dr. Montizambert's warm heart and his fine sense of chivalry that prompted him to offer the motion, but we may all rest assured that he would have checked himself had he not been convinced that Mrs. Crane's charges had not been adequately substantiated. Of course he did not commit himself to a conviction of their falsity, and the association did not so commit itself, and it is hinted that the United States government may yet take the matter up; but it is a subject for congratulation that there was no hasty acquiescence in damaging charges that are so easy to bring.

Mrs. Crane has not been suppressed, and no decent person wishes to ignore her or her criticisms; but, on the other hand, such a conservative and really responsible body as the American Public Health Association has most properly declined to give the world the impression that it sees reason to attach any great importance to this latest attempt to discredit an inspection service which is believed to be thorough and free from guile by those of us who are not prone to be unduly influenced by unsubstantiated accusations. So far as we are concerned, it will take solid proof to weaken our belief that the United States meat inspection is deserving of the confidence of the community.

CHINESE PRACTICE.

It is commonly understood that the Chinese family physician is under salary while his patients are in health. When sickness supervenes, accounts differ, some saying that his salary ceases, others merely that it is not increased. We do not agree with those who believe the system would work well in civilized lands. Our anxiety to keep our clients at the top notch of condition would certainly lead to our becoming a sort of police, strikingly uniformed to secure attention and respect, nervously

interfering with the pleasures of the public. We should be present and gazing reproachfully at motor races, college athletic sports, and aeroplane exhibitions; busy establishing filters and boilers at springs and water works; spraying bacteria and computing calories at banquets and family meals; peering anxiously at closed bedroom windows; and flitting through the parlor at the courtship hour to drop a tract on osculatory perils. The convivial diner, about to pledge a neighbor in a sparkling bumper, would find one of us at his elbow, a minatory forefinger upraised and a deprecatory smile upon the lips. Compared to one of us, a skeleton at the feast would be a companion of joy and the sword of Damocles a *hors d'œuvre* of piquancy.

THE PHYSICIAN AS A PUBLIC SPEAKER.

It would be of great advantage to all physicians who are called upon either to lecture to classes or to speak in public to take a course of lessons in elocution. Not only would they learn how to make the voice carry with the least possible effort, but, which is not less important, also learn the value of the pause. The pause rests not only the speaker but his audience. The untrained speaker unfortunately thinks it necessary never to cease vocalizing; if words fail him for a moment, he fills the interval with distressing er-er's. If instead he was to pause and knit the brow impressively, or even scowl at some meek looking auditor while awaiting reinspiration, the effect would be improved. It is resorting to such rhetorical artifices that makes the so called magnetic speaker. The coveted magnetism is no greater mystery than that.

LAZINESS.

In the *Practitioner* for October, 1909, Sir Lauder Brunton draws attention to the fact that anæmia of the brain is a potent cause of an inability to think and write that would certainly be characterized by the majority of people as sheer laziness. Rest in the horizontal position and writing with the head lowered by stooping are offered as remedies. The curious effects of the parasite hookworm are attracting general attention. Are we about to discover that there are easily recognizable pathological bases for laziness, as we are beginning to believe there are for that lack of conscience that leads to crime? What will become of the clergy, the ethical culturists, the jailers as we know them?

There is a lesson to be drawn from these glimmerings of a new theory of righteousness as depending largely upon a sound body, and that is the importance of the regular—semiannual, say—physical

examination of children. Myopia, astigmatism, heterophoria, slight deafness, insufficient chest expansion, incipient deviation of the spine, and innumerable other defects are recognizable in their beginnings only to the expert eye, and their rectification is likely to be followed by a marked change in the mentality of the young subject who may have been the innocent cause of great anguish in the parents and despair or indignation in the teachers.

News Items.

Changes of Address.—Dr. Marie K. Formad, to 123 South Sixteenth Street, Philadelphia.

Dr. S. Floersheim, to 808 Lexington Avenue, New York.

Dr. Emil Heuel, to 144 West Seventy-ninth street, New York.

Dr. A. D. Eisenberg, to 572 Leonard Street, Brooklyn, N. Y.

Dr. Charles Weckslin, to 361 Wyona Street, Brooklyn, N. Y.

Dr. R. Curtis Gray, to 743 Lexington Avenue, Brooklyn, N. Y.

Dr. Julius L. Werner, to 1533 South Sixth Street, Philadelphia.

The Cumberland County, N. J., Medical Society held its semiannual meeting in Bridgeton on October 12th. The programme included a paper on Autointoxication by Dr. M. Sewall, and one by Dr. C. W. Bonney on Spontaneous Rupture of the Pylorus into the General Peritoneal Cavity Producing Acute Diffuse Peritonitis.

The Medical Society of the County of Kings, N. Y.—The one hundredth regular meeting of the Section in Pædiatrics of this society was held on Wednesday evening, October 27th. Dr. Paul L. Parrish read a paper on Status Lymphaticus, and Dr. F. B. Cross read a paper on Adolescence and Hyperthyroidism.

The Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary was held on Tuesday, October 19th. Officers for the ensuing year were elected as follows: Dr. Frederick H. Pierson, president; Dr. H. R. Livengood, vice president; Dr. R. A. Shirrefs, secretary; Dr. J. H. P. Conover, treasurer. A banquet was served at the close of the meeting.

The Harvey Society Lectures.—The first lecture of the course for the season of 1909-1910 will be delivered by Dr. Richard M. Pearce, professor of pathology in the University and Bellevue Hospital Medical College, New York, on Saturday evening, October 30th, at 8.30 o'clock, at the New York Academy of Medicine. The subject of the lecture will be The Problems of Experimental Nephritis.

The Section in Obstetrics and Gynecology of the Buffalo Academy of Medicine held a meeting on Tuesday evening, October 26th. The programme included a paper on Prolapsus Uteri, by Dr. Herman E. Hayd, and one on Troublesome or Dangerous Symptoms during Pregnancy, by Dr. Irving W. Potter. The discussion on the papers was opened by Dr. L. G. Hanley and Dr. P. W. Van Peyman.

Personal.—Dr. William Bailey, of Louisville, Ky., has been elected to succeed Dr. J. M. Mathews as president of the State Board of Health. Dr. Bailey has been a member of the board for twenty years, and a professor in the University of Louisville for fifteen years. He is seventy-six years of age.

Dr. A. L. Bennett, of Denver, Colo., has been appointed Japanese consul at that place. He speaks the Japanese language fluently.

Surgeon A. D. Foster, in charge of the American Marine Hospital branch at Amoy, China, has been appointed vice-consul at that city.

Dr. Achilles Rose has returned to New York, after spending some months in Greece.

The Wayne County, Mich., Medical Society will hold a general meeting on the evening of Monday, November 1st. The principal feature of the programme will be a paper on Gallstones, by Dr. James A. McMillan, of Detroit. The Section in Surgery met on Monday evening, October 25th. Dr. A. W. Blain presented a patient with chronic tuberculosis sinus, and demonstrated a treatment by the injection method. The paper of the evening was read by Dr. Carl S. Oakum on Anæsthesia.

The Detroit Society of Neurology and Psychiatry held a meeting recently and elected the following officers: President, Dr. E. A. Christian, superintendent of the Eastern Michigan Asylum, Pontiac; vice-president, Dr. Albert M. Barrett, superintendent of the Psychopathic Hospital, Ann Arbor; secretary, Dr. Charles W. Hitchcock, of Detroit; members of the council, Dr. C. D. Camp, of Ann Arbor, and Dr. David Inglis, of Detroit. After the election the society was entertained at dinner at the Detroit Club by Dr. C. B. Burr, of Flint.

To Investigate Pellagra in Illinois.—Governor Deen, of Illinois, has appointed a committee to investigate the outbreak of pellagra in the State. This committee consists of the following members: Dr. Frank Billings, president of the State Board of Charities, Chicago; Dr. George W. Webster, president of the State Board of Health, Chicago; Dr. Howard T. Ricketts, of the University of Chicago; Dr. Oliver S. Ormsby, of Chicago; Dr. H. Douglas Singer, of Kankakee; Dr. Harry Sands Grindley, of the University of Illinois; and Dr. W. J. McNeal, of the University of Illinois.

The Minnesota State Medical Association met in annual session in Winona on October 12th, 13th, and 14th. The programme contained a long list of papers covering a wide range of topics of interest to the general practitioner, and the meeting was in every way a great success. The following officers were elected: President, Dr. W. A. Jones, of Minneapolis; first vice-president, Dr. W. F. Dittm, of Red Wing; second vice-president, Dr. Hugh F. McHaughey, of Winona; third vice-president, Dr. G. W. Bray, of Biwabik; secretary, Dr. Thomas McDavitt, of St. Paul; treasurer, Dr. R. J. Hill, of Minneapolis. The next convention will be held in Minneapolis on October 6 and 7, 1910.

The Association of Seaboard Air Line Railway Surgeons met in annual session in Raleigh, N. C., on October 19th and 20th, under the presidency of Dr. William R. Weston, of Columbia, S. C. The next meeting of the association will be held in Birmingham, Ala., in 1910. The new officers elected are: President, Dr. James R. Rogers, of Raleigh, N. C.; first vice-president, Dr. J. D. Dean, of Dawson, Ga. (re-elected); second vice-president, Dr. W. H. Wilder, of Charlotte, N. C.; third vice-president, Dr. H. A. Burke, of Petersburg, Va.; secretary and treasurer, Dr. J. W. Palmer, of Ailey, Ga. (re-elected). Dr. E. H. Terrell, of Richmond, was elected a member of the executive committee.

Dr. Seaman Offers a Prize of Two Thousand Five Hundred Kroner.—At the Sixteenth International Medical Congress, held in Budapest last month, Dr. L. L. Seaman, as a member of the board of trustees of the New York Museum of Safety and Sanitation, offered a prize of 2,500 kroner for the best essay on the following subject: What should be the organization and status of the medical department of any army, in order that its sanitary and hygienic conditions may be maintained at their highest efficiency, so that in the emergency of battle, its units may best respond to the call of its commanders? The award will be made by the Executive Committee of the Seventeenth International Medical Congress, London, 1912.

The Howard Hospital and Infirmary for Incurables.—The fifty-fifth annual report of this institution shows that 843 patients were treated in the hospital during the fiscal year, ending March 29, 1909. Of these, 48 died, a mortality of 5.69 per cent. In the outpatient department 9,702 patients made 38,368 visits. In the accident ward 2,802 cases were treated. A legacy of \$1,925.50 was received from the estate of Catharine A. Warner, deceased, and one of \$202.10 from the estate of Mary A. Krieg, deceased. By the contribution of \$5,000 each, three free beds were endowed; one by Mrs. Blanchard, one in memory of Hiram Brooke, and one in memory of Edward Longstreth and Anna W. Longstreth. Nine nurses were graduated from the training school.

The Medical Association of Central New York, whose membership consists of physicians from twenty-two counties in the central and western parts of the State, held its forty-second annual conference in Auburn on Tuesday, October 19th, under the presidency of Dr. M. P. Conway, of Auburn. The principal feature of the programme was an address by Dr. Robert T. Morris, of New York, his subject being the surgical treatment of appendicitis. Officers for the ensuing year were elected as follows: President, Dr. F. W. Sears, of Syracuse; vice-president, Dr. Wesley T. Mulligan, of Rochester; secretary, Dr. C. A. Greenleaf, of Hornell, reelected; treasurer, Dr. C. O. Boswell, of Rochester, reelected. By a vote of the delegates Tompkins County was admitted to membership in the association.

The Ninth District Medical Society, of Ohio, will hold its seventh annual meeting at Waverly, on Thursday, November 4th. The morning will be devoted to the transaction of business, and for the afternoon session the following papers have been promised: Modern Sanitation, by Dr. Charles G. Parker, of Gallipolis; Early Manifestations of Tuberculosis in Childhood, by Dr. Jane Nye Galliford, of Pomeroy; Serum Therapy, by Dr. E. M. Dixon, of Stockdale; Diagnosis of Conditions Affecting the Upper Half of the Abdomen, by Dr. Frank Winders, of Columbus; Gunshot Wounds of the Abdomen, by Dr. T. H. McCann, of Scioto; Ectopic Gestation, by Dr. E. T. Dando, of Wellston; Gonorrhoeal Infection in the Female, by Dr. Lester Keller, of Ironton. The annual banquet will be held in the evening.

The Present Status of Obstetrical Teaching in Europe and America.—Announcement is made that a committee has been appointed by the president of the American Gynaecological Society who will present a report at the next annual meeting of the society on the present status of obstetrical teaching in Europe and America, and will recommend improvements in the scope and character of the teaching of obstetrics in America. The committee consists of the professors of obstetrics in Columbia University, the University of Pennsylvania, Harvard University, Jefferson Medical College, Johns Hopkins University, Cornell University, and the University of Chicago. Communications from any one interested in the subject will be gladly received by the chairman of the committee, Dr. B. C. Hirst, 1821 Spruce Street, Philadelphia, Pa.

The Ninth Annual Conference of Sanitary Officers of New York State will be held in Rochester on November 10th, 11th, and 12th. An unusually good programme has been arranged, and elaborate preparations have been made to make the conference a great success in every particular. Among those who have consented to address the conference are Dr. C. O. Probst, secretary of the Ohio State Board of Health; Dr. M. L. Price, secretary of the Maryland State Board of Health; Passed Assistant Surgeon Lumsden, of the Public Health and Marine Hospital Service; Mr. F. L. Hoffman, of the Prudential Insurance Company; Dr. C. L. Wilbur, of the United States Census Bureau, and Professor Sedgwick, of the Massachusetts Institute of Technology. One of the most important subjects that will be discussed at this conference is the purification of our water supplies and the prevention of their pollution.

Kentucky State Medical Association.—The fifty-fourth annual meeting of this association, which was held in Louisville on October 19th, 20th, and 21st, was one of the most successful in the history of the organization. It is said that six hundred and fifty-one members registered, an attendance which broke the record, not only for the Kentucky association, but for every other State association in the United States. At the meeting of the House of Delegates, Lexington was chosen as the next meeting place, the date to be decided upon later. New officers were elected as follows: President, Dr. J. E. Wells, of Cynthia; first vice-president, Dr. P. H. Stewart, of Paducah; second vice-president, Dr. J. O. Carson, of Bowling Green; third vice-president, Dr. J. S. Lock, of Louisville; orator in medicine, Dr. D. O. Hancock, of Henderson; orator in surgery, Dr. J. A. Hendon, of Louisville; representatives to the American Medical Association meeting, Dr. W. B. Boggess, of Louisville, and Dr. B. F. Van Meter, of Lexington. At last year's meeting Dr. A. T. McCormack was elected secretary and Dr. W. B. McClure, of Lexington, treasurer, each for a period of five years.

Scientific Society Meetings in Philadelphia for the Week Ending November 6, 1909:

MONDAY, November 1st.—Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society.
TUESDAY, November 2d.—Wills Hospital Ophthalmic Society; Academy of Natural Sciences; Philadelphia Medical Examiners' Association.
WEDNESDAY, November 3d.—College of Physicians.
THURSDAY, November 4th.—Obstetrical Society; Germantown Branch, Philadelphia County Medical Society; Southwark Medical Society; Section Meeting, Franklin Institute; Delaware Valley Ornithologists' Club.
FRIDAY, November 5th.—American Philosophical Society; Kensington Branch, Philadelphia County Medical Society.

Demonstrations in Experimental Medicine.—A graduate course consisting of thirty laboratory demonstrations will be given by the departments of Physiology, Pharmacology, Surgery and Bacteriology, of Columbia University. The instruction will be given by Dr. Haven Emerson, Dr. William R. Williams, Dr. J. W. Draper Maury, and Dr. Augustus Wadsworth. The sessions will be held from three to five p. m., on Tuesdays, Thursdays, and Saturdays in November and December, 1909, and January, 1910. The course is intended to offer to physicians an opportunity to see demonstrated the more important and practical of the experiments of modern medical research and thus to come into critical touch with the newer laboratory methods as applied at the bedside in both medicine and surgery. The fee for the entire course will be fifty dollars, and portions of the course or individual sessions may be attended at the rate of two dollars for each session. Inquiries and applications should be addressed to Mr. E. K. Hoyt, Assistant Registrar, 437 West Fifty-ninth Street, New York, N. Y.

The Associated Physicians of Long Island held their thirty-fifth regular meeting at Rockville Centre on Saturday, October 23d, under the presidency of Dr. Frank De Lano, of Rockville Centre. An interesting programme was presented which included a paper on High Caloric Diet in Typhoid Fever, by Dr. Harris A. Houghton, of Bayside; one on Mastoiditis in Scarlet Fever and Measles, by Dr. H. A. Alderton, of Brooklyn; and one on Traumatic Affections of the Knee Joint, by Dr. Roland Hazen, of Brentwood. At the close of the meeting dinner was served, at which Dr. Frank H. Clark presided. The officers of the society are: President, Dr. Frank T. De Lano, of Rockville Centre; first vice president, Dr. Thomas R. French, of Brooklyn; second vice president, Dr. Frank Overton, of Patchogue; third vice president, Dr. William B. Brinsmade, of Brooklyn; secretary, Dr. James Cole Hancock, of Brooklyn; treasurer, Dr. Charles B. Bacon, of City Hospital, Blackwell's Island; board of directors, Dr. Frank T. De Lano, Dr. H. Beckman Delator, Dr. Thomas R. French, Dr. James Cole Hancock, and Dr. Charles B. Bacon.

Society Meetings for the Coming Week:

MONDAY, November 1st.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.
TUESDAY, November 2d.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association.
WEDNESDAY, November 3d.—Society of Alumni of Bellevue Hospital; Psychiatric Society of New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.
THURSDAY, November 4th.—New York Academy of Medicine; Danville, N. Y., Medical Association.
FRIDAY, November 5th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society; Manhattan Clinical Society; Practitioners' Society of New York.

The Health of Pittsburgh.—During the week ending October 16, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 3 cases, 0 deaths; typhoid fever, 10 cases, 1 death; scarlet fever, 37 cases, 3 deaths; diphtheria, 10 cases, 6 deaths; measles, 4 cases, 1 death; whooping cough, 2 cases, 0 deaths; pulmonary tuberculosis, 25 cases, 9 deaths. The total deaths for the week numbered 178, in an estimated population of 572,000, corresponding to an annual death rate of 16.18 in a thousand of population.

Mortality of New Orleans.—During the month of September, 1909, there were 493 deaths from all causes reported to the Board of Health, 305 white and 188 colored, in a population of 265,000 white and 97,000 colored, corresponding to an annual death rate of 13.81 for the white population, 23.25 for the colored population, and 16.32 for the total white and colored population. There were 49 stillbirths, 23 white and 26 colored. The total infant mortality was 101, 75 white and 26 colored; under one year of age, 55 white and 16 colored; between one and two years of age, 11 white and 5 colored; between two and five years of age, 9 white and 5 colored.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statements of the new cases and deaths reported for the two weeks ending October 23, 1909:

	—October 16—		—October 23—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	427	152	542	145
Diphtheria	223	14	259	19
Measles	100	4	119	9
Scarlet fever	112	6	118	3
Smallpox .....	..	..	..	..
Varicella	38	..	44	..
Typhoid fever	116	13	107	25
Whooping cough	53	8	62	4
Cerebrospinal meningitis	8	6	3	4
Total	1,077	203	1,254	209

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York during the week ending October 15, 1909, there were 1,324 deaths from all causes reported to the department, 104 more than for the corresponding week in 1908. The annual death rate in a thousand population was 15.13 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.31; the Bronx, 15.80; Brooklyn, 14.10; Queens, 17.04; and Richmond, 14.72. The total infant mortality was 443; 302 under one year of age, 80 between one and two years of age, and 61 between two and five years of age. Of the total number of deaths of children under five years of age, 140 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 37; pulmonary tuberculosis, 152; diarrhoeal diseases, over five years of age, 140; organic heart diseases, 137; Bright's disease, 97; cancer, 81; pneumonia, 56; bronchopneumonia, 79; suicides, 15; accidents, 60; homicides, 5, making a total of 81 deaths by violence. There were 110 stillbirths. Seven hundred and eighteen marriages and 2,303 births were reported during the week.

African Entomological Research Committee.—A scientific committee whose object is to further the study of economic entomology, with special reference to Africa, has been appointed by the colonial office of the British Government. The committee is composed of Lord Cromer, chairman; Colonel A. Alcock, London School of Tropical Medicine; Mr. E. E. Austen, Natural History Museum; Dr. A. G. Bagshawe, Director of the Sleeping Sickness Bureau; Dr. J. Rose Bradford, secretary of the Royal Society; Colonel Sir David Bruce; Dr. G. F. Harmer, Keeper of Zoology, British Museum; Dr. R. Stewart MacDowell, entomological adviser to the Board of Agriculture; Sir John McFadyen, Royal Veterinary College; Sir Patrick Manson; Mr. R. Newstead, Liverpool School of Tropical Medicine; Dr. G. H. F. Nuttall, Quick Professor of Biology, Cambridge University; Professor E. B. Poulton, Hone Professor of Zoology, Oxford; Lieutenant Colonel D. Prior, Director of the Royal Botanical Gardens; Kow; Mr. H. J. Read, representing the colonial office; Hon. N. C. Rothschild; Dr. D. Sharp; Dr. A. E. Shinley; Mr. S. Stockman, chief veterinary officer to the Board of Agriculture; Mr. F. V. Theobald, of the Agricultural College, Wyo.; Mr. C. Warburton; Mr. A. C. C. Parkinson, secretary of the committee; Mr. Guy A. K. Marshall, scientific secretary.

The Health of Philadelphia.—During the week ending October 16, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 38 cases, 4 deaths; scarlet fever, 27 cases, 0 deaths; chickenpox, 23 cases, 0 deaths; diphtheria, 95 cases, 7 deaths; measles, 6 cases, 1 death; whooping cough, 4 cases, 0 deaths; tuberculosis of the lungs, 63 cases, 48 deaths; pneumonia, 21 cases, 24 deaths; erysipelas, 4 cases, 0 deaths; mumps, 1 case, 0 deaths; puerperal fever, 1 case, 3 deaths; tetanus, 1 case, 3 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 5 deaths; diarrhoea and enteritis, under two years of age, 33 deaths; dysentery, 1 death; cholera morbus, 1 death. The total deaths numbered 409 in an estimated population of 1,565,560, corresponding to an annual death rate of 13.52 in a thousand of population. The total infant mortality was 92; 79 under one year of age, and 13 between one and two years of age. There were 33 stillbirths; 20 males and 13 females. The total precipitation was .41 inch.

National Conference on Pellagra.—As previously stated in our columns, a national conference on pellagra will be held on November 3d and 4th, at the State Hospital for the Insane, Columbia, S. C., under the auspices of the South Carolina State Board of Health. The preliminary programme, which has just been received, includes a list of thirty papers on the various aspects of the disease, with lantern slide demonstrations and the exhibition of patients. Among those who have promised papers for this conference are Assistant Surgeon General J. W. Kerr and Passed Assistant Surgeon C. H. Lavinder, of the Public Health and Marine Hospital Service; Dr. Joseph F. Siler and Dr. H. J. Nichols, captains in the medical corps of the United States Army; Mr. E. J. Watson, commissioner of the Department of Agriculture, Commerce and Industries, of Columbia, S. C.; Dr. H. F. Harris, secretary of the Georgia State Board of Health; Dr. A. Marie, of Paris, France, and Dr. Isadore Dyer, dean of the Medical Department of Tulane University. In addition to the papers listed on the programme, several others have been promised, and it is expected that the final programme will embrace every phase of the whole pellagra problem. The question of the desirability of establishing a permanent national organization for the study of pellagra will be brought up during the conference. Physicians, sanitarians, and delegates to the conference are requested to send suggestions and titles of contributions at once to Dr. C. F. Williams, secretary of the State Board of Health, Columbia, S. C.

Gifts and Bequests to Charity.—By the will of Ellen C. de Q. Woodbury, late of Washington, D. C., the Home for Incapables will receive \$3,000, and the Chase Home and the Cottage Hospital at Portsmouth, N. H., will each receive \$500. A number of securities left by the decedent are to be distributed equally among the following named institutions: Home for Incapables, for a cancer ward; National Homoeopathic Hospital, for the treatment of female patients; George Washington University, for the care of female patients at its hospital; Aid Society for the Blind, Woman's Hospital, of New York City, and the New York Woman's Medical College and Hospital.

By the will of Madame Louise Houdaver, who died recently in Brooklyn, the Union Industrial Home, of Trenton, N. J., will receive \$5,000, and the Widows' and Single Women's Home will receive \$2,000.

By the will of Mr. Joseph W. Stevens, Mercer Hospital, Trenton, N. J., will receive a bequest amounting to over \$2,000.

Mr. Andrew Carnegie has given to the Pennsylvania State Board of Health a tract of 450 acres of land on the crest of the Allegheny Mountains, near Cresson, as a site for a tuberculosis sanatorium for Western Pennsylvania.

Mrs. Sarah Todd, who died in Carlisle, Pa., on October 20th, left more than half a million dollars to establish a home for Carlisle's indigent women over fifty-five years of age, and named it the Todd Hospital.

The will of Mrs. Ettie Henderson, who died in Long Branch, N. J., on October 7th, contained a bequest of \$2,000 to the Actors' Fund of America, to be used for the establishment and maintenance of a hall in the New York Hospital, to be used by actors or actresses, and to be known as the Henderson Memorial Hall.

The William E. Pusey Institute of Science of Philadelphia, will receive \$2,000, by the will of Dr. Henrietta P. Westbrook, who died recently in Pascoag, R. I.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 14, 1909.

1. Postoperative Acute Dilatation of the Stomach,
By HOMER B. SMITH.
2. Neoplasms of the Penis, Scrotum, Testicle, and Cord,
By OLIVER C. SMITH.
3. New Growths of the Prostate and Bladder,
By ROBERT HOLMES GREENE.
4. Neoplasms of the Kidney and Ureter,
By J. BENTLEY SQUIER.
5. Cystoscopy in New Growths of the Urinary System,
By LINCOLN DAVIS.

1. Postoperative Acute Dilatation of the Stomach.—Smith says that acute dilatation of the stomach is not rare. It is of comparatively frequent occurrence after surgical operations done under general anesthesia. The cases vary greatly in severity. It is presumable that many mild cases, which are unrecognized, but which occur in patients having a "stormy convalescence," get well without treatment. It is also presumable that some deaths following operation where the cause of death is not understood are the result of this condition. Its occurrence cannot be forecasted. The evidence is against a mechanical process as the primary causative factor. The weight of evidence favors a primary gastrointestinal paralysis, manifesting itself most severely in the stomach on account of the anatomical relations of that organ. The paralysis may be central in origin or peripheral or both. Its exact source is at present undetermined. The paralysis, of whatever source, is transitory and exists largely as fatigue. Prolonged operative procedures, trauma, and anesthesia are the most probable causes of this paralysis, narcosis being the chief factor. Mesenteric compression, if present, is secondary. The most constant and characteristic symptom is the welling up of small amounts of bile stained fluid at a time when postanesthetic vomiting should have ceased. The most reliable diagnostic measure is the passage of the stomach tube. The prognosis is good if the condition is recognized early and treated at once; otherwise it is bad. Active treatment is directed to the relief of paralysis and the promotion of peristalsis by evacuation of the stomach contents and the evacuation of the bowel contents. Operative procedures are not indicated. Prophylactic treatment is directed to the minimization of operative trauma and anesthesia. Finally, rational preventive treatment for acute dilatation of the stomach will not be possible until the problem of its etiology is definitely solved. Laboratory experimentation will accomplish much toward this end, but the greatest factor toward the solution of the problem will be clinical observation and study of cases. To this end all cases should be reported in detail.

3. New Growths of the Prostate and Bladder.—Greene reviews the present condition of cancer of the prostate. He says that the most prominent symptom is pain; the next, hemorrhage. Objectively, it is difficult ordinarily to diagnose by the touch. Malignant growths feel harder than other enlargements. Residual urine is of no diagnostic value in regard to its amount. Neither is any great enlargement of the prostate. Cancer of the

prostate may cause a tumor of very large size jutting up into the bladder before the surrounding tissues apparently are invaded to any considerable extent. There may be marked change occurring in an individual with a hypertrophied prostate already under observation, such as pain, if it did not previously exist, and a nodular condition appeared to the touch which had not previously been present, should excite suspicion of malignancy. Such factors as rapid emaciation or enlargement of the inguinal glands should also receive consideration. Sarcoma of the prostate gives little hope of recovery. The great factor here in the diagnosis is the age of the patient, and early removal of sarcoma would seem to indicate that the prognosis is not necessarily hopeless as was formerly considered the case. Concerning the treatment, the writer is in doubt as to the best procedure to adopt. The main idea should be to remove such growths before they have invaded the tissues outside the prostate, either by the superpubic route or by any of the various perineal routes. Other things being equal, it should be remembered that the general condition of the sufferers from these growths is almost invariably below par, and the quickest way in which the growth can be removed is the best way. Concerning the operation for the total removal of the prostate with amputation of the neck of the bladder, its value has not as yet been clearly demonstrated. The statistics of relief following this operation are unreliable from the fact that some of the cases reported as malignant which have been relieved through this operation have not been cases of true carcinoma; they have been cases in which the cells have not broken through the investing membrane. The author says, operation should not necessarily be refused even if there is not much hope of total removal of the growth; in fact, it is very hard to tell when the malignant growth has been totally removed, as the bladder walls may have become already involved without direct evidence of its being present. From what experience the writer has had in his own practice, which is somewhat limited, hopeless cases in which more or less radical operation was performed apparently suffered less than those cases which he has observed in which no operation was undertaken beyond the installation of permanent drainage.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 23, 1909.

1. A Method of Complete Nephroureterectomy in Women.
By J. WESLEY HOWE.
2. Cardiac Thrombosis; The Clinical and Pathological Findings in Three Cases.
By FRANK SMITHIES.
3. A New and Satisfactory Apparatus for Etherization in Operations about the Face and Upper Air Passages,
By ALBERT H. MILLER.
4. Vaginal Hysterectomy,
By RALPH ELMERGREEN.
5. The Pathology of Eclampsia and Toxæmia of Pregnancy,
By J. E. WELCH.
6. A Study of Eclampsia in the Lying In Hospital of the City of New York,
By ROSS MCPHERSON.
7. The Treatment of Diabetes Mellitus, By J. RUDISCH.
8. Acanthosis Nigricans; A Symptom of a Disorder of the Abdominal Sympathetic,
By S. POLLITZER.
9. Simulated Insanity,
By CHARLES K. MILLS.
10. Final Result in Conservative Surgery on the Ovaries,
By JOHN OSBORN POLAK.

11. Treatment of Puerperal Infection: A Study of the Cases Treated during the Last Four Years.

By THOMAS J. WATKINS.

12. Care of the Tuberculous at Dispensaries of the Chicago Tuberculosis Institute; Tuberculin as a Diagnostic and Therapeutic Agent.

By JOHN RITTER and CLARENCE S. WHEATON.

1. **A Method of Complete Nephroureterectomy in Women.**—Bovee describes his method thus: The patient is put on the operating table in the Simon position and the loin area prepared for operation. The anterior vaginal wall is then grasped by a volsella and the cervix pulled downward and toward the introitus to locate the interureteric ligament. On the vaginal wall, exactly opposite the ureterovesical junction, will now be seen a small dimple. From the outer side of this dimple an incision is made downward and outward along the course of the ureter. It should be from one to one and a half inches in length. By careful blunt dissection the ureter is easily exposed and hooked down. If it is considerably enlarged, as it commonly is in tuberculous cases, this procedure is very easy. A metal hook or a piece of suture material is passed around it, and gentle traction made on it facilitates its liberation through the broad ligament. If it is very large, one half to three fourths of an inch in diameter, it may be advisable either to ligate or to clamp and sever it, after which it becomes more mobile and can be moved far outward to facilitate its liberation. If excision from the bladder is thought desirable it may now be done, one layer of sutures being placed first, and the second, if deemed necessary, after the excision is made and the first layer of sutures tied. A ligature is then placed on the free end of the ureter if a clamp was used. The patient is next changed to the supine position, and opposite the lower pole of the affected kidney a transverse (König) incision four inches or longer is made through the extraperitoneal portion of the abdominal wall. Its inner end need not be inside the semilunar line. The kidney is now liberated and brought out through this incision and its vessels clamped or tied either before or after it is brought out. By gentle traction on the kidney the fingers are assisted in separating from surrounding structures the ureter to the pelvis, and it is pulled out of the wound with surprising rapidity and facility. If careful dissection has not been accompanied by escape of pus from the kidney or ureter or from a perinephritic abscess, little attention to drainage will be necessary. This plan markedly reduces the duration and traumatism of the operation, two points of great consideration in very delicate patients. It facilitates to a remarkable extent liberation of the lower portion of the ureter, provides simple and independent drainage, permits removal of the kidney and ureter in one piece; allows closure of the wound, except when much pus is spilled; does not exhaust the patient by changing her position during the operation—often a waste of time—and simplifies the preparation of the patient for operation. It does not require any special apparatus for detection of the lower end of the ureter or for its exposure and liberation. The loin incision usually heals promptly and with a small cicatrix.

3. **A New and Satisfactory Method for Etherization in Operations about the Face and Upper Air Passages.**—Miller has devised an apparatus

which provides for continuous etherization of the patient and interferes in no way with the operation. It consists of a vaporizer, a foot pump, a mouth gag, and other accessories, together with the rubber tubing necessary for connecting these to the vaporizer. The vaporizer consists of a glass jar, with a capacity of eight ounces, hermetically closed by a screw cap. In the cap are fixed an inlet tube, $\frac{3}{8}$ inch in diameter, and a vertical outlet tube, $\frac{1}{4}$ inch in diameter. Inside the jar and connected with the inlet tube is a small atomizer arranged to draw ether from the jar and spray it inside the outlet tube, which is 5 inches long. When the ether spray reaches the top of this tube it has been converted into a vapor, imperceptible except by its odor. This apparatus will vaporize fifteen ounces of ether in an hour. As the ether is sprayed into the outlet tube and not against the side of the jar as in the ordinary nebulizer, the vaporizer is very sensitive to changes in the air pressure supplied to it. The foot pump, which supplies the air pressure for the vaporizer, may be supplanted by a cylinder of oxygen or compressed air. A hand bulb does not provide enough pressure to work the vaporizer. It is impossible to force liquid ether into the outlet tube by pumping air into the inlet tube and *vice versa*. A rubber tube, $1\frac{1}{2}$ feet long, connects the foot pump with the vaporizer. The outlet tube is connected by 4 or 5 feet of rubber tubing to a mouth or nasal tube. As the ether vapor passes through this rubber tube it becomes warmed to the temperature of the operating room. This tube is divided six inches from the mouth or nasal tube, the parts being joined by a glass connection so that the short end may readily be removed for sterilization. The mouth gag is not readily dislodged, does not obstruct the breathing, and in no way interferes with the operation. The handles are so curved as to be readily grasped. In one jaw of this gag is incorporated an ether tube, $\frac{1}{8}$ inch in diameter. When the gag is placed in the left side of the mouth, the tube is in the upper jaw of the gag and its opening is directed backward toward the fauces. The mouth tube is a metallic tube of $\frac{3}{4}$ inch bore so curved that when it is hooked into the angle of the mouth, its opening is directed backward toward the fauces. The nasal tube is a soft rubber tube, $\frac{3}{8}$ inch in diameter and 14 inches long. A mark, at a distance of 7 inches from the end, indicates the extent to which it should be introduced in an adult. From failure to notice this mark, the tube may be pushed so far into the oesophagus that a gastric anaesthesia results.

4. **Vaginal Hysterectomy.**—Elmergreen says that vaginal hysterectomy is only indicated in a limited class of cases. Among these he mentions cancer of the cervix, and cancer of the uterine canal in both cervix and fundus, with movable uterus; extreme prolapse of uterus and bladder; extreme retrodisplacement with metritis in women who have passed the climacteric. Whenever applicable, vaginal hysterectomy has many advantages over abdominal hysterectomy, not the least of which is the avoidance of shock, and the corresponding quick recovery in elderly patients. Women are singularly tolerant to operative traumatism inflicted on the pelvic organs by the vaginal route. Vaginal hysterectomy has no horrors to most women suffering from cancer of the uterus, and the operation may serve as

a psychic lever to turn patients toward surgical aid in the early stages of this dreadful disease. The technique of vaginal hysterectomy often presents great difficulties; but these are seldom unsurmountable. Injury to the ureters, and hæmorrhage, both primary and secondary, can be avoided by modern methods. Cystocele and prolapse of the bowel can be completely overcome by this method.

7. **The Treatment of Diabetes Mellitus.**—Rudisch thinks that atropine has a more marked influence on the sugar excretion than any of the drugs that have heretofore been tried. It has the advantage of being well borne in large doses, if given cautiously and in gradually increasing amounts. In two and a half years' clinical experience he has not found that a habit has been established in any case or that there are any bad effects on the general health from its prolonged administration. With atropine the glycosuria disappears much more rapidly than with a carbohydrate free diet alone. When, with the cautious increase in carbohydrates in patients whose urine has become sugar free, sugar again appears, it is often possible to suppress the sugar excretion solely by atropine without reducing the carbohydrates. In other words, the carbohydrate tolerance is greater with atropine than without. The sulphate is the form most generally used in the wards. Methyl bromide (Merck) has certain advantages. It is much less toxic than the sulphate and is therefore safer for patients who are not under daily supervision. Its action is not as striking as that of the sulphate. The glycosuria does not disappear as rapidly nor is the limit of carbohydrate tolerance raised as soon as with the sulphate. Its expense, too, limits its use somewhat. Extremely large doses of methyl bromide of atropine are well borne if given with care. He has found that an initial dose of gr. 2/15, t. i. d., can be safely used in adults and can be increased by gr. 1/15 at a time until gr. 8/15 are being given three times daily. In one instance three grains were given daily over a short period with no other disagreeable effect than dryness of the throat. In children he advises gr. 1/60, t. i. d., as an initial dose. With the sulphate the initial dose in adults was gr. 1/150, t. i. d., increased slowly in some cases up to gr. 1/20, t. i. d. When the toxic effects were observed, a rapid pulse, flushed cheeks, dry throat, and dilated pupils, he either stopped increasing the dose for a time or stopped the drug entirely. Later it was always possible to resume its administration.

12. **Tuberculin.**—Ritter and Wheaton, from their experience, come to the conclusion that in cases of pulmonary tuberculosis without elevated temperature and low resistance, the proper administration of tuberculin is of undoubted efficacy. Tuberculin is capable of producing great injury to the patient and this injurious influence calls for the greatest discretion in its proper administration. There is frequently increased cough and expectoration following its injection. This, in itself, is not an untoward symptom. Tuberculin is an expectorant, *par excellence*. Persistence of such clinical manifestation as general lassitude and physical weakness should cause the discontinuance of its administration. In the presence of a mixed infection with high temperature incident thereto the use of

tuberculin is inexpedient. The opsonic findings in dispensary practice are impracticable at this time. Clinical study is absolutely essential in determining the size and frequency of the dose. They caution against the use of tuberculin in advanced cases with positive findings. In this stage alarming results have followed its administration. Tuberculin should not be administered to any patient unless it is possible to obtain an accurate daily record of the case. Pulmonary hæmorrhages are contraindications to the use of tuberculin, should slight hæmorrhages manifest themselves during the treatment its use must be discontinued at once.

MEDICAL RECORD.

October 23, 1909.

1. Critical Remarks on Ehrlich's Sidechain Theory of Immunity,
By J. W. McLAUGHLIN.
2. Emyema of the Antrum of Highmore: Its Relation to Other Diseases, and Its Treatment,
By WOLFF FREUDENTHAL.
3. Further Observations Upon Rigidity of the Chest Muscles as a Sign of Involvement of the Pulmonary Parenchyma,
By F. M. POTTINGER.
4. The Therapeutic Value of the Antigonococcic Serum and Gonococcic Bacterins,
By GEORGE KNOWLES SWINBURNE.
5. The Use of Ethyl Chloride as a General Anæsthetic for Operations in the Throat as Especially Applied to Children,
By E. MATHER SILL.
6. Intestinal Keratitis in Acquired Syphilis,
By S. LATIMER PHILLIPS.
7. A New Physical Sign, Probably a Skin Reflex, Whereby Solid Organs, Such as the Heart and Liver, and Inflammatory Processes Found in the Lungs and Pleura May Be Detected by Palpation,
By F. M. POTTINGER.

2. **Empyema of the Antrum of Highmore.**—Freudenthal says that the first ætiological factor to be considered in empyema of the antrum of Highmore are the teeth. There is a considerable number of persons in whom the teeth (especially the first and second molar) protrude into the antrum. The osseous part of the cavity is sometimes so thin that it breaks easily when a tooth is extracted, thus opening the maxillary sinus. That an acute empyema may develop in such a way is well known. It is only surprising that infection does not more frequently occur in this manner. Much more frequently, however, dental caries perforates the bone and penetrates the cavity of the antrum. In fact, in the early period of our surgical work in the field of rhinology we seldom did much more than drill a hole through the alveolar process and syringe the antrum. At that time it was the belief that the majority of the cases of empyema were caused by disease of the teeth. As so often happens, this view has undergone complete change. In view of the good results now attained with the major operations, one is apt to forget completely the possible dental origin of many cases of empyema. But the majority of cases of empyema of the antrum have their origin in the nose. Think of the intimate connection of the nasal mucosa with that of the antrum, remember the position of the natural and accessory ostia, and you will easily understand how a mucocele, hydrocele, and finally an empyema, may develop when these are closed for some time. Now, given a case of empyema of long duration, frequently the reverse happens, namely, that as the result of the long stagnation of the exudate in the

antrum, the teeth which protrude sometimes into the antrum become affected and their integrity is endangered. Therefore it may be correct to say that in some cases of empyema of the antrum the aid of the rhinologist is required; in others that of the dentist. There are other diseases with which empyema of the maxillary sinus is often directly connected. Of these he mentions aprosexia nasalis, affections of the stomach and intestines, tuberculosis, eye diseases, and epilepsy.

5. **Ethyl Chloride.**—Sill advocates the use of ethyl chloride, in which we have a comparatively safe and reliable general anæsthetic, which is most suited for operations for the removal of adenoids and tonsils in children. This anæsthetic is simple of administration and does not require an expert or one of large experience to give it. The patient is under the influence quickly, is out almost immediately upon completion of the operation; there are no unpleasant or dangerous effects from its use either during or after the operation. This anæsthetic is not only especially applicable in operations in the throat, but should be used in most of the other operations performed upon children. When the inhaler is kept over the patient's nose and mouth he can be kept under the anæsthetic as long as desired. It is only when that is removed that the patient regains consciousness more quickly than with other anæsthetics. Where long operations are necessary on the nose or throat he advises first putting the patient under ethyl chloride and then continuing deep anæsthesia with ether, using the drop method.

THE BRITISH MEDICAL JOURNAL.

October 9, 1909.

1. Experimental Research and Medical Progress,
By Sir JOHN TWEEDY.
2. Complement Fixation as a Method of Diagnosis Applied to Syphilis and General Paralysis: The Wassermann Reaction,
By J. FROUDE FLASHMAN and A. GRAHAM BUTLER.
3. Note on Alcohol in Relation to Multiple Neuritis,
By JUDSON S. BURY.
4. Paroxysmal Tachycardia Disappearing after an Attack of Herpes Zoster,
By ALAN C. TURNER.
5. Traumatic Rupture of the Small Intestine: Suture and Appendicostomy: Recovery,
By FRANK RADCLIFFE.

2. **Complement Fixation a Help for Diagnosing Syphilis and General Paralysis.**—Flashman and Butler remark that the whole subject of syphilis has reached a stage of great interest and importance. For years the extraordinary clinical manifestations of the disease and the difficulty of obtaining a definite clue to its exact pathology engrossed the attention of observers of the highest powers of observation. Increasing attention was also given to the national importance of the disease as a factor in the production of degenerative processes resulting in serious individual inefficiency and in national physical deterioration. But until the pathology of the disease was placed on a definite and certain basis, all thought in connection with it was more or less incoherent and action vacillating. To the genius of the lamented F. Schaudinn, in the view of practically every authority on the subject, are we indebted, by the discovery of the *Spirochæta pallida* and of its rôle in the production of the disease, for an "open sesame" which will undoubtedly result in a coherent and definite conception of syphilis in all

its aspects, biological, pathological, and clinical, and will thus clear the way for organized efforts, founded on definite knowledge of the ætiology of the disease, for neutralizing its effects, and in some measure at least, minimizing its incidence. The great discovery of Wassermann—a discovery which, whatever the ultimate theoretical explanation of it may be, was undoubtedly based on the conception of syphilis as an infective disease—has opened the way for investigations into which very many workers in the field of biological research have seen sufficient inducement to enter, and new light is almost daily being thrown on the nature of the disease and of its manifestations. The method of complement deviation upon which this most important and far reaching means for extending our knowledge of the nature of syphilis depends, is one which has proved highly fruitful in results in other fields of investigation, and engrosses a large amount of attention in both its theoretical and practical aspects. The conditions which lead to active or passive anticomplement action and the explanation of the action, the nature of complement, antibody, antigen, etc., and the meaning of their variations under different conditions are being studied with such vigor that our knowledge of them will undoubtedly soon be much more definite and certain. Our conception, indeed, of infective disease in general, and probably of many diseases not at present so regarded, will, in the not remote future, be so altered and enlarged that our present knowledge will seem rudimentary and crude. It is more and more becoming apparent that every man aspiring to practise medicine must in the future, if he wishes to keep abreast of the advances, not only in the science, but in the art of medicine and surgery, have a very much fuller and more practical acquaintance than is at present considered necessary with the knowledge now available, as the result of an enormous amount of research and thought, of the mechanism and conditions of infective disease.

THE LANCET

October 9, 1909.

1. Some Thoughts on Causation in Health and Disease,
By the Right Hon. Lord Justice FLETCHER MOUNTON.
 2. Abstracts of Introductory Addresses, delivered at the Medical Schools at the Opening of the Session 1909-10.
By H. A. MIERS, Sir T. CLIFFORD ALBUTT, Sir ISAMBARD OWEN, Sir JOHN TWEEDY, and J. STRICKLAND GODDALL.
 3. Clinical Significance of Albuminuria,
By NESTOR TIRARD.
 4. An Investigation into the Ætiology of Erysipelas and Allied Infections, By P. N. PANTON and J. E. ADAMS.
 5. A Case of Syphilitic "Reinfection" Nine Years after, with Some Remarks on Syphilitic "Immunity" and a Note on Treatment,
By HENRI DARDENNE.
 6. A Corneoconjunctival Bridge: A New Method of Cataract Extraction,
By NEVEN GORDON CLUCKIE.
 7. The Poor Law Medical Service: Coming Legislation,
By WILLIAM HOLDER.
 8. The Vaccination Acts and the Growth of "Conscientious Objection,"
By LEONARD B. CANE.
 9. Motoring Notes,
By C. T. W. HIRSCH.
3. **Clinical Significance of Albuminuria.**—Tirard observes that a large amount of albumin, without blood or pus, may generally be taken to indicate chronic tubal nephritis, and this can be confirmed by a high specific gravity, by microscopical examination, and by the appearance of the patient. A very

small trace in an elderly or middle aged man will probably indicate chronic interstitial nephritis; confirmatory evidence can be found in the aspect, the history, the pulse tension and tracing, the outward displacement of the cardiac impulse, the accentuation of the systolic apical sound, and the accentuation and reduplication of the second sound at the base of the heart. These indications may be further supported in some cases by the pale color and low specific gravity of the urine; less frequently information may be gathered from the presence of casts and from their predominant characteristics. The absence of casts is not, however, to be regarded as an indication that the case is not one of chronic interstitial nephritis. In a young man a mere trace of albumin may be the only evidence of a functional albuminuria, and the diagnosis must then rest upon negative evidence to a large extent, one of the most important factors being the relatively high specific gravity, unless this has been influenced by nervousness or by the recent consumption of a large quantity of liquid. With the same limitations the deep color of the urine will lend confirmatory evidence. There are so many causes for great variations in the condition of the urine that stress cannot be laid upon the amount of albumin without paying due regard to most of the changes which have been touched upon in this lecture. After all, albumin is merely an indication of an abnormal condition, it is not a disease. Therefore, as with every other symptom, by itself it affords no reasonable ground for a diagnosis. Numerous other signs and symptoms must be carefully weighed, perhaps at short intervals, before it is justifiable to express more than a provisional diagnosis.

4. **Ætiology of Erysipelas and Allied Infections.**—Panton and Adams define erysipelas as an acute inflammation of the epidermis due to the presence of one of the organisms of the streptococcus class, of which the *Streptococcus pyogenes* is the most frequent example. Cellulitis appears to be a strictly comparable inflammation of the cellular tissues, and when the inflammatory processes involve both the epidermis and the cellular tissues the condition of cellulocutaneous erysipelas results. Acute lymphangitis would seem to be a less virulent infection due, as a rule, to organisms of the staphylococcus class, with a greater tendency to spread, as its name implies, by the lymphatic system. Erysipelas is not, in the true sense of the term, a specific disease, since it may be produced by a variety of organisms, and these organisms are capable of producing other diseases in other parts of the body. In the shortness of its incubation period, in the acuteness of its onset—often with marked constitutional disturbances, in its course, in its usual tendency to early and spontaneous cure, and in the nature of the immunity which it confers, erysipelas presents a striking parallel to both acute cellulitis without local suppuration and to acute lobar pneumonia. Nor is it surprising that such similar diseases should all be due, as a rule, to organisms of the same class, the differences in the effect of each disease to the individual being caused by the differences in the localities attacked. It has long been recognized that acute lobar pneumonia may be produced not only by the pneumococcus but also by

other similar organisms, such as the *Streptococcus pyogenes*, and that the pneumococcus is capable of effecting an entry and producing disease in other localities than the lung, and our authors believe that an extension of similar views to the nature of erysipelas constitutes the true ætiology of the disease.

5. **Syphilitic Reinfection.**—Dardenne is of the same opinion as so many authors that the best safeguard, in fact, the only safeguard, which a syphilitic can possibly have to avoid these irreparable catastrophes, recurrences, and reinfections, consists in a long course of treatment which has been methodically carried out, and at frequent and successive intervals extending over a period of several years. Immunity in syphilis has only a relative significance. It does not, in the least, imply an absolute cure. Mercury, and mercury alone, can, just like vaccination in smallpox, confer a temporary immunity, more or less long, against the specific virus which is in the organism, and which at any time can reveal its existence by inducing fresh syphilitic manifestations; this, at the same time, conferring a relative refractory condition to the skin and mucous membrane against possible reinfection, though reinfection can take place again in tissues which are far from being absolutely sterilized—i. e., free from all specific spirochæta. It is not, therefore, in the least an absolute proof when it takes place again that the patient at the time of reinfection is absolutely free from all specific organisms. We may consider it as a possibility, but not as an absolute certainty. For these reasons it is just as necessary, if not more, for a syphilitic to undergo a fresh course of "remercuration" at successive and even distant intervals as it is for any one of us at times to be revaccinated. It is, at all events the only means that we possess at present to secure a more or less temporary relative immunity to the syphilitic, and thus guard him against the noxious effects of the spirochæta of his infected tissues. For, with our present knowledge, we must candidly admit, that we cannot, and ought not to, give a definite answer to the syphilitic when we are asked by him whether he is cured or not, no matter how energetic, long, and scientific the treatment has been. Our author has no hesitation in saying that the more he sees of syphilis the less inclined he feels to give a positive answer, lest the patient may come back to him at some future time the unfortunate victim of some severe syphilitic manifestation, and thus be the living contradiction to a too optimistic and scientifically unfounded assertion. This has certainly been the experience, so far, of the vast majority of those among us who have had much to do with syphilis and its special study.

LA PRESSE MEDICALE.

August 11, 1909.

1. Foreign Bodies and False Foreign Bodies in the Œsophagus and Bronchi. By GUISEZ.
2. The Effects of Lactic Bacteriotherapy on Intestinal Digestion. By H. LABRIÉ and G. VITRY.
3. Is Hæmoptysis an Essential Supplement to Menstruation? By ALFRED MARTINET.

1. **Foreign Bodies in the Œsophagus and Bronchi.**—Guisez reports his experience with sixty-two cases of this kind, forty-two in the Œsophagus and twenty in the bronchi, during the past five

years. He says that we are very often not able to absolutely affirm or deny the presence of foreign bodies in the œsophagus or bronchi. He describes the armamentarium used by him for diagnosis as well as for extraction, œsophagoscopy, radiography, and special designed instruments. He also remarks on the tolerance of the œsophagus for foreign bodies.

2. **The Effects of Lactic Bacteriotherapy on Intestinal Digestion.**—Labbé and Vitry have investigated the influence exerted by lactic bacilli upon intestinal digestion and remark that lactic bacteriotherapy is contraindicated in all cases in which the patients should receive nourishment rich in nitrogen. In the tuberculous, especially, it is useless to force albuminous alimentation which surpasses his ability of absorption, as this ability is very often diminished. It is also useless to try to restore this ability of absorption by lessening the amount of nitrogen.

August 18, 1909.

1. Rapid Delivery by Instrumental Dilatation of the Cervix Uteri, By E. BONNAIRE.
2. Researches into the Causes for Success and Failure of Thiosinamine, By MAURICE PERRIN.
3. Hepatic Disturbances in Psychopolneuritis, By ARSIMOLIS and HALBERSTEDT.

2. **Positive and Negative Results from Thiosinamine.**—Perrin says that the positive and negative results derived from the use of thiosinamine can be explained if we give up the theory of elective action of this product upon the connective tissue and accessorially upon the tissues of mesodermic origin. The embryology and pathological histology of the lesion show the part which the connective tissue assumes and the possibility or impossibility of the elements to regenerate, thus indicating for each case success or failure of thiosinamine.

August 21, 1909.

1. Rapid Delivery by Manual Dilatation of the Cervix Uteri, By E. BONNAIRE.
2. Fluctuations in Uranalysis in Health and Disease, By H. LABBÉ and G. VITRY.
3. Radium Therapy in Concrete Sebaceous Acne or Senile Keratonia,

1. **Rapid Artificial Delivery.**—Bonnaire says that rapid artificial delivery can be accomplished by dilatation of the cervix with a balloon, with metallic divulsors, and with the hand. In his article of August 18th, he speaks of instrumental dilatation, citing the instruments in use. In his present article he describes the manual dilatation, which method he prefers. Assistants and instruments are not necessary, an anæsthetic is usually superfluous, there will be seldom injury to the parts, and the muscular effort of the physician is not greater than in instrumental delivery. It should not be applied in severe hæmorrhage. He gives statistical material of 171 cases; Small laceration of the cervix in twenty cases; large lacerations in seven cases; of these twenty-seven laceration cases seven women died; the total mortality was thirty-one.

August 25, 1909.

1. The Cancer Problem in Its Relation to Biology, By L. HALLION.
2. Bacteriological and Cytological Peculiarities in Cerebrospinal Meningitis, By G. FISCHER and P. SCHEZZER.
3. Tenotomy of the Tendon Achillis, By VIGTOR VEAU.

2. **Bacteriological and Cytological Peculiarities in Cerebrospinal Meningitis.**—Fischer and Schezzar report two cases of cerebrospinal meningitis. They conclude that there may exist bacilli of great motility in the cerebrospinal fluid of patients suffering from primary or secondary cerebrospinal meningitis. These bacilli appear in fresh culture of yellow tint, quick in motion, short and stocky, Gram negative; while in older culture the bacilli are Gram positive, elongated, more coccilike.

LA SEMAINE MEDICALE.

August 18, 1909.

1. The Danger in Exploratory, Disinfecting, or Palliative Interventions in Uterine Cancer, By R. DE BOVIS.
2. Quantitative Renal Impermeability, By V. COURTELEMART.

1. **Danger in Exploratory, Disinfecting, or Palliative Intervention in Uterine Cancer.**—De Bovis refers to an article of P. Zacharias in *Mónatschrift für Geburtshilfe und Gynäkologie*, June, 1909, entitled Six Cases of Death after Palliative Intervention in Uterine Cancer, and warns against such intervention as it may be followed by fatal sequelæ. He reviews the literature, from which and his own experience he concludes that von Franqué's method is the safest, that is to lightly curette the evening before the operation takes place the suspected growth after careful antiseptic tamponage and douches with alcohol or tincture of iodine. This preliminary treatment may be prolonged by cauterization in dubious cases in which the parauterine tissues seem to be infiltrated. Lomer, Mund, and Rösing have shown that cauterization often was followed by disappearance of the infiltration, thus making a growth, deemed inoperable before, ready for removal, because it proved only inflammatory and not malignant. Zacharias gives as contraindications for curetting: Pronounced and persistent febrile condition, destruction and great friability of the uterus, pyosalpinx, or a general debility.

August 25, 1909.

The Phenomenon of Life as it is Demonstrated by the Latest Discoveries in Biology and Medicine, By S. JANKELVITCH.

MEDIZINISCHE KLINIK.

September 5, 1909.

1. Flatulence, By EMIL SCHWARZ.
2. Value and Practical Importance of the Serodiagnosis of Syphilis, By GROSSER.
3. Intravenous Injections of Ouabain in Cardiac Diseases, By E. STADELMANN.
4. Permanent Hypertony (Concluded), By J. PAL.
5. Hot Water Treatment in Dermatology, By O. ROSENTHAL.
6. Disturbances of Sensation and Hot Air Treatment, By ARTHUR STERN.
7. The Viscosity of the Blood and Its Diagnostic Importance, By BACHMANN.
8. The Removal of Fatty Acids in Animal Bodies, By ERNST FRIEDMANN.
9. Deviations of the Female Pelvic Organs, By R. FREUND.

1. **Flatulence.**—Schwarz is inclined to ascribe flatulence in most cases to affections of the circulation rather than to local troubles in the intestine and therefore urges that special attention should be paid to the condition of the circulation when such patients come for treatment. In most cases he considers the administration of cathartics and carminatives useless if not actually contraindicated.

2. **The Serodiagnosis of Syphilis.**—Grosser asserts that the nature of the reaction has not yet been sufficiently explained; that the reaction is not purely specific; that its diagnostic value in a positive sense is beyond doubt; that it is insufficient as a single symptom, but must be valued only in conjunction with the clinical picture; in the treatment of syphilitics it serves as a guide to its duration. Its positive presence in latent syphilitics justifies in general a new treatment, a negative result requires frequent repetitions to obtain an approximate conclusion.

3. **Ouabain in Cardiac Disease.**—Stadelmann gives at length the results obtained from the intravenous injection of ouabain in forty-six cases of heart disease divided as follows: Eight of aortic insufficiency, some associated with arteriosclerosis or nephritis; two of insufficiency of the aortic and mitral valves; ten of mitral insufficiency or mitral insufficiency and stenosis, or mitral insufficiency with nephritis; twelve of chronic nephritis with cardiac weakness, part associated with arteriosclerosis; ten cardiac weakness associated with arteriosclerosis or myodegeneration; and four conditions of collapse, cardiac weakness in delirium tremens or pneumonia. The results in these varied cardiac troubles were not uniform; some were good, some excellent, some very transient, some were useless. The original must be consulted for the analysis of the cases.

5. **Hot Water Treatment in Dermatology.**—Rosenthal states that in very few cases of skin disease is hot water a remedy, but in many it is a very efficient adjuvant.

6. **Disturbances of Sensation and Hot Air Treatment.**—Stern warns that care must be taken in applying hot air locally to parts of the body in which sensibility is not intact, and that before the application of this remedy the physician should assure himself, at least grossly, of the integrity of the sensibility of the patient.

7. **Viscosity of the Blood and Its Diagnostic Importance.**—Bachmann alleges that the viscosity of the blood shows a typical behavior in infectious diseases. It shows an increase with a correspondingly lowered hydrogen viscosity quotient in pneumonia, on the contrary a decrease and a correspondingly high quotient in typhoid. In tuberculosis, particularly at its beginning, the viscosity shows a tendency to rise, and in miliary tuberculosis this is valuable in the distinctive diagnosis from typhoid. In chronic nephritis there is a marked reduction of the viscosity corresponding to the hydraemia of the blood. It is possible by means of the viscosity test to get points concerning disturbances of the strength of the heart.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 7, 1909.

- .. Nastin, a Reactive Fatty Body, in the Light of the Science of Immunity, By MUCH.
2. Serodiagnosis of Echinococcus Infection, By KREUTER.
3. The Senile Type of Contagious Cerebrospinal Meningitis, By REICHE.
4. Histological Studies of the Hypertrophic and Insufficient Cardiac Muscle, By LISSAUER.
5. Combined and Differential, By SEIBERT.
6. Further Clinical Experience in the Use of Scarlet Red and Its Combination in Hasten Epithelization of Granulating Surfaces, By HAYWARD.

7. Clinical Experience with Bromglidine, By ALTWATER.
8. Psychic Infection, By HERMES.
9. Combined Agglutination for Typhoid with Infection with the Bacillus Enteritidis Gaertner, By RIMPAU.
10. Extraperitoneal Cesarean Section, By KNEISE.
11. An Endemic Gonorrhoea in School Children in a Sun Bath, By BENDIG.
12. A Case of General Infection with Pyocyanine, By SUDECK.
13. The Importance of the Diastolic Murmur in the Third Left Intercoastal Space in the Diagnosis of Dilatations of the Aorta, By STEIN.
14. Some Observations with Demetrius Gasik's Method of Staining Tubercle Bacilli, By VOGT.
15. The Vibrations Electrode, By POTOTSKY.
16. Wilhelm Müller, By FÜRBRINGER.

1. **Nastin.**—Much says of nastin that it is a pure fatty body which is just as capable of producing specific products of reaction as albuminous bodies, and that these products of reaction extend their activity to several kinds of bacteria completely different in their pathogenic properties which are connected together only by the fact that this fatty body is a common constituent of their body substance.

2. **Serodiagnosis of Echinococcus Infection.**—Kreuter agrees with other writers that hydatid fluid gives complement binding to serum of a patient with echinococcus; that an alcoholic extract of the dry remains of the cyst contents gives the same reaction; that with the aqueous extract no reaction is produced, and that normal sera do not prevent the hæmolysis with the mentioned antigens.

3. **The Senile Type of Epidemic Cerebrospinal Meningitis.**—Reiche confirms with the history of two cases the view of Schlesinger that in old people this disease presents a distinct type. The principal differences marked in this type are the slow beginning of the disease with prodromal symptoms, a tendency to vomit and headache, early cloudiness of the sensorium, the increased frequency of the pulse inclined to a still greater increase and as a rule much lower temperature, than is usual in epidemic cerebrospinal meningitis. Most marked is the slight degree of stiffness in the neck, while Kernig's symptom is always present early in the course. Herpes is not present. This disease is not at all common among old people, but is preeminently one of early life.

5. **Camphor and Pneumococci.**—Seibert recommends that whenever infection with pneumococci is suspected injections of camphor should be made in order to secure the destruction of the pneumococci.

7. **Bromglidine.**—Altwater recommends bromglidine for use in neurasthenia, hysteria, and similar functional diseases of the central nervous system, as well as in mild cases of epilepsy.

13. **Diastolic Murmur in the Third Left Intercoastal Space.**—Stein says that if one finds by auscultation, together with a systolic murmur at aortic a well preserved, often sharply accentuated, second aortic sound an insufficiency of the aortic valves is excluded; and if one hears, most clearly when the patient is lying down, but usually when he is standing also, a soft diastolic murmur in the third left intercoastal space it indicates with the greatest probability a dilatation of the arch or of the descending portion of the aorta.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Meeting held in Philadelphia September 27, 28, 29, and 30, 1909.

The President, Dr. GEORGE W. WAGONER, of Johnstown, in the Chair.

The Address of the President: Doctors and the Public.—The PRESIDENT said in his address: There seems to be a lack of harmony between the public and the medical profession which has caused antagonism and open warfare upon matters of immense importance to all, and a disinclination on the part of the public to deal fairly with subjects which all true medical men consider necessary to the welfare of the public and the profession. If we can discover the reason for this antagonism, some method may be devised by which the public mind may be disabused; but, while pointing out the injustice of the public, we should not be blind to our own shortcomings. If in ordinary active practice we are more interested in watching and noting the phenomena of disease than in securing the comfort of the patient, we are missing the true object of our science and art, which is helpfulness. If we attempt to prove theories in the application of remedies while our patients linger in uncertainty and disability, then do we fail in helpfulness. If we clash over the minute and technical measures while neglecting the fundamental means of renewing life and health, we fail to be helpful. The keynote of success is helpfulness. If it is helpfulness upon scientific observation, deduction, and knowledge, it marks the highest and most desirable attainment possible to an educated physician. The sick are not cured by knowledge alone. But knowledge joined with gentleness, tact, amiability, and sincere sympathy is invincible. The true ideal for a medical man is to become a bringer of peace to those entrusted to his care, rather than to acquire a store of worldly goods by commercializing his work among his people. Three hindrances to this ideal are ignorance, superstition, and incompetence; ignorance on the part of the public of the basic motives which have caused unselfish physicians to assume their life, work of personal sacrifice and responsibility for the good of others; ignorance concerning the benefits of prevention rather than the cure of disease. Notwithstanding the claims to enlightenment, there is a taint of absurd superstition corrupting the mental processes of multitudes of people. Incompetence among medical men is an ever present danger to the public. The most important problem concerning the dignity and material welfare of the medical profession to-day is to convince men, women, and children that we strive to be helpful and to protect them from disasters following ignorance, superstition, disease, and incompetency; that we desire to advance the standard of preliminary and scientific education of all doctors so that competency may be rewarded and incompetency be rejected by the public. Let us all open our minds to truth wherever found, our hearts to its disciples under whatever name they may be known, and as the highest

object of our professional lives strive only to be bringers of peace to our fellow men.

Sanitary Science and the Social Evil.—The Rev. FLOYD W. TOMKINS, D. D.: I want to congratulate you upon making this topic your first subject of scientific deliberation. This evil is becoming so tremendous that a man must recognize that he fulfils his duty neither to God, man, nor himself unless he looks into it, studies and plans to see what can be done. I count it a privilege to say a few words, as a minister who has long been interested in this subject, to urge upon you the call to eradicate this disease in comparison with which the spread of tuberculosis is as nothing. This is not merely a general question of purity or impurity. Let me give you an illustration which is only one of a thousand which could be given and one of which I have direct knowledge. A young man whose name you would know from his parentage, if I told it to you, married, though infected with this disease. His health soon failed, tuberculosis developed, and he was about to die. On his death bed his wife said to him: "You have poisoned my body and ruined my life, and I pray God that in hell your mind may suffer just retribution." That is not an isolated case. We ministers know about cases that make our hearts ache, and yet we are absolutely helpless in the vast majority of them. What can you and I do practically about it? Can't we at first educate those with whom we come in contact? Can't we put aside that modesty which, God knows, we would like to hold to ourselves? Most of us would be glad to go back to the innocence that we had in our childhood, but God doesn't want us to when we have this to combat. Why should we not urge upon mothers that they should teach their daughters concerning this evil, teach them not only to be pure in mind and body, but warn them of this terrible evil which is spreading through the land with such fearful results? Much can be done in this and other directions if we are honest enough, fearless enough, high minded enough to recognize our responsibility in the matter.

Venereal Diseases.—Dr. LAWRENCE LITCHFIELD, of Pittsburgh: This paper is a brief study of venereal diseases undertaken because of the growing need of attention to this subject. It is probable that in this country the percentage of the population infected with venereal diseases does not vary greatly from that in Germany, where on any single day about 100,000 people are under treatment. The state or municipality has the same moral obligation and the same financial interest in the control of venereal diseases as in the control of any other controllable disease. Any attempt at police control of prostitution without the European system of registration would be futile and impracticable for our American cities. This may not be a misfortune, for it is not yet demonstrated that better results cannot be obtained by social organization against the social evil. All who have given much thought to the subject agree that the only efficient method consists in the education of the public, the establishing of free dispensaries for the treatment of venereal diseases with every possible inducement to get the infected to accept the treatment thus offered, the repeal of

bad laws, and the adoption of new ones which work only for the desired end. I urge the organization, from our present local societies, of an American association for the prevention of social diseases, with branches and dispensaries in all our cities.

Dr. ELLA N. RITTER, of Williamsport: This subject is more important than any other one to be presented at this session, and it is one of the last that we as physicians have earnestly considered. Eighty per cent. of children are born blind and a large number are still born from this disease. Education is the specific at our hand and we should make a better attempt than in the past to do something along this line.

Dr. S. NELSON WILEY, of Norristown: I have it on the authority of one of the greatest gynecologists in this city that the great mass of their abdominal work is due to gonorrhœa. Gentlemen, if we do not know that a man is not fit to marry a pure girl, it is our business to know it and to say so. I have made it a point for a number of years in the few cases I do treat to say to the patient that he must not marry until he has the very best evidence of cure. Some of them say, "I will marry when I please." "No," I say, "you will not," and I have a threat now standing over four. You know the preacher, when he goes to marry, asks if any one knows any reason why the marriage should not take place. I have a threat standing over four to-day, and I will stand up in any house or any church and say that these men are not fit to marry.

Dr. A. E. ROUSSEL, of Philadelphia: After a rather extensive observation of the methods employed abroad, more particularly in Paris, in the registration of cases of venereal diseases, I cannot but believe that those methods possess advantages over the ones in this country. I hope the time is not far distant when cases of this kind will be required by law to be reported, and I am persuaded that such requirement will aid greatly in the suppression and diminution of this terrible infection. I take it that upon the man about town, or the younger man, the possibility of having his name noted upon the books of the board of health would have a very deterrent effect.

Dr. C. L. STEVENS: Do I understand that Dr. Roussel favors police regulation of prostitution in this country?

Dr. ROUSSEL: I do.

Dr. STEVENS: Would you limit that to the female prostitute, or would you include the male prostitute?

Dr. ROUSSEL: I think the first step in this direction will be on the side of the weaker sex; ultimately I should be in favor of the registration of both sexes.

Dr. STEVENS: Have you the statistics in this country where police supervision has been attempted?

Dr. ROUSSEL: I will not say of this city, but I fail to imagine that conditions are so different that the results obtained abroad should not be obtained here.

Dr. LOWELL M. GATES, of Scranton: I imagine that if the method suggested by Dr. Roussel were carried out it would drive these people for treatment to the illegitimate practitioner, who would shield them from report. In the matter of education, I

believe we should make the symptoms and consequences of this disease so plain and bald that every woman would know the cause of her trouble in less than a month after marriage and be in position to charge her husband as the cause of the infection. For fear of causing trouble we have been too timid in advancing facts. In addition to this, we should be willing to stand up and threaten these men. Let medical ethics go to the dogs! Let us protect humanity!

Emergency Abdominal Surgery.—Dr. JOHN G. WILSON, of Montrose: A classification of emergency abdominal injuries and conditions demanding immediate operation is given and the place of operation considered. Who shall make the diagnosis, who operate, and whether the general practitioner is justified in doing major abdominal operations are questions answered by some account of the author's own experience. A report is given of fifty-three cases of appendicitis in private practice without a death.

THE PROBLEM OF THE PUBLIC SCHOOL FROM THE MEDICAL POINT OF VIEW.

The Studies and Their Effects on the Nervous System.—Dr. LAWTON M. HARTMAN, of York, stated that from a review of the subject he concluded that the subject of nervous diseases among the school children had not received sufficient attention; that there was now no definite knowledge of the part played by any particular study or group of studies or any school occupation in the development of nervous affections among school children; that there was a large and varied group of nervous manifestations occurring among school children, the development and continuation of which alterations from the normal are attributed to school work and especially to school overwork; that before the age of puberty overwork at school was not a large factor; that after the age of puberty especially among girls in schools where strong efforts to excel were expended, overwork at school, played a much more definite part; that the importance of medical inspection of schools was becoming universally recognized; that broader legislation should be urged for more accurate and more powerful medical inspection; that the introduction into the higher educational institutions of departments for the study of the child as an entity would produce results most practical, valuable, and interesting; that the earlier recognition of variations from the normal existing among school children with the institution of medical and educational treatment would accomplish much; and that the individual management of pupils nervously affected was the only rational way of providing for the proper and continued education and supervision of the health of the school youth.

School Houses and School Habits and the Development of the Body.—Dr. THOMAS GRIER SIMONTON, of Pittsburgh: Physical culture in the school should be taught so that it will become the habit of adult life. Posture, study habit, and concentration are affected by physical culture and correct breathing. The best results are to be obtained by promoting the action of the lungs and digestion, and the function of the skin. A foot tub or wash

basin with warm or cold water, soap, and a rough towel are procurable in nearly every home, and the pupils should be taught that a daily sponge bath, followed by friction of the skin with a towel is what is required of them at home, while deep breathing and physical culture are taught them at school. Warden Lewis, of the Allegheny County Jail at Pittsburgh, recently inaugurated daily open air physical exercise for his 800 prisoners. Asked what had been the result he replied, "better discipline, better digestion, more contentment, less medicine." The best results are obtained only when the physical instructors of the children are living examples of the system employed. City and country schools are contrasted in light, heating, ventilation, and sewerage. The dangers are pointed out of catchpenny stores near schools, with their cheap cakes and candy, their obscene postal cards and literature.* Typical statistics are given showing the relative ratio between cigarette users and nonusers, in standing, truancy, and juvenile court subjects.

The Knowledge of Most Value to School Children.—**THE PRESIDENT:** The common school system of education is the most important element in the nation's life, providing the only education the vast majority can hope for. Ten years is the limit of time most children have to devote to school. Advanced education and college training can be enjoyed by only a very few. In considering what knowledge is most valuable, the first and most essential is a thorough knowledge of the alphabet. There are few who leave school and enter upon the active duties of life with a working knowledge of the possibilities, the flexibility, and the limitations of the alphabet as a whole or the correct sounds of its individual elements. The next essential elementary knowledge is spelling. The next is reading—the ability to read with the spoken voice in a clear, distinct, and orderly manner so as to convey to the listener the full meaning and beauty of the printed page. Writing is the fourth essential. Arithmetic, the art of reckoning, is another of the elementary essentials of all knowledge. By its principles we reckon on the relations between all material objects, we define space and comprehend time. The development of these units, with the subsequent addition of the dependent units, history, grammar, literature, civics, and geography, gives a coherent fund of knowledge which is called elementary education. Such education the child has the right to receive from the State. If each pupil is well grounded in all these branches he has what democratic society undertakes to give him, the essential elements of all human culture, and with them the door is opened and he is at the threshold of every department of human activity.

Dr. CHARLES P. STAHR, of Lancaster: Medical men can do much toward furthering the work of medical inspection in schools, and it is to them that the children of the State must look for benefit in physical, mental, and medical ways. Personally, I believe that chorea among school children is attributable to an inherited unstable nervous temperament coupled with the desire to outrank other children, rather than to the school curriculum. Dr. Hartman's idea of a sort of clearing house for deficient children coincides with a pet theory of mine. If we had such a psychological laboratory under the

care of persons trained in child study, we could help those children who never get beyond the primary grades for five or six years.

Dr. EDWARD B. HECKEL, of Pittsburgh: As has been mentioned, the school boards are absolutely supreme. They fix the tax rate and spend the money as they please, and it is usually spent in putting up very fine buildings which are pointed to with pride as the standard of the education in that community. The public school teacher receives too little compensation. No attraction is offered to young men and young women as teachers. Much of the teaching is faulty and the child who is an adept in discerning faulty teaching loses respect for the teaching and the teacher. Especially is this true relative to the evil effects of tobacco and alcohol as taught in the public schools. It would be easy for the teacher to teach that tobacco was always a poison; that though some people stood it very well, others stood it very badly; that it sometimes produced blindness. These are facts which will bear the closest scrutiny.

Dr. WALTER S. CORNELL, of Philadelphia: The medical inspection of school children rests upon three facts. It is important to the teacher because it has a direct relation to the child's education; to the physician because the health of the child largely determines the health of the adult afterward; to the State because the efficiency of the citizens depends largely upon their health and physique. In the nervous conditions of school children I agree that the school curriculum is of minor importance compared with other factors. The example of New Jersey should be followed in having a conference between the educational authorities and the medical profession to determine a proper balance.

Dr. E. BOSWORTH MCCREADY, of Pittsburgh: That the medical inspection of schools will soon be universal is the wish of every one with the welfare of humanity at heart. There should also be provision for taking care of the child which may be backward after the physical defect has been remedied.

Dr. BATTEN: In the education of our young people we should ascertain to what they are adapted and educate them along those lines.

Dr. HAROLD B. WOOD, of Philadelphia: Inspection of boarding schools should not be overlooked, and physicians should help to patronize those schools in which health conditions are known to be good.

Dr. GUMP, of Bedford: It is impossible for children at the early age at which they are sent to school to study as they are expected without being overtaxed. If they were allowed to run until eight years of age before entering a school room, until then being taught by their parents, they would be better mentally and physically.

Dr. HEFFNER, of Pottstown: In the cities there are all sorts of attractions that affect the children more than study. There are not so many children made sick by overstudy. I am the father of six boys, but none of them ever suffered from overstudy, but I must also say that most of those boys were raised in the country.

Dr. JOHN C. DEVENNEY, of Harrisburg: The dosing of children with patent medicines, laudanum, and all sorts of anodynes has much to do with the

condition of the eyes. In a case under my observation it was thought when the children started to school there was a brain condition which prevented them from learning. Correction of the eye defects removed the difficulty.

Dr. Brooks, of Wilkes-Barre: We should instruct our House of Delegates to confer with the lawmakers upon school hygiene, letting it be known that we are desirous of having medical inspection in the cities of Pennsylvania.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Blood in Health and Disease. By R. J. M. BUCHANAN, M. D., F. R. C. P., Professor of Forensic Medicine in the University of Liverpool, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xvi-318.

Dr. Buchanan's chief contributions to hæmatology are the method of the study of the blood by the ordinary technique of histology, fixation, dehydration, embedding in paraffin, cutting, and staining; and his suggestion that the cells found in cases of acute lymphatic leucæmia are not lymphocytes, but represent an early stage in the life history of the leucocytes, a "leucoblast." By his method of studying blood by means of cut sections he has succeeded in demonstrating centrosomes in the leucocytes. The contention that the cells in lymphatic leucæmia are "leucoblasts" we are not prepared at present to defend or condemn. We do think, however, that it is unwise to introduce a new name into an already overcomplicated onomatology. We should prefer to see some of the old names dropped and certain cells that admit of it classed under one heading. For example, the "irritation forms" described by Turk are accounted by the majority of workers as large uninuclear cells. We should also like to see the term "hyaline" dropped. It is used only by English writers and is an indefensible localism.

On the whole, we find much in the book to criticize. More might be said about Sahli's hæmoglobiometer, which is finding more advocates daily on account of its accuracy. The description of the agglutination test for typhoid fever (page 56) is inadequate for the beginner or for one who has had little experience with the method. On page 59 the normal ratio of erythrocytes to leucocytes is given as 700 to 1; the majority of authors give it as 500 to 1. In describing the method of enumerating the blood platelets no mention is made of the special pipette and slide devised by Helber in 1904.

On page 80 the formula for Ehrlich's triple stain is erroneously called Ehrlich's triacid stain. On page 85 the solution for determining the presence of iodophilia is given as a method for staining erythrocytes. On page 96 the author argues that it is by extension of the nucleus of the normoblast and its subsequent development of a cytoplasm that the supply of red blood corpuscles is kept up. He believes

that the disintegration of the nucleus is incompatible with repeated blood formation. How, then, does he explain repeated spermatogenesis. The nuclei of the daughter cells in the seminiferous tubules do not remain and develop cytoplasm to form new spermatozooids. Karyolysis is perfectly compatible with continued blood formation, which is a repeated division of cells that have a common ancestor in the indifferent cells of the red marrow. These cells are differentiated, some going to form erythrocytes and others to form leucocytes. We do not remember to have heard the theory expressed before that the myeloplax, or giant cell of the marrow, is the ancestor of the red and the white corpuscles (page 146).

On page 109 the author says that megaloblasts "are said not to be a normal constituent of the marrow in the adult"; but he adds that he does not concur in this view. The work of Bunting shows conclusively that megaloblasts are present and are one of the steps in the evolution of the normal erythrocyte. On page 112 the author confirms this view from his personal observations. On page 114 he says: "All the more recent evidence points to the conclusion that they [blood platelets] do not exist in normal blood, but are artifacts produced during the process of examination." We would refer the author to the work of Pratt, which appeared in the *Boston Medical and Surgical Journal* a year or two ago, on this subject.

On page 119 and again later in the work the normal percentage of polymorphonuclear neutrophils is given as from seventy to ninety. Seventy per cent. is given as a high normal percentage for these cells by the majority of hæmatologists. Some put them as high as seventy-five per cent., but certainly a percentage higher than seventy-five is seen only in pathological blood or in blood showing leucocytosis.

We object to the perpetuation of "shotgun" prescriptions, such as that seen on page 185. On page 196 the statement is made that normoblasts are never numerous in pernicious anemia. In fact, during a blood crisis normoblasts are sometimes very numerous.

Reference is made to the work of Williams on the metabolism in cases of leucæmia after exposure to the x rays, but no reference to that of Edsall on the same subject. No reference is made to the finding of a parasite similar to the Leishman-Donovan body in the spleen in cases of infantile splenic anemia.

On page 153 yellow fever is given in the list of diseases accompanied by leucocytosis, and on page 260 the author says: "There is no leucocytosis, but rather leucopenia" in yellow fever. On page 155 Malta fever is included in the diseases which are accompanied by leucopenia; on page 260 the leucocytes in Malta fever "are said to be normal." We think the subject of Hodgkin's disease should have received more ample consideration, particularly in regard to its diagnosis from conditions resembling it. There is an interesting and apparently workable method given for the estimation of calcium salts in the blood. This appears to be a good clinical method. As to its accuracy from the chemist's viewpoint, we are unable to give an opinion.

The illustrations, particularly those in color, are

admirable. Ehrlich's name is consistently spelled throughout the book "Erlich." Although this error is corrected by an erratum slip in the beginning of the book, there are far too many other typographical errors scattered through its pages.

Diseases of the Bones and Joints. Clinical Studies. By JOEL E. GOLDTHWAIT, M. D., CHARLES F. PAINTER, M. D., and ROBERT B. OSGOOD, M. D. Illustrated. Boston: D. C. Heath & Co., 1909. Pp. xiii-685.

Although the authors disavow the intention of writing an orthopaedic surgery, the reader will find here presented the views of pathology and therapeutics which are prevalent in customary orthopaedic practice. But, aside from these matters, there is an important and impressive presentation of a number of neglected subjects which have here received very conscientious and enthusiastic study. Special attention may well be accorded in Section II to Chapters IV and VI, on Lipomata and Hysterical and Functional (*sic*) Joints. Interesting and important pages are those in which are presented the author's views of the operative technique of chronic nontuberculous diseases, the results of careful observations made during many sessions of operative work. Perusal of the page or two given to the appreciation of *brisement forcé* should not be omitted. The reader will not fail to notice the element of personal interest and human sympathy which pervades the work and which is touchingly expressed in the following words of the dedication: "To those whose patient suffering . . . has furnished the incentive for investigation this book is dedicated." Novel diagnostic helps and valuable hints are to be found in photographic views of the normal limit of motion of the principal joints. In this book are found practical wisdom for the emergencies of daily practice and opportunities for the study of difficult subjects with the help of good teachers.

Studies on Immunity. By ROBERT MUIR, M. A., M. D., Professor of Pathology, University of Glasgow. In Collaboration With CARL H. BROWNING, M. D., ALEXANDER R. FERGUSON, M. D., and WILLIAM B. M. MARTIN, M. B., Ch. B. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xi-216. (Price, \$3.)

The work of Muir and his collaborators in the field of immunity is of a very high order. It is a pleasure, therefore, to have the various papers collected and edited as they have been in the volume before us. The work is divided into three parts, of which Part I deals with The Properties of Hæmolytic Sera, Part II with The Properties of an Antiserum to a Serum: Deviation of Complement and its Relation to the Precipitin Test, while Part III discusses the Antibacterial Properties of Serum. The material presented embodies the substance of eleven papers published from Professor Muir's laboratory in the past six years. While in general the papers have been reproduced as nearly as possible in their original form, certain alterations have been made. As a result of these changes the presentation of the subject becomes more coherent, thus greatly aiding the reader. Among the interesting things contained in this volume are experiments demonstrating the direct union of complement and cell. According to Muir, the existence of a special complementophile group in the immune body is not proved, and the use of the term "amboceptor" does not appear to be justified. In the great question concerning unity or

plurality of complements, Muir inclines to the latter view though he does not accept so extreme a view as that of the Ehrlich school. Admitting, as all do, the validity of the results obtained by Bordet and Gengou, Muir points out that this does not necessarily indicate that there is but a single complement. Because various complements are taken up by powerful absorbers, it does not follow that they are all the same, and as a matter of fact weaker absorbers bring out differences.

In a subject as complex as this, it is refreshing to encounter a writer who can present the various problems in immunity so clearly. We take pleasure in commending this book to all who are interested in this important department of medicine.

Traité de l'alimentation et de la nutrition, à l'état normal et pathologique. Par le Dr. E. MAUREL, médecin principal de réserve de la Marine; professeur à la Faculté de médecine de Toulouse. Troisième volume. Ration de la grossesse, de l'allaitement et du travail. Influences qui alimentent routes les rations. Indications pratiques sur les aliments d'origine animale et végétale. Paris: O. Doin, 1909. Pp. xii-685. (Price, 14 f.)

The first volume of Dr. Maurel's textbook on alimentation and nutrition in health and disease was published in 1906, two years later followed the second volume, and now appears the third, with which the first part is concluded. Each of these volumes contains about 700 pages, and it can thus be seen that the author has treated his subject very thoroughly. The present volume treats of dietetics during pregnancy, nursing, and labor, and the influences which modify this dietary, and practical hints on animal and vegetable food.

In the first volume the author demonstrates the evolution of the organic matter, indispensable to life. He shows that this matter, in its beginning, is made up from the vegetable kingdom alone, and then, speaking of the three principles, albumin, fat, and carbohydrates, and the mineral substances which, either in combination with these principles or free, sustain life, he explains how the animal mineralizes this organic matter, the product of the vegetable kingdom. He indicates the amount of oxygen necessary to the complete mineralization of each principle. His conclusion is that during this transformation of the organic matter into the mineral state, an evolution without which the existence of animal life cannot be understood, nothing is left to chance, and every step is the logical result of an absolute rule.

In the second volume we see a middle-aged man living under normal conditions. In him the author shows us the composition of the body and the amount of each principle which is necessary to support life. He then comes to the question of sex, showing us the necessary amount of the principles to sustain life in the female sex, and then in the different ages of the human being, from infancy to old age. The third volume takes up the interesting question of birth, the amount of nutriment necessary to sustain mother and foetus, to give the mother strength to bear the child, and the proper alimentation during nursing for the mother and for the infant.

It is a very interesting book, and, speaking especially of the volume before us, the third, we find a great amount of instructions contained in tabular matter and specific dietaries. There is hardly any

food which the author does not mention, giving us the caloric value of it. The book is a complete study of the questions of alimentation and nutrition, full of instruction and stimulation for new thoughts, not only representing the usual contents of the textbooks, but aiming at a much higher standard, containing philosophical conclusions logically developed from a sound medical basis. We are very glad to have been able to follow Maurel, and hope he will find many interested readers who, with us, will admire the intuition and study and the great amount of labor of the French savant.

The Human Species. Considered from the Standpoints of Comparative Anatomy, Physiology, Pathology, and Bacteriology. By LUDWIG HOFF. Authorized English Edition. With 216 Illustrations and 7 Plates. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. xx-457.

The volume before us presents an extremely interesting account of our present knowledge concerning man's place on earth and the evidences of human life in the ages past. A great deal of controversy is still going on concerning many of the data discussed, and the author presents both sides clearly. In dismissing the generally accepted legend that man's first home was in the Mesopotamian paradise Hoff discusses the views of various authorities, beginning with Darwin, who concluded that Africa was probably man's birthplace. Others place the beginning in Australia, and still others in the great continent Europe-Asia. Evidence is presented to show that by the time the diluvial period had been reached several different races existed. Where these originated, however, is impossible to say. Concerning the subsequent fate of diluvial man in Europe, the author inclines to the view that he simply disappeared, and not that some remnant, under new influences, developed and attained to a higher state of culture. The book contains interesting chapters dealing with the psychology of man and animals, with man's arts and handicrafts, and with his social customs. The book is well written and enables even the nonscientific reader to secure an insight into a fascinating field of knowledge.

Human Physiology. An Elementary Textbook of Anatomy, Physiology, and Hygiene. By JOHN W. RITCHIE, Professor of Biology, College of William and Mary, Virginia. Illustrated by Mary H. Wellman. Yonkers-on-Hudson: World Book Co., 1909. Pp. vi-362.

To write an elementary textbook on human physiology, not for the medical student or for the profession, but for general instruction, with the view of teaching pupils of our schools to keep their bodies in health, is not an easy matter. The writer must be thoroughly acquainted with his subject and must be an independent thinker, not a partisan schoolman. It is also rather difficult for a physician to review such a book. We have done so carefully and come to the conclusion that Professor Ritchie has well succeeded. The difficult subject has been carefully handled, the text is logical, and the illustrations are well selected and executed. We cannot agree to every deduction of the author, but opinions will differ, and the author is not a "faddist." The only real criticism we can make is that the glossary and the index are not so complete as they could be. Furthermore, we cannot agree with

the author's spelling. The *Pharmacopœia of the United States* is the standard book, and its spelling of names of drugs and chemicals should have been adhered to. Our author should not have run ahead of the *Pharmacopœia*. We must have standards, otherwise we shall drift as far away as our spelling reformers have done, that is, into writing without regard to the development of our beautiful language. But this does not lessen the value of the book, which can be well recommended.

Physiothérapie, Electrothérapie. Par le docteur THOMAS NOGIER, professeur agrégé à la Faculté de médecine de Lyon. Avec 251 figures dans le texte. Paris: J. B. Baillière et fils, 1909. Pp. xvi-518. (Price, 10 f.)

The fourth volume of the first series of the Therapeutic Library treats the subject of electrotherapy. The author, assistant professor of the Medical Faculty of the University of Lyons, is well known in electrotherapeutics, and his book will receive corresponding attention. After speaking of the technique in electricity and the currents used in electrical therapeutics (Part 1), he treats, in Part 2, electrical physiology; the use of electricity as a diagnostic adjuvant in Part 3, and finally, in Part 4, electricity in its clinical aspect. This part takes up nearly half of the whole book, and we find here described the diseases of the muscles, of the nerves, of articulation, of the bones, of the circulatory, digestive, and respiratory systems, of the genitourinary apparatus, of the skin, of the eyes, of the mouth, of the nose, of the larynx, and of the ear. A good index adds to the usefulness of the book.

A Textbook of the Diseases of the Ear. For Students and Practitioners. By PROFESSOR D. ADAM POLITZER, Imperial Royal Professor of Aural Therapeutics in the University of Vienna, etc. Translated at the Personal Request of the Author, and Edited by MILTON J. BALLIN, Ph. B., M. D., Assistant Surgeon, New York Ophthalmic and Aural Institute, etc., and CLARENCE L. HELLER, M. D. Fifth Edition, Revised and Enlarged. With 337 Original Illustrations. Philadelphia and New York: Lea & Febiger, 1909. Pp. xiv-892.

The latest edition of Politzer's authoritative work contains much that is new. This is particularly noticeable in the chapters on labyrinthine function and disease, most of the data work on this subject having been based on the investigations of Barany and others at the Vienna clinic. The operations on the jugular bulb and on the semicircular canals and vestibule, and the management of intracranial complications, are described in detail, and the mastoid operation is reviewed not only from the practical, clinical, but from the historical and comparative, standpoint as well. Recent innovations, such as the blood clot method of after treatment in the healing of mastoid wounds, are discussed. The translation, while somewhat lacking in style and grace, is adequate and correct.

MEDICOLITERARY NOTES.

No further proof that Hippocrates was a great scientist is needed than his statement that he was frequently mistaken; for such was the esteem in which he was held that if he had claimed infallibility, it would have readily been accorded.

The trick played on the late Cesare Lombroso by a smart French reporter, who sent him impressions

of the hands of an obscure and honest workman with the statement that they were taken from those of a notorious criminal, and consequently elicited from the noted Italian a marvellous diagnosis of inherited criminal instincts which made all Europe laugh, did not teach the *soi-disant* criminologist much. He continued serenely to express his opinions on every subject under heaven, perfectly assured that they were of great value. Would that some living specialists of narrow outlook would keep down to their lasts. We might be spared the spectacle of misguided persons solemnly drinking spoiled milk under the impression that they are ingurgitating the *elixir vita*. This habit should become known as the latest Bulgarian atrocity. Wouldn't it be grand if the acid of sour grapes turned out to be markedly gerotrophic? (a little word of our own, meaning nourishing old age).

Dr. Henry Revell Reynolds, one of the numerous physicians who attended George III, lived well on into the nineteenth century, and even after the established popularity of our present sad colored garments, continued to present himself to the public and to his patients in a silk coat, breeches, stockings, buckled shoes, and wig, while he carried the old gold headed cane. It required a figure and an "air" to carry off all that gorgeousness. What would our patients think of a similar apparition, especially those who were beginning to see things? The clergy were too wise to lay aside their distinctive costume in any attempt to follow the fashions, while we, Alas! have lost much of our prestige in assuming the modern tweeds and vicunas. Silk would much more easily be aseptic than our rough finished goods. We are glad, however, that the wig has gone and whiskers seem to be about to follow it. A surgeon with the admired patriarchal beard of former days would have specially to detail a pair of trained nurses to keep it out of his field of operation.

What is a College for? merits the attention of every physician in the November *Scribner's*. Professor Woodrow Wilson proposes certain radical changes, realizable without difficulty in a small institution, but well nigh impossible of accomplishment, we imagine, in a huge university. "I am credibly informed," writes Professor Wilson, "no new pleasure has been invented within the memory of man." How about motoring and flying? In this number are several good love stories. Theodore Roosevelt continues to have a perfectly corking time on African Game Trails; many of Kermitt's pictures have a disillusioning resemblance to the Flatbush and New Jersey backgrounds used by New York moving picture manufacturers.

Rudyard Kipling in *The Wrong Thing* has a fine story of the stingy Henry VII of England in the November *Delineator*. There is naught of medical interest in the story unless the psychological peculiarities of the king may be so regarded. The tale will please the chirurgiens, belike, the use of tools in the mechanical arts being seemly considered. Amazement and distress will be the portion of those who think we have nothing to learn from any nation on any subject, when they read *If the Japanese Should Rear Your Children*, by Adachi Kinnosuke.

The Alleged Decline in Church Attendance is a "symposium" by clergymen; "alleged" is good. Why are no babies offered for adoption this month?

The doctrine of signatures is well nigh forgotten, although we have known an eminent oculist to add *Euphrasia* or Eyebright to a collyrium with a sort of vague hope; he found it quite inert. Liverwort, although now so little known as to be unnamed in most dictionaries, is still a prized ingredient of certain patent remedies for "liver complaint." Those who are interested in the quaint belief will find it discussed in the *Pharmacologia* of Dr. J. A. Paris. The lungs of a fox, owing to the long wind of that animal, were a specific for asthma; the yellow turmeric cured jaundice; the seeds of gromwell, being hard and polished, were of value in stone and gravel; the roots of white saxifrage were good for the same reason; eyebright has a black spot on the corolla not unlike the pupil of the eye; the handsome bloodstone, with its ruddy spots on green, is still used in rural England and Scotland in nose-bleed; nettle tea is not unknown as a specific for urticaria. A belief in Providence included the fancy that every plant intended for medicinal use bore some external and well marked characteristic indicating for what disease it was a remedy.

Rollin, in his *Histoire ancienne*, gives a short sketch of the history of medicine in which he mixes naively mythology and truth. He tells how Achilles judged it necessary for a general to have a knowledge of surgery, and consequently took a course of lessons from Chiron, the centaur. Subsequently he taught his friend Patroclus. Rollin goes on to say that early medicine confined itself to the innocent and salutary plants in obtaining remedies, oblivious, as many an amiable thinker has been since, that opium, strychnine, henbane, hemlock, and other deadly poisons come from the vegetable kingdom.

Massage seems to have developed as a therapeutic agent from the practice of flagellation. Galen mentions whipping as a method of fattening horses. According to Suetonius, Musa, physician to Augustus, ordered the emperor to be regularly fustigated both to fatten him and to cure his sciatica. *Urticatio*, or whipping with nettles, used to be a popular counterirritant. Xenophon ordered his soldiers to thaw one another out, in the cold weather, by flagellation; we can imagine that this would begin by causing warmth under the collar had the Greek shirt been provided with that ornament. The development of massage, however, as we know it was very early; Hippocrates writes of several kinds. Julius Cæsar used to have his muscles pinched regularly. Long before him Homer makes Ulysses speak of having himself rubbed down with oil, after his bath and before joining the ladies. Mention of the practice is made even in Sanscrit and early Chinese books.

Before using empiricism in a derogatory sense one should pause to think that the word implies only that experience is relied upon to justify the use of a remedy in certain conditions. Francis Bacon had a rare fight on his hands when he revived in the middle ages the processes of inductive reasoning. We owe our knowledge of quinine and mercury and of many other invaluable drugs solely to empiricism.

We might not now be using silver were it not for its value in the eyes of astrologers. Only silver bullets could slay a witch. Mercury was a perpetual source of wonderment to the alchemists; the quick or living silver had undoubted magical qualities, and our use of it is a heritage from superstitious predecessors. No one can doubt that much of the prestige of quinine on its first introduction to civilization was due to the fact that it was brought from the wilds by holy missionaries; we used it with grateful empiricism until the discovery of *Plasmodium malariae*. We are confident that the future will afford scientific justification for the use of other medications, now used empirically by observant practitioners, however scoffed at by noted nihilists.

Quackery followed hard upon the heels of medicine. Pliny speaks of the influential quacks of his day as having the power of life and death by virtue of their fluent multiloquence; so much so that every patient awaited anxiously a comforting prognosis. (I, 29, c. 1. *Palem est*, etc.)

Herophilus, who flourished about 300 B. C., was undoubtedly the father of anatomy and the autopsy. Physicians may faintly recall his *torcular*. He had sufficient influence with the authorities to secure the bodies of all executed criminals for dissection and so was the inventor of pathological anatomy. Cicero, Plutarch, and Pliny speak of him with great admiration, and it was reserved for the amiable ecclesiastic, Tertullian, to accuse him of hating men. To the early Christians dissecting the temple of divinity was quite as sinful as vivisectioning it, and of the latter was Herophilus also guilty according to them. Tertullian says quaintly, "he was a physician or butcher" (our Italics). On the other hand Fallopius calls Herophilus the evangelist of anatomists. Although confounding tendons and nerves, he knew the function of the latter and of their connection with the brain; he operated correctly for cataract and described the eye accurately; and his description of the small intestine was exact. For centuries his learning lay buried, considered as unimportant by people who momentarily expected the end of the world.

Miscellany.

A Correction.—We regret that a very misleading error appeared in Dr. Herman B. Sheffield's article on A Simplified Method of Home Modification of Cows' Milk for Infant Feeding, in our issue of October 23rd, on page 806. We print herewith the corrected feeding scheme.

FEEDING SCHEME.
(For 24 hours.)
Ingredients for total number of feedings (in ounces)

Age of infant in months	Formula	Feeding intervals in hours	Number of feedings	Size of feeding in ounces	Milk	Whole ²	Lime water in ounces	Diluent	Cereal	Milk sugar in teaspoon	Approximate percentage composition	Proteins	Sugar	Fat
1/2	1-5	2 1/2	8	2 1/2	4	..	1 1/2	13	..	4 1/2	0.50	6	1.0	..
1	1-4	2 1/2	8	2 1/2	4	..	1 1/2	15 1/2	..	5 1/2	0.60	6	1.20	..
2	1-3	3	7	3 1/2	6 1/2	..	3/4	13 1/2	4	6	0.75	6	1.50	..
4	1-2	3	7	4 1/2	10 1/2	..	1 1/2	9 1/2	10	7	1.00	6	2.00	..
6	1-2	3	6	6	16 1/2	..	2 1/2	..	18 1/2	7	1.50	6	2.00	..
8	2-1	3 1/2	6	7	21	..	3 1/2	..	10 1/2	4 1/2	2.00	6	2.33	..
10	3-1	4	6	7 1/2	28	..	4 1/2	..	7	3 1/2	2.25	6	3.00	..
12	4-1	4	5	8 1/2	34	..	4 1/2	..	4 1/2	3	2.40	6	3.20	..
14	5-1	4	5	9	37 1/2	..	4 1/2	..	3	3 1/2	2.50	6	4.00	..

¹The upper eighteen ounces of a quart bottle = 6 per cent. fat, 5 per cent. sugar, 3 per cent. proteins.

²4 per cent. fat, 5 per cent. sugar, 3 per cent. proteins.

NEW PUBLICATIONS.

Sahli, H.—Lehrbuch der klinischen Untersuchungs-Methoden für Studierende und praktische Aerzte. Fünfte, umgearbeitete und ergänzte Auflage. Zweite Hälfte. Mit 7 lithographischen Tafeln. Wien: Franz Deuticke, 1909. Pp. 457-1390.

Lechner, Karl.—Die klinischen Formen der Schlaflosigkeit. Wien: Franz Deuticke, 1909. Pp. 118.

Von Düring, E.—Krankheit und Krankheitsursache. Leipzig: F. C. W. Vogel, 1909. Pp. 49.

Mergam, C.—Was jeder von der Wasserbehandlung wissen sollte. Stuttgart: Ferdinand Enke, 1909. Pp. 71.

Birkhäuser, Rudolf.—Ueber die Schädigungen des menschlichen Sehorgans durch stumpfe Traumen des Schädels wie des Augapfels. Basel: Emil Birkhäuser, 1909. Pp. 126.

Thiem, C.—Handbuch der Unfallerkkrankungen einschliesslich der Invalidenbegutachtung. Zweite, gänzlich umgearbeitete Auflage. Zwei Bände. I. Band. Mit 89 in den Text gedruckten Abbildungen. Stuttgart: Ferdinand Enke, 1909. Pp. 708.

Hocheegg, J.—Lehrbuch der speziellen Chirurgie für Studierende und Aerzte. Zweiter Band. II. Teil (Schluss). Chirurgie der Extremitäten. Mit 268 Abbildungen in 14 Tafeln. Berlin und Wien: Urban Schwarzenberg, 1909. Pp. 531.

Urslein, M.—Die Dementia praecox und ihre Stellung zum manisch-depressiven Irresein. Eine klinische Studie. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. 372.

Moraller, Franz, und Hoehl, Edwin.—Atlas der normalen Histologie der weiblichen Geschlechtsorgane, unter Mitwirkung von Prof. Dr. R. Meyer. I. Abteilung. Mit 56 Abbildungen auf 26 Tafeln. Leipzig: Johann Ambrosius Barth, 1909. Pp. 25.

Maeder, Alphonse.—Sexualität und Epilepsie. I. Die Sexualität der Epileptiker. Sonderabdruck aus dem Jahrbuch für psychoanalytische und psychopathologische Forschungen. I. Band. Wien: Franz Deuticke, 1909. Pp. 36.

Schwalbe, Ernst.—Die Morphologie der Missbildungen des Menschen und der Tiere. Ein Hand- und Lehrbuch für Morphologen, Physiologen, praktische Aerzte und Studierende. Unter Mitwirkung zahlreicher Fachgenossen. III. Teil. Die Einzelmissbildungen. I. Lieferung enthaltend I. Abteilung: Missbildungen der äusseren Form. II. Abteilung: Missbildungen der einzelnen Organe und Organsysteme. Jena: Gustav Fischer, 1909. Pp. 178.

Greeff, R., et al.—Beiträge zur Trachomforschung. Aus der Akten des königlichen preussischen Kultusministeriums. Mit 3 lithographischen Tafeln. (Abdruck aus dem Klinischen Jahrbuch Band XXI. Jena: Gustav Fischer, 1909. (Price, 5.40 M.)

Doflein, Franz.—Lehrbuch der Protozoenkunde. Zweite Auflage der Protozoen als Parasiten und Krankheitsreger. Mit 825 Abbildungen im Text. Jena: Gustav Fischer, 1909.

Albers.—Elektrizität und Licht in der Medizin. Acht Vorträge. Herausgegeben vom Zentralkomitee für das ärztliche Fortbildungswesen in Preussen, in dessen Auftrage redigiert von Prof. Dr. R. Kuttner. Mit 38 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 5 M.)

Kuttner, R.—Entwicklung und Fortschritte der Chirurgie. Vortragszyklus, veranstaltet zur Erinnerung an Ernst Von Bergmann. Mit 43 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 7 M.)

Von Bardeleben, Karl.—Handbuch der Anatomie des Menschen in acht Bänden. In Verbindung mit Dr. P. Bartels in Berlin, weiland Prof. Dr. A. von Brunn in Rostock u. s. w. Dritter Band. Vierte Abteilung. Gefäßsystem. Privatdozent Dr. Paul Bartels in Berlin, Das Lymphgefäßsystem. Mit 76 zum Teil farbigen Abbildungen im Texte. Des ganzen Werkes Lieferung 17. Jena: Gustav Fischer, 1909.

Penzoldt, F., und Stintzing, R.—Handbuch der gesamten Therapie in sieben Bänden. Bearbeitet von Prof. Dr. O. von Anenger, München; Prof. Dr. Babes, Bukarest u. s. w. Vierte Auflage des Handbuchs der Therapie innerer Krankheiten. Zweiter Band. Jena: Gustav Fischer, 1909.

Hertwig, Oskar.—Allgemeine Biologie. Dritte Auflage des Lehrbuchs Die Zelle und die Gewebe. Mit etwa 400 Abbildungen im Text. Jena: Gustav Fischer, 1909.

Kocher, Theodor, und Tavel, E.—Vorlesungen über chirurgische Infektionskrankheiten. Erster Teil: Die Streptomykosen. Mit 80 Textabbildungen. Jena: Gustav Fischer, 1909. (Price, 6 M.)

Laurent, E.—Das Virulenzproblem der pathogenen Bakterien. Jena: Gustav Fischer, 1909. (Price, 8 M.)

Lenzmann, Richard.—Die Pathologie und Therapie der plötzlich das Leben gefährdenden Krankheitszustände. Zweite umgearbeitete Auflage. Jena: Gustav Fischer, 1909. (Price, 9 M.)

Pappenheim, Arthur.—Atlas der menschlichen Blutzellen. Zweite Lieferung. 13 Tafeln. Jena: Gustav Fischer, 1909. (Price, 25 M.)

Ott, Isaac.—The Parathyroid Glandules from a Physiological and Anatomical Standpoint. Published by the Author, 1909.

Schultz, W. H.—Quantitative Pharmacological Studies: Adrenalin and Adrenalinlike Bodies. Hygienic Laboratory Bulletin No. 55. Washington: Government Printing Office, 1909. Pp. 77.

Thirty-second Annual Report of the Board of Health of the State of New Jersey, 1908, and Report of the Bureau of Vital Statistics. Pp. vi-650.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending October 23, 1909.

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
District of Columbia—Washington.	Oct. 2-9.	3	
Alabama—Fort Wayne.	Sept. 18-Oct. 2.	15	
New York—Buffalo.	Oct. 2-9.	1	
North Carolina—Charlotte.	Oct. 1-8.	3	
Ohio—Cincinnati.	Oct. 2-9.	2	
Ohio—Dayton.	Oct. 2-9.	2	
Alabama—General.	Aug. 1-31.	18	
Wisconsin—La Crosse.	Oct. 2-9.	1	
<i>Smallpox—Foreign.</i>			
Canada—Hamilton.	Sept. 1-30.	2	
Albany—Albany.	Sept. 19-26.	2	
India—Calcutta.	Sept. 1-30.	2	
India—Madras.	Sept. 4-10.	1	2
India—Rangoon.	Aug. 28-Sept. 4.	1	
Italy—Genoa.	Sept. 1-30.	7	
Italy—Naples.	Sept. 1-30.	17	4
Java—Batavia.	Aug. 21-28.	4	1
Italy—Rome.	Sept. 4-11.	2	
Italy—Vercelli.	Sept. 26-Oct. 3.	1	
Portugal—Lisbon.	Sept. 11-23.	13	2
Russia—Moscow.	Sept. 11-23.	7	1
Russia—Odessa.	Sept. 18-25.	2	1
Russia—Riga.	Sept. 18-25.	2	
Russia—Warsaw.	Sept. 18-25.	2	
Spain—Valencia.	Sept. 18-25.	1	2
Spain—Vigo.	Sept. 18-25.	1	
Turkey—Smyrna.	Aug. 5-Sept. 17.	79	
<i>Yellow Fever—Foreign.</i>			
Paraguay—Pará.	Sept. 11-23.	4	2
Paraguay—Guayaquil.	Sept. 11-18.	3	3
<i>Cholera—Insular.</i>			
Philippine Islands—Manila.	Aug. 28-Sept. 4.	3	6
Philippine Islands—Provinces.	Aug. 28-Sept. 4.	20	114

Places.	Date.	Cases.	Deaths.
<i>Cholera—Foreign.</i>			
China—Hankow.	Aug. 21-28.	1	
India—Bombay.	Sept. 7-14.	22	
India—Calcutta.	Aug. 21-Sept. 4.	10	
India—Rangoon.	Aug. 28-Sept. 4.	3	
Japan—Kobe.	Sept. 9.	3	1
Korea—Seoul.	Sept. 23.	Present	
Netherlands—Hansweert.	Sept. 27-29.	2	
Netherlands—Lobik.	Sept. 27-29.	1	
Russia—General.	Sept. 18-Oct. 1.	1,365	587
Russia—St. Petersburg.	Sept. 18-Oct. 1.	510	201
<i>Plague—Insular.</i>			
Hawaii—Hilo.	Sept. 19.	1	
<i>Plague—Foreign.</i>			
Chile—Iquique.	Sept. 8.	2	
Ecuador—Guayaquil.	Sept. 11-18.	11	
India—General.	Aug. 21-28.	2,297	1,811
India—Bombay.	Aug. 28-Sept. 4.	2,537	1,852
India—Calcutta.	Sept. 7-14.	9	
India—Rangoon.	Aug. 21-28.	16	
India—Rangoon.	Aug. 28-Sept. 4.	7	
Indo-China—Saigon.	Aug. 21-Sept. 4.	15	14
Japan—Kobe.	Sept. 4-11.	16	12
Peru—General.	Aug. 20-27.	16	12

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 20, 1909:

ASHFORD, F. A., Passed Assistant Surgeon. Bureau order of October 12, 1909 suspended.

BARNES, W., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 1, 1909.

BEAN, L. C., Acting Assistant Surgeon. Granted five days' leave of absence from October 23, 1909.

CURLEY, C. P., Acting Assistant Surgeon. Leave granted for twenty-one days from September 25, 1909, amended to read sixteen days from September 21, 1909.

DELGADE, J. M., Acting Assistant Surgeon. Granted twenty-two days' leave of absence from November 5, 1909.

ELDRIDGE, M. B., Pharmacist. Leave granted for twenty-four days from September 28, 1909, amended to read 11 days from September 28, 1909.

FISHER, C. E., Acting Assistant Surgeon. Granted sixteen days' leave of absence from October 15, 1909.

FROST, W. H., Passed Assistant Surgeon. Granted nine days' leave of absence from October 23, 1909.

GUSTETTER, A. L., Acting Assistant Surgeon. Leave granted for five days from October 13, 1909, amended to read five days from October 16, 1909.

KERR, J. W., Assistant Surgeon General. Detailed to represent the Service in a National Conference on Pellagra, to be held in Columbia, S. C., November 3 to 4, 1909.

KIMMET, W. A., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 15, 1909.

KOLB, L., Assistant Surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to the Reedy Island Quarantine Station and report to the medical officer in command for duty and assignment to quarters.

LAVINIER, C. H., Passed Assistant Surgeon. Detailed to represent the Service in a National Conference on Pellagra, to be held in Columbia, S. C., November 3 to 4, 1909.

OXUP, B., Acting Assistant Surgeon. Granted four days' extension of annual leave from October 5, 1909, on account of sickness.

OXUP, B., Acting Assistant Surgeon. Granted twenty-three days' leave of absence from October 21, 1909.

ROBERTS, NORMAN, Passed Assistant Surgeon. Granted two days' leave of absence from October 13, 1909, under paragraph 101, Service Regulations.

ROBERTSON, H. McG., Passed Assistant Surgeon. Leave granted for two months from October 1, 1909, amended to read two months from October 4, 1909.

SLOUGH, CHARLES, Pharmacist. Leave granted for twenty-three days from September 18, 1909, amended to read twenty-one days from September 18, 1909.

SWEET, E. A., Passed Assistant Surgeon. Bureau order of October 12, 1909, suspended; directed to accompany a deported alien leper sailing from New York, October 20, 1909.

WISE, A. H., Acting Assistant Surgeon. Granted fifteen days' leave of absence from October 16, 1909.

WOLLENBERG, R. A. C., Assistant Surgeon. Leave granted for two months from September 10, 1909, amended to read two months from October 6, 1909.

WOODWARD, R. M., Surgeon. Granted fourteen days' leave of absence from October 16, 1909, on account of sickness.

Appointment.

Dr. Clifton R. Wallace appointed an acting assistant surgeon, for duty at Norfolk, Va.

Resignation.

Acting Assistant Surgeon A. H. Wise resigned, to take effect October 31, 1909.

Board Convened.

Board of medical officers convened to meet at Seattle, Wash., October 16, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon M. W. Glover, chairman; Assistant Surgeon C. W. Chapin; Acting Assistant Surgeon F. R. Underwood, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 23, 1909:

ADAMS, P. A., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Schofield Barracks, H. T., for duty.

BAILEY, EDWARD, First Lieutenant, Medical Reserve Corps. Order for Philippine Service revoked.

BLANCHARD, R. M., Captain, Medical Corps. Granted sick leave of absence for one month.

COLE, BLASE, First Lieutenant, Medical Reserve Corps. Ordered to active duty; will proceed to Fort Crook, Nebr., for duty.

DAVIDSON, W. F., Captain, Medical Corps. Granted leave of absence for one month.

DRAKE, P. C., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.

FLYNN, T. J., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Ethan Allen, Vt., for duty.

FREELAND, H. L., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Leavenworth, Kansas; will proceed to San Francisco, Cal., to sail December 6th for Philippine Service.

FULLER, L. A., Major, Medical Corps. Granted leave of absence for fourteen days.

HEYSINGER, J. D., Captain, Medical Corps. Granted leave of absence for one month.

PARSON, J. A., First Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his services being no longer required.

PINQUARD, JOSEPH, First Lieutenant, Medical Reserve Corps. Granted sick leave of absence for four months.

RAYMOND, T. U., Major, Medical Corps. Granted leave of absence for one month, fifteen days.

THORNBURGH, R. M., Captain, Medical Corps. Relieved from duty at the Pacific Branch, U. S. Military Prison, Alcatraz Island, Calif., and ordered to the Army General Hospital, San Francisco, Cal., for duty.

WILSON, J. S., Major, Medical Corps. Ordered to Alcatraz Island, Cal., for duty at the Pacific Branch, U. S. Military Prison.

WINTER, F. A., Major, Medical Corps. Relieved from duty at Fort Myer, Va., and ordered to duty in the office of the Surgeon General.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 23, 1909:

BOWEN, E. S., Jr., Surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to command the Naval Hospital, Yokohama, Japan.

CAMERER, C. B., Acting Assistant Surgeon, appointed an acting assistant surgeon, ordered to instruction at the Naval Medical School, Washington, D. C.

FOSTER, T. G., Assistant Surgeon. Detached from duty at the Naval Prison Navy Yard, Portsmouth, N. H., ordered leave until November 15th, upon completion thereof ordered to Washington, D. C., for examination and then to await orders.

HATHAWAY, G. S., Passed Assistant Surgeon. Detached from the *Cheyenne* and ordered to duty in connection with the fitting out of the *New Orleans* and to duty on board that vessel when commissioned.

HIREBETT, C. T., Medical Inspector. Detached from command of the Naval Hospital, Las Animas, Colo., and ordered home to await orders.

LEACH, P., Medical Inspector. Detached from command of the Naval Hospital, Newport, R. I., granted leave for one month, and upon expiration thereof ordered to command the Naval Hospital, Las Animas, Colo.

MCCORMICK, A. M. D., Surgeon. Ordered to duty at the works of the General Electric Company, Schenectady, N. Y.

FRYOR, J. C., Surgeon. Detached from command of the Naval Hospital, Yokohama, Japan, and ordered home in the United States, via Europe, with permission to delay three months *en route*.

SHIPPEN, L. P., Assistant Surgeon. Upon reporting at the Navy Department ordered to the Navy Yard, Portsmouth, N. H., for duty at the Naval Prison.

Births, Marriages, and Deaths.

Married.

COOK—FORD.—In Vicksburg, Mississippi, on Friday, October 15th, Dr. B. J. Cook and Miss Mattie G. Ford.

HARRIS—LARKIN.—In Chicago, on Wednesday, October 20th, Dr. Ray R. Harris, of Dubuque, Iowa, and Miss Ethel Alice Larkin.

LEMOINE—ZIMMER.—In Clayton, Missouri, on Wednesday, October 13th, Dr. Leo Lemoine, of St. Louis, and Miss Kate Zimmer.

PERKINS—ADDIS.—In Philadelphia, on Tuesday, October 19th, Dr. Francis M. Perkins and Mrs. Sarah Theresa Addis.

SULLIVAN—BACON.—In Pittsfield, Massachusetts, on Monday, October 18th, Dr. Timothy D. Sullivan, of New York, and Miss Lucy M. Bacon.

Died.

APPEL.—In Brooklyn, on Saturday, October 16th, Dr. Solomon Appel, aged sixty-five years.

BODMAN.—In Toledo, Ohio, on Monday, October 18th, Dr. L. H. Bodman, aged sixty-nine years.

BOURSCHEIDT.—In Peoria, Illinois, on Tuesday, October 19th, Dr. Frank Carl Bourscheidt, aged fifty-eight years.

COLLINS.—In Birmingham, Alabama, on Saturday, October 16th, Dr. M. H. Collins, aged fifty-two years.

COLVIN.—In Phenix, Rhode Island, on Saturday, October 16th, Dr. Aram Washington Colvin, aged seventy-eight years.

DODD.—In Jersey City, New Jersey, on Wednesday, October 20th, Dr. William Joseph Dodd, aged eighty years.

GROVE.—In San Diego, California, on Wednesday, October 20th, Dr. Edward Grove, aged sixty years.

MCCONNELL.—In Washington, D. C., on Monday, October 18th, Dr. Irwin H. McConnell, aged twenty-seven years.

MCFADDEN.—In Peoria, Illinois, on Saturday, October 16th, Dr. Lewis A. McFadden, aged sixty-one years.

MCCNETT.—In Bath, New York, on Friday, October 15th, Dr. George C. McNett, aged fifty-two years.

SCOTT.—In Cambridge, Ohio, on Tuesday, September 14th, Dr. Winfield Scott, aged sixty years.

SIDBALL.—In Oberlin, Ohio, on Tuesday, October 12th, Dr. James F. Sidball, aged seventy-seven years.

SNIVELY.—In Shady Grove, Maryland, on Thursday, October 14th, Dr. Joseph L. Snively, aged fifty-eight years.

SNOD.—In Searsville, Ohio, on Wednesday, October 13th, Dr. George T. Snod, aged fifty years.

STACK.—In Washington, D. C., on Sunday, October 17th, Dr. Maurice J. Stack, aged fifty-five years.

THOMPSON.—In Kansas City, Kansas, on Monday, October 11th, Dr. J. M. Thompson, aged sixty-six years.

WESTROOK.—In Burrillville, Rhode Island, on Friday, October 15th, Dr. Henrietta Paine Westrook, aged seventy-four years.

WHITE.—In Jackson, Michigan, on Monday, October 18th, Dr. George J. White, aged fifty-three years.

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Original Communications.

ATTIC SUPPURATIONS.

By MILTON J. BALLIN, M. D.,
New York.

The favorable results which the writer has obtained during the past few years in the treatment of chronic middle ear suppurations, by intratympanic operative procedures, have convinced him that these measures deserve more attention than has hitherto been given them.

The cases in which the best results have been obtained, have been those in which the pathological condition was confined to the upper tympanic space or, in other words, the so called attic, and in which the process has not been associated with too extensive changes in the osseous walls.

During the last few years the writer has had occasion to see a large number of patients in whom the suppuration frequently extended over a long period of time, and in whom all local medical treatment proved of no avail. A closer examination of these cases made it evident that the reason for this chronicity could be attributed to a diseased condition of the external attic.

The anatomical construction of this region, which acts as the receptacle for the head of the hammer and body of the incus, and which contains a number of ligamentous bands and folds of mucous membrane, forms an accessory cavity of the middle ear which is conducive to the retention of septic material. The fact that it is located high up beyond the field of vision leaves us more or less in ignorance as to the extent of the pathological changes which have taken place there, and renders the application of medicinal agents all the more difficult.

The numerous anatomical and pathological investigations which have been undertaken during the past years have shown that in many cases the contents of the attic have undergone changes which are beyond repair, so that a cure can no longer be obtained by the use of drugs. A favorable result can, therefore, be hoped for only by a timely and thorough intratympanic procedure.

The suppurations of the attic to which the writer has directed attention are, in a great majority of cases, the causal factor in keeping up the purulent discharge from the ear. It appears that fully fifty per cent. of the cases of suppurative otitis media of long standing owe their chronicity to a diseased condition of the upper tympanic space. It

has been his experience that when the contents of this region were removed and the cavity thoroughly curetted, whereby a free drainage was established from above, the discharge often ceased and a cure was brought about.

It, therefore, becomes evident that suppurations confined to the attic are of great importance in sustaining the chronicity of the aural discharge, and that by directing our attention to eradicating the pathological conditions there, we are often able to bring about a cure of the middle ear affection.

Attic suppurations may be divided into two main classes:

1. Those arising conjointly with a general acute middle ear infection or developing during its course, that is as a part of a diffuse tympanic disease or remaining as the residuum of such an infection.

2. Those developing as an independent, localized, circumscribed affection, which is usually associated with a perforation of Shrapnell's membrane.

Of all suppurations of the middle ear, the writer has found none as obstinate and unyielding to the ordinary methods of treatment as those confined to the upper tympanic space. Impressed by this fact he has become convinced that a cessation of the suppurative discharge could not be obtained by the mere use of installations of aqueous solutions or by the insufflation of various powders, but that a cure could be hoped for in about fifty per cent. of the cases by more radical intratympanic operative measures.

The acute suppurations of the attic which are part of a general acute middle ear infection usually present no difficulty as regards treatment as they, as a rule, subside under the ordinary methods applied to the middle ear condition. The infective material which finds its way into the attic generally flows off through the perforation in the drum, and as the inflammatory condition in the lower portion of the tympanum gradually subsides, the inflammation in the attic does likewise.

If, however, the acute condition does not subside, it finally passes over into the chronic state. The mucous membrane folds and ligamentous bands located in the attic become swollen, turgescient, and hypertrophied, and the pus which has found its way there, becomes more or less retained in the small pouches and pockets and has no longer a free and uninterrupted outlet. The two ossicles, which form the so called malleoincudal body, likewise act as an impediment, so that there is finally a condition of pus retention, whereby a portion of the purulent secretion is constantly retained, while a portion

finds its way into the tympanic cavity. This retention finally brings about, by its irritation, more or less deep seated changes. The lining mucous membrane becomes hypertrophied which finally leads to the formation of polypi, varying from the size of a pea to that of a hemp seed, and the ossicles which are covered with a fine layer of mucous membrane are eventually imbedded in granulations so that they no longer perform their functions properly. In addition to these changes the destructive process may continue, so that the walls of the attic become denuded and necrosed, and the head of the hammer and body of the incus also becomes more or less destroyed. This destructive process may, however, continue so that it often extends to the walls of the external meatus and backward into the antrum and mastoid cells, and bands of connective tissue are formed which frequently bind the ossicles with one another, or with the surrounding walls. As the suppuration continues, the secretion which is being kept up by the pathological conditions above, finds its way constantly into the tympanic cavity and there also produces the changes which are so characteristic of a chronic otitis media. The perforation in the drum is kept patent, varying from a small orifice to complete destruction, and the lining mucous membrane of the tympanum becomes thickened and swollen and covered with more or less purulent secretion; the remnant of the drum is red and thick and presents a soft, boggy feeling when touched with the probe. If the perforation is extensive the polypi which are present can often be traced by small pedicles into the attic, and frequently force their way into the external meatus. It has frequently happened that the writer has found a large polypus in the meatus, having its origin in the upper tympanic space. When this was removed, the remainder of the tympanic cavity presented a normal appearance. Such cases are rather common and show that the attic is, in many instances, the only portion of the middle ear which is the seat of the disease.

These are the very cases of so called chronic middle ear suppuration in which the purulent discharge is sustained by a diseased condition of the attic and in which a thorough exenteration of the part often brings about a cessation of the aural affection.

The hearing in the acute affections of the attic is, as a rule, only slightly impaired, as the congestion and swelling of the surrounding parts do not materially affect the sound conducting apparatus, and the propagation of sound continues uninterruptedly. In the chronic forms, however, in which the ossicles have become imbedded in granulations, and their ligaments have become loose and succulent, or bands of connective tissue have formed between their joints, so that they have been more or less firmly united with each other or with the surrounding walls, their functionating power has been impaired, they no longer act as a conveyor of the waves of sound, but rather create an impediment to the outflow of the pus, and act as a foreign body. The hearing in such cases is, therefore, greatly reduced, so that one finds, as a rule, in the chronic attic suppurations deafness of more or less marked degree.

The localized suppurations of the attic, that is

those forms arising in this portion of the tympanic cavity and remaining localized as such may be considered a rather rare occurrence. They owe their development to bacterial invasion, which usually takes place from below, in that the microorganisms find their way into the middle ear through the Eustachian tube. Some authorities, however, claim that infection may take place from without, that is by way of the external meatus. In very rare instances the bacteria, which enter the external auditory canal, while bathing, etc., find their way into Prussak's space through an inconstant Rivinian foramen, or a primary inflammation of the superior wall of the external meatus, may extend to the *margo tympanicus* and from here into the attic. The rarity of this mode of invasion leads one to believe that almost all suppurations of the attic take their origin from the middle ear, in spite of the fact that the tympanic cavity is occasionally free from disease.

That suppurations are localized to this portion of the middle ear is a well established fact, which has been verified by the publications of many authors. Among these we find mentioned Politzer, Blake, Orne Green, Mörpurg, Burnett, and others, all of whom reported cases of this nature and called attention to the fact that suppurations limited to the upper tympanic space were usually associated with perforation of Shrapnell's membrane.

Politzer (1), in the second edition of his textbook, calls attention to acute circumscribed inflammations of the attic, which develop with moderate pain, slight subjective noises, with a feeling of fullness and pressure in the ear, and with a slight decrease in the hearing function. These cases, when examined, frequently present a fullness and redness of the *pars flaccida* which subside in a few days. In other cases the upper portion of the drum shows a marked bulging, which in a few days ruptures and discharges a serous or mucopurulent secretion; such cases often run their course with rather marked reaction, but generally subside within a short time under proper local treatment.

In cases in which the discharge does not cease, the anatomical structure of the attic favors the prolongation of the process so that quite a number of these cases pass over into the chronic form, which finally leads to the formation of polypi and cholesteatoma, and to caries of the ossicles and surrounding osseous walls.

The aural surgeon, as a rule, does not meet with these attic suppurations during the acute stage, but generally sees them only when they have passed over into the subacute or chronic state. They are detected at the otoscopic examination, at which one finds a varied picture of the *membrana tympani*. The lower portion of the drum may present an almost normal appearance, or somewhat reddened and thickened, while the *pars flaccida* shows a larger or smaller perforation and necrotic changes in the surrounding bony areas. Sometimes a slight purulent secretion is seen to exude from the attic, while at other times, the secretion is dry and inspissated so that a small crust covers the defect in the membrane. After the removal of this crust with a probe the true condition is revealed and one sometimes finds the attic filled with granulations, and cholesteatomatous masses. When the defect is large, we

may see the necrotic head of the hammer and body of the incus, and the walls covered with granulations or denuded in parts. If the case is of long standing the destructive process may have extended backward so that the antrum and mastoid cells are also involved. In other cases the formation of polypi is very extensive so that they protrude through the perforation into the external meatus and hang down in front of the drum for which they may at times be mistaken. The formation of cholesteatoma in the attic is of common occurrence and is invariably brought about by the inward growth of the epidermis of the external meatus. The accumulation of such masses is most troublesome to overcome and is frequently the cause of extensive changes in the temporal bone, and walls of the external meatus.

In cases in which the discharge is not profuse, it may cease from time to time, and the patients present themselves only when there is a disagreeable odor from the ear owing to the stagnation of the secretion, headaches, or slight pains in the ear. Examination often shows the presence of a rather normal pars flaccida, but the history of an aural discharge from time to time allows us to infer a diseased condition of the attic. In such cases aspiration of the meatus will often bring forth some secretion in the perforation. In other cases, as the author has seen in several instances, a small polypus is seen to protrude through the perforation, the base of which can be found with the aid of the probe; with this it is also often possible to detect a carious condition of the surrounding bony areas, and the ossicles.

Such chronic suppurations of the attic may often run their course without any apparent symptoms, and become evident only when the patients begin to complain of headaches, pressure and heaviness in the ear, pains and occasional attacks of vertigo, so that the true nature of the aural affection is revealed only by the otoscopic examination. The longer the condition exists the more extensive the destructive process, so that one often finds caries and necrosis of the malleus and incus and absorption of the bone above the Rivinian segment, whereby such large defects are produced in the superior wall of the external meatus, that the interior of the attic can be readily inspected.

The hearing is, as a rule, not greatly affected in these localized suppurations of the attic, especially if they are not of long standing. This can be explained by the fact that the parts have not undergone extensive tissue changes, so that the vibratory power of the ossicular chain is not yet impaired. If, however, the cases are of a chronic nature, the disturbances in the hearing may be marked for the reason that the ligaments and joints of the ossicles have become fixed owing to the formation of connective tissue adhesions, or the ossicles may have become imbedded in granulations, or may have undergone necrotic changes whereby their power of transmitting the waves of sound has been reduced.

These localized suppurations of the attic associated with perforation of Shrapnell's membrane are of rare occurrence, and according to the writer's experience, are met with in about one case in every two hundred. Moos (2) reported four perforations of Shrapnell's membrane in 126 cases. Marian (3) saw perforation once in sixty-two cases. Morpurgo (4),

from a large clinical experience, found perforation of Shrapnell's membrane in eleven cases. Buck (5) reported two cases in a large series of otitis media suppurative chronica, while Blake (6) described four cases. According to Burnett (7) this occurs in about one per cent. of all the cases. From these statistics it becomes evident that the percentage of cases associated with perforation of the pars flaccida is very small, a fact which may be regarded as rather fortunate inasmuch as this form of middle ear disease presents, as already stated, one of the most obstinate aural affections with which the aurist has to deal.

Treatment: The treatment of suppurations of the attic depends greatly upon the stage in which the patient is seen, and may be divided into the medicinal or conservative, and the radical or operative.

If the cases are seen early, that is when the attic is simultaneously involved in the inflammatory process of the entire middle ear, treatment is applied to the middle ear and not directly to the attic. As the inflammation subsides, the attic also tends to return to its normal condition. The writer will not dwell here on the treatment of such acute inflammations of the attic as it is the same as in any acute otitis media.

In those cases, however, in which the suppuration in the lower tympanic cavity ceases, but continues in the attic, we may try the use of instillations of aqueous solutions. For this purpose it is well to use at first, instillations of hydrogen peroxide (10 drops, warmed, poured into the ear three times a day and allowed to remain there from five to ten minutes). If the discharge from above is rather profuse, it is at times necessary to irrigate the ear first with some antiseptic solution such as boric acid, a weak bichloride solution or a weak potassium permanganate solution and then to instill the peroxide. It has been the writer's experience that no drug acts as well in the acute or subacute stages of attic suppurations as the peroxide, as it seems to have a more cleansing power and is never followed by any unpleasant sequelæ. Syringing is, as a rule, unnecessary.

When, however, the discharge continues in spite of the instillations of the peroxide, which should be used for several weeks, it is well to change to the use of alcohol and boric acid. A mixture of these drugs in the proportion of alcohol one ounce, boric acid, ten grains, may be used. Ten drops, warmed, are to be poured into the ear three times a day and allowed to remain there for from five to ten minutes. In some instances the writer has used formalin with good effect. This can be given either in a one quarter per cent. aqueous solution or combined with glycerin (formaldehyde, gt. v; glycerin, distilled water, $\text{aa } \frac{3}{4}$), ten drops of which warmed may be poured into the ear and allowed to remain for from five to ten minutes and repeated three times a day. In a great majority of cases in which the tissue changes have not been very marked the process is arrested by these methods; the treatment should, however, be tried for at least a few weeks or even months.

In those cases, however, in which these instillations have no effect, and in which the perforation in the drum remains large and patent, better results can be obtained by direct irrigation and injection of medicaments into the attic, as by this means we can

better remove the stagnant inspissated secretion. For this purpose it is best to use the Hartmann cannula, the smaller end of which is bent upward so that it can be introduced through the perforation into the attic, while its lower, broader end fits tightly over the end piece of a small sized air bag. This air bag is filled with an antiseptic solution and under illumination the end of the cannula is introduced into the attic, whereupon the bag is compressed and the fluid forced into the attic. This can be repeated a few times at a sitting until the injected fluid appears perfectly clear. Having done this it is also advisable to inject some medicament into the part. For this purpose we may use a glass syringe of a capacity of about two drachms, which also has a bent cannula as previously mentioned, or the excellent syringe devised by Frey. For injection we may use concentrated alcohol, a two per cent. mixture of alcohol and boric acid, a weak (0.25 per cent.) solution of formaldehyde, or the mixture of formaldehyde, glycerin, and water already mentioned. This treatment should be carried out every other day, until the discharge has become less. When it is noticed that the secretion has become less copious and more of a serous, or mucous nature, we may omit the injections of medicaments, and proceed to the insufflations of powders into the attic. The writer uses for insufflations boric acid, airol, dermatol, and in foul smelling cases, iodoform.

In a large number of chronic suppurative middle ears, the writer has been able to obtain most satisfactory results by this method of treatment, especially in those cases in which operative measures did not have to be resorted to for the removal of granulations, polypi, etc., and in which the diseased process was confined solely to the outer attic.

In the cases in which the affection is localized to the upper tympanic space and associated with perforation of Shrapnell's membrane, the writer pursues the same method as already described, introducing the cannula directly through the perforation into the attic and thus injecting the various medications.

Operative treatment: Cases which are complicated with the formation of granulations and polypi arising from the upper tympanic space, and in which the probe reveals the presence of necrosis of the ossicles or of the surrounding bony walls, usually require operative interference.

In the chronic suppurations in which granulations and polypi are seen to protrude into the tympanic space, it is most essential that they be removed. For this purpose, one may resort to the wire snare, to the various sized ring knives, or to the small spoons or currettes bent at different angles. As these various manipulations cause quite some pain, it is generally advisable to instill a few drops of a ten or twenty per cent. solution of cocaine into the ear for from five to ten minutes. Or if the growths are very large we may inject a one per cent. solution of cocaine directly into them, according to a method which was devised by Frey of Vienna. The writer has also found the injection method of Neumann, for local anesthesia, as described by him in previous papers (8) most excellent for the removal of these polypi, as well as for all intratympanic operations.

Having thoroughly removed the granulations of polypi, it is well to touch the roots with a little trichloroacetic acid, and then to allow the patient to use a mild antiseptic instillation such as hydrogen peroxide for some time. In some cases in which the granulations are very small, touching them with trichloroacetic acid, pure carbolic acid, etc., is sufficient to make them shrink. If the growths have disappeared and the discharge still continues we must resort to the local medication of injection as already detailed.

In the cases, however, in which the discharge continues in spite of all medication, which should be tried for a reasonable length of time, and in which our efforts have been in vain, it is well to adopt more vigorous measures and undertake the extraction of the malleus and incus. These bones which are so frequently in a necrotic condition, no longer perform their function properly and act not only as an obstacle to a free drainage from above, but also as a foreign body, thus keeping up the discharge. The ligamentous bands and adhesions which have developed, as well as the small pouches and pockets which act as the receptacles for the septic material, are thereby destroyed. In removing these structures we not only take away the diseased tissue which is the causal factor in keeping up the chronicity of the suppuration, but we also create thereby a large cavity which allows free drainage and admits of local medication being more readily carried out. We are then also better able to learn the condition of the surrounding bony areas as it affords us a means by which we can get some idea as to the eventual result of our ossiculectomy. If after exenteration of the attic, we find that the walls present a more or less necrotic condition, our prognosis as to the cessation of the suppuration must be guarded, as these cases do not always yield to this method of treatment. It has been the writer's experience, however, that in a great number of cases in which the ossicles have been removed and the attic well curetted, a cure of the aural discharge has been obtained. In all the cases in which ossiculectomy was indicated the writer performed it under local anesthesia, according to the method of Neumann, and described in a previous paper (*New York Medical Journal*, of February 17, 1906). In many cases in which there was an extensive growth of granulations and polypi, and in which the probe revealed the presence of necrotic areas, the writer did not confine himself merely to a thorough exenteration of the attic, but went a step further by removing at the same time its outer or external wall. By doing so we form a large cavity which allows a free drainage, permits one to inspect the parts, and facilitates local medication. Having undertaken these intratympanic measures, it is well to allow the patients to instill some alcohol and boric acid solution or a one quarter per cent. of a formaldehyde solution for a few days, as these operative measures are frequently followed by a slight reaction. The parts may then be dusted with some antiseptic powder for a short time, when it will be found that the secretion ceases entirely and the exposed areas begin to be covered with a thin layer of epidermis.

The favorable results which the writer has obtained in the chronic suppurations of the attic by

these intratympanic operative measures, have convinced him that we possess in them a most valuable method in the treatment of chronic otorrhœa. He has also come to the conclusion that the upper tympanic space is the causal factor in keeping up chronic suppurative of the middle ear in the great majority of cases, and that if we endeavor to remove the pathological conditions in the attic, we are able in fifty per cent. of the cases to bring about a cure of the aural affection.

That we are not always successful in our endeavors is due to the fact that the diseased process is too extensive, having involved a large portion of the surrounding osseous tissue. The intratympanic operative measures yielding such favorable results, however, in such a large percentage of cases, convinces one that they are of value in the chronic otorrhœas, and ought to receive a fair trial in all cases in which medicaments have failed.

It is the writer's opinion that if they would receive the attention they should, many cases of chronic suppurative would be brought to a favorable issue, and the radical mastoid operation would frequently become unnecessary.

If after the exenteration of the upper tympanic space, the discharge continues unabated after several months, we may then be certain that the diseased process is more extensive, and may then turn to the radical mastoid operation as a last therapeutic measure. This, however, should not be advocated too soon, as is the custom with many surgeons, for the favorable results obtained by the writer in chronic otorrhœas by curing the localized attic suppurations have convinced him that many cases of chronic aural disease can be made to cease by these intratympanic measures alone. They not only, in many cases, bring about the desired result, but allow the patient to continue his occupation uninterruptedly, and spare him the unpleasant after treatment associated with the mastoid operation.

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57 EAST FIFTY-EIGHTH STREET.

THE PRESENT STATUS OF VACCINE THERAPY.

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Since the announcement by Wright, in his visit to the United States in 1907, of his vaccine therapy hundreds of men all over this country have attempted to follow his technique in treating bacterial diseases with the hope of securing results as brilliant as his own. Very few variations in the technique have been introduced. This method of treatment has its ardent advocates, who hail it as a cureall for all infections. Not a few skeptics have scoffed at it from the beginning.

So long as it was deemed necessary to administer the treatments as determined by the opsonic index the average general practitioner could not utilize the method. Recently a great deal of vaccine therapy has been employed by many workers who have relied wholly on clinical symptoms as the guide to the size and frequency of the dose. The results have been almost uniformly satisfactory. This has resulted in quickening the interest of the general practitioner. Many of these men who formerly looked upon this method of treatment as ultra scientific are now asking what is the field for vaccine therapy and of what value is it. Current medical literature does not answer these questions very satisfactorily. A large majority of the writers are enthusiastic and report brilliant results. It is also true that the majority of these enthusiastic writers have worked up their enthusiasm over a very few cases—often only two or three and these often treated by well established routine methods in addition to the vaccines. Some have reported brilliant results in some series of particular infection as in acute gonorrhœa or typhoid fever, while others have been unable to secure any favorable results in these particular infections. From a great deal of the literature no definite data can be secured.

It is almost time for the reaction from the enthusiasm which has been displayed in this work to set in. Undoubtedly the pendulum will swing back too far, and condemnation will be piled up where it is not deserved. It will then remain for the few conservative workers who are convinced of its value as a method of treatment to put it on a sound and sane basis. Stock vaccines and the wide advertising of their wonderful curative properties by drug houses will doubtless be the very means of discrediting this method of treatment.

It is generally agreed that stock vaccines in many cases are just as efficacious as autogeneous vaccines, but stock vaccine can never put this method of treatment into the hands of the general practitioner wholly. Granting that a knowledge of the opsonic index is not essential to the administration of vaccines, it is still essential that the practitioner know what particular organism is producing the disease, and the size and frequency of the dose can never be administered as a drug is given. To secure good results the size and frequency of the dose must vary with each patient and his ability to respond in developing a specific resisting power.

The close observation of the opsonic index in the past has given us a plan of treatment which can be

followed by the general practitioner as a rule with good results. In the treatment of boils and carbuncles one will not go far wrong if one employs a stock vaccine of polyvalent staphylococci, every five or seven days, beginning with 100,000,000 and increasing the dose to 500,000,000. The same method of treatment can be employed in syphilis due to the staphylococcus. The same procedure is used by many in the treatment of pustular acne, but, in my experience a vaccine of *Staphylococcus citreus* has given better results.

Staphylococcic infection: Almost every one who has employed vaccine therapy has stated that his most uniform results were obtained in infection due to the staphylococcus. That acne, boils, carbuncles, furunculosis, syphilis, and even spreading infections due to this organism are most favorably influenced by vaccines is acknowledged unanimously. Of the four cases of staphylococcic infection reported cured by Dr. Illman and myself one patient returned. Mrs. S. who had suffered with pustular acne for twenty-three years and cleared up after six injections remained entirely free from acne for one year. Two pustules then developed on the forehead which yielded promptly to two injections of *Staphylococcus citreus* of 300,000,000 each. So far as we have been able to learn the other patients are still well.

Dr. W. K. Trimble reports two cases of otitis media (chronic) due to the staphylococcus. One of these patients was cured of the discharge with six treatments. The second patient stopped coming after the fourth injection. A third case due to the staphylococcus and *Bacillus pyocyaneus* of twenty-one years' duration was cured in six weeks. A fourth case of acute otitis media due to the *Bacillus pyocyaneus* alone yielded no result.

Dr. G. B. Webb reports nine cases of acne (variety not stated) treated by inoculations of staphylococcus. Four of these patients were cured temporarily. The recurrences were again removed by inoculations. Two of the nine patients showed no improvement.

In my own experience with eleven cases of acne, the patients of five cases of pustular acne have improved after the first injection and gone on to a temporary cure. At least but little or no improvement could be noted in six patients of papular acne treated by inoculations only.

Dr. Webb reports cures from staphylococcus inoculations in six cases of styes, boils, and carbuncles, and three cases of pyorrhea alveolaris. He states that staphylococcus vaccine has, in his hands, reduced the amount of sputum in mixed infections of consumption markedly.

Staphylococcus vaccines have proved of the greatest possible value in the treatment of carbuncles. Seven patients under my observation may be counted cured, temporarily at least. One patient, a diabetic of seventy years of age, with carbuncle of the neck in whom the infection extended down over both scapula and well up under the scalp, improved with four treatments but died of diabetic coma. In the first few cases of carbuncles free incision and drainage was supplemented by inoculations to promote healing and establish immunity against the crop which usually follows the appearance of the first carbuncle. Recently the incision

has been dispensed with and the inoculations alone have been very successful.

Two patients with diffuse staphylococcic infection, one from a laceration due to a fish fin and another with a crushing wound, were markedly benefited by inoculations when amputation seemed imminent. Crofton, in the *British Medical Journal*, reports a case of osteomyelitis following injury to the humerus with metastatic abscesses in which the patient made a good recovery after being bedridden for two years. Inoculations of staphylococcus were used every third day for four doses.

Concerning staphylococcus cases Dr. J. C. Hollister says "thirty-four cases were persistently treated, twelve of acne (face and neck); fifteen of boils or large furuncles; two of empyema; one mixed infection with cases of lupus; two of fistula, mixed. Of the thirty-four cases thirteen patients were cured, thirty-eight per cent.; eleven were somewhat improved, thirty-two per cent.; and eight were not improved, twenty-four per cent. The eight cases showing no improvement were four of acne, three of boils, one of empyema (mixed lung tuberculosis). Twenty-five of the patients were treated with autogenous, and the others with stock vaccine. Of these twenty-five patients eight improved greatly, thirty-two per cent.; nine improved slightly, thirty-six per cent.; making sixty-eight per cent.; eight did not improve, thirty-two per cent. Of the nine patients treated by stock vaccine seven were cured and two were slightly improved."

Streptococcic infection: G. W. Ross and W. J. Johnson treated fifty cases of erysipelas by vaccine therapy and report very satisfactory results in all of their patients but one. In sixteen of these patients the inoculations were administered according to the index. Their patients were very often relieved after the first dose, their stay in the hospital was materially shortened, and complications were almost unknown.

In our dispensary eight patients with erysipelas have yielded almost promptly to one or two inoculations of streptococci. In only one of the eight patients was there manifested a tendency to relapse and this was apparently controlled by further inoculations. This patient moved from the city and was lost sight of.

Trimble states that in a case of otitis media and mastoiditis of two months' duration inoculations of streptococci every three or four days for several weeks in doses of 20,000,000 gave no result. G. H. Weaver and Ruth Tunnicliffe secured good results in two cases of otitis media following scarlet fever by the use of injections of streptococci killed by galactose solutions.

Weaver and Broughton employed injections of polyvalent heterologous streptococci killed by suspension in twenty-five per cent. galactose solution in twenty-two cases of erysipelas. Nineteen patients received but one injection (200,000,000); one patient received two injections; one patient received three injections; and one patient received many injections. Only three patients (migrating type) showed improvement. In these the spreading ceased in two days and the patients made rapid recoveries. They used the same injection in 116 cases of scarlatina while 158 patients were used as controls. Eighty-three of the patients received the injections

during the acute stage of the disease before any pyogenic complication set in. They state that injections during the acute disease do not lead to any considerable amount of antistreptococcal immunity. Thirty-one patients were injected after the complications manifested themselves. Eleven of these patients showed prompt improvement. Improvement was most marked in subacute and chronic cases.

Schorée (*American Journal of the Medical Sciences*) treated thirty-seven cases of erysipelas with streptococcal vaccines. The disease was apparently shortened but migration or recurrence was not prevented.

Wright and others report three cases of ulcerative endocarditis due to the streptococcus treated unsuccessfully by vaccines.

T. J. Horder treated four such patients with temporary improvement in two but all died later. Of two cases due to the influenza bacillus treated by vaccines one patient recovered.

In the treatment of puerperal infections bacterial vaccines are now being given a trial.

Dr. B. C. Hirst in the last edition of his work on *Obstetrics* says: "In one of my cases of severe and long continued streptococcal infection which had resisted all other treatment, an injection of two and a half million streptococci was followed immediately by a permanent disappearance of all symptoms."

Brisco and Williams report in the *Practitioner* the use of pneumococcal vaccine in eight cases of pulmonary consolidation and empyema following pneumonia, bronchitis, and operation with improvement in six cases, no improvement in one, and death in one. A ninth case of consolidation due to the staphylococcus cleared up in three days after the first injection. The tenth patient with consolidation due to Friedlander's bacillus was markedly improved by inoculation. They also secured good results by inoculation in two cases of asthma and bronchitis accompanied by a Gram positive diplococcus.

Dr. C. Jones reports improvement in sixteen cases of bronchial asthma out of twenty patients treated by this method.

G. B. Webb used pneumococcal vaccine and cured one case of otitis media that had resisted every other routine measure.

In a case of pneumococcal meningitis in the service of Dr. J. McKee I employed pneumococcal vaccine but with no result. Dr. Webb treated two antrum of Highmore infections and two middle ear infections due to the pneumococcus with most gratifying results after not more than two or three inoculations. Another case of Dr. Webb's of chronic pneumococcus infection of the frontal cells received no benefit from many inoculations. He reports an interesting case of an infant suffering with double suppurating middle ear disease due to the pneumococcus and staphylococcus resisting every kind of treatment. As the infant was nursing inoculations were administered to the mother with the result that the discharge from the infant's ears lessened and one ear healed after the second injection. The infant was then inoculated and complete cure resulted.

Fifteen months ago Dr. Illman and I reported our results in the treatment of thirteen cases of localized tuberculosis. Five of these patients were re-

ported as cured; four improved; and four without result. Of the five patients reported cured one (bone tuberculosis) has returned with a discharging sinus. Three inoculations of tuberculin residue 0.001 milligramme each dose at intervals of one week caused the sinus to heal. The treatment was continued for a month after this apparent cure. During the past year I have treated with bacillin emulsion and tuberculin residue fourteen cases of tuberculosis, eight cases were of the cervical glands, four bone, one pulmonary, and one tuberculous keratitis. Five of the gland cases were cured temporarily at least. Two patients suffered slight relapses but quickly recovered when the inoculations were resumed. One did not improve. The cosmetic result in these patients is certainly far superior to that secured by any surgical procedure. When these patients present large glands beginning to break down a puncture is made with a small bistoury—but no incision—a small catgut drain is then introduced and kept there so long as the discharge continues. The results have been most gratifying. Three of four cases of bone infection have gone to a temporary cure at least.

The one case of pulmonary tuberculosis was well advanced. For about three months the patient seemed to be doing very well. Every symptom improved and he returned to his wagon as driver. During the summer he took ten days camping in a Jersey swamp. The vacation proved a ten days drunk and eventually the death of the patient.

The case diagnosed as tuberculous keratitis was most interesting. The patient, a girl of nine years, blond type, large for her age and apparently well developed, gave a tuberculous family history. Pain, photophobia, and lachrymation characterized the local lesion. The cornea was dull grayish white and bathed in pus. Everything in tonic and local treatment failed to produce a cure. As a last resort tuberculin residue 0.001 milligramme, once a week was given with no other treatment. The eye has been well for some eight months.

Dr. J. C. Hollister says that he "treated forty-one cases of tuberculosis over a sufficient length of time to draw the following conclusions. Eight of these were generalized infections, thirty-three localized. Of these forty-one cases, twenty-nine were bone or joint cases, of which six have also other evidence of tuberculosis.

Case.	much,	Improved slight,	not,
Bone and joint, 29 cases.....	9	10	10
Genitourinary, 2 cases.....	2	..	..
Pulmonary tuberculosis, 3 cases.....	..	..	3
Pulmonary tuberculosis plus bone and joint (included in bone and joint above), 4 cases.....	..	..	4
Glands of neck, 4 cases.....	..	2	2
Generalized (genitourinary, skin, lungs), 1 case.....	..	..	1
Peritonitis, 1 case.....	..	..	1

"Of all these forty-one cases twenty-eight patients or seventy per cent. improved (fifteen greatly, thirteen slightly), thirteen or thirty per cent. were unimproved. Ten of the thirteen unimproved were of the generalized type. In five cases, all of which improved very much, passive hyperemia was used in addition to the tuberculin. In nine of the fifteen greatly improved patients the beneficial effects of the vaccine were very marked indeed. In one pa-

tient there can be no reasonable doubt that a life was saved (urinary tract infection)."

Dr. C. Jones has treated twenty cases of pulmonary tuberculosis, administering the tuberculin as indicated by the index. The tubercle bacillus was found in the sputum of all cases. All cases were treated three months. Every patient was kept in bed fourteen days after the temperature became normal. Tuberculin emulsion was used at first but this did not raise the index satisfactorily so tuberculin residue was substituted. The dose was 1/1500 to 0.01 milligramme. Intervals between injections fourteen days. Results: Eight satisfactory (one laryngeal); four doubtful; four unsatisfactory; four patients died. He says: "We have not the least hesitation in saying that the results obtained in these cases, in which tuberculin inoculations have been employed, are incomparably better than those without such vaccination."

H. S. Collier says that in 150 cases of surgical tuberculosis treated with tuberculin the patients have run a course uniformly more smooth than those not receiving tuberculin and that in these cases other foci have not developed.

Hunter F. Tod and G. T. Western report the use of tuberculin in lupus and tuberculous disease of the ear, nose, and throat in nine cases. Three patients were cured; five patients showed marked improvement; and one patient showed no result.

J. W. Thomson Walker treated the following cases of genitourinary tuberculosis with from 0.002 to 0.05 milligramme tuberculin residue every seven or fourteen days. One tuberculous cystitis and tuberculous kidney, marked improvement; ten tuberculous cystitis, marked improvement; thirty-two tuberculous cystitis and tuberculosis in genitourinary tract and elsewhere, improvement; three tuberculosis of the genitourinary tract, tuberculosis, and pulmonary tuberculosis, one patient improved, two died.

Hamman and Wolman, in the *Johns Hopkins Hospital Bulletin* of August, 1909, report that they have had fifty-seven cases of pulmonary tuberculosis on tuberculin treatment for at least ninety days with the following results. Ten patients were apparently cured, in sixteen the disease was arrested, twelve were improved, in eighteen the disease was progressive, and one died. In selecting the cases the stage or the extent of the disease is not considered. They have used tuberculin T. O., T. R., and B. F., and have little preference. The initial dose was usually 0.001 milligramme provided the patient was in fair condition, and smaller if the patient was absorbing toxins from an active lesion. The dose was gradually increased in size once or twice a week.

Gonorrhæa: Gonorrhæal vaccine in cases of acute infection has given us absolutely no results. In these cases doses of from 50,000,000 to 100,000,000 were employed weekly. Several writers have reported almost brilliant results with the same technique as employed in our dispensary. Unfortunately for our patients we have not been able to secure such results. Four patients with gonorrhæal orchitis and two with gonorrhæal abscess have undoubtedly been benefited by vaccine treatment.

One case of gonorrhæal orchitis with no other treatment than a suspensory and a dose of 100,000,000 every third day cleared entirely in ten days.

Just how much the vaccine contributed to the result we are unable to say.

In December, 1908, J. C. Hollister reported that he had treated sixty cases of acute gonorrhæa by vaccine, compared them with fifty control cases, and did not find the vaccine of any value. In a series of fifty cases of gonorrhæa in young women, who were divided into five groups (1, given usual hospital treatment; 2, gonococcus vaccine plus hygiene; 3, antiseptic treatment plus vaccine; 4, irrigations and spongings of salt solution; 5, antigonococcal serum) his conclusion is that "the gross discharge from the cervix, vagina, and urinary meatus diminished more quickly in the group receiving vaccine therapy plus the usual hospital antiseptic treatment, and those receiving vaccine alone, and this is as true of the latter as of the former."

Alice Hamilton and J. M. Cook treated sixty acute and seven chronic cases of vulvovaginitis in children with vaccine and state that the chronic cases received more benefit from the vaccine than the acute cases. In the acute cases the vaccine seemed to shorten the later stages.

W. J. Butler treated twelve cases of acute and thirteen of chronic gonorrhæa in female children. He states that nine patients of the acute state recovered and eleven of the chronic.

Gonococcal vaccines seem to have given universal satisfaction in arthritis due to the gonococcus. Among the first to report its benefits were Cole and Meakins who treated fifteen cases of gonorrhæal arthritis by inoculations, using from 300,000,000 to 1,200,000,000 at a dose, with decided value.

E. E. Irans treated thirty-one cases of gonorrhæal arthritis with satisfactory results in all but four cases.

Typhoid: Two years ago Dr. Illman and I administered vaccines to a small series of patients suffering with typhoid fever. It did seem that the course of the disease was slightly shortened, but we were unable to draw any definite conclusions showing wherein the vaccines were of value. At that time we administered 50,000,000 at a dose at intervals of from seven to ten days. At my first opportunity I hope to resume this study but with much larger doses (from 500,000,000 to 2,000,000,000) and at closer intervals.

Watters and Eaton treated thirty cases of typhoid with vaccines, and state that their mortality was much lower than in the cases treated by the regular routine. Seventy-five per cent. of their cases were favorably influenced. The dose used was from 25,000,000 to 50,000,000. Posttyphoid lesions such as bone necrosis with discharging sinuses apparently respond better to vaccine treatment than any other method of treatment.

Dr. James H. McKee referred to me a small boy of five years suffering with discharging sinus in the scalp following an operation for an abscess under the scalp which the surgeon discovered involved the bones of the skull beneath. The necrosed bone was curetted but the sinus resulted. The patient was afflicted also with discharging sinus from both parotid glands and a much swollen knee joint which had been put in a plaster cast. Dr. McKee felt so sure that the lesions were the sequelæ of a previous attack of typhoid that he requested me to give him typhoid inoculations. The index was found to be

0.8. The initial dose of 50,000,000 brought the index up to 1.1 and there was marked improvement in the clinical symptoms. The dose was gradually increased to 120,000,000 and nine inoculations resulted in an apparent cure. Normal motion was regained in the joint.

Dr. G. B. Webb reports two cases of postsyphoid bone necrosis cured by the use of inoculations.

Cases.	Infection.	Disease.	Results.				
			Cured.	Salts factory.	Slight.	No.	Died.
2	Staphylococcus aureus and pyocyanus	Otitis media.....	1	..	..	1	..
6	Staphylococcus	Otitis media.....	1	..	..	..	..
6	Staphylococcus	Acne (pus).....	5	..	3	2	..
6	Staphylococcus	Acne.....	..	..	6	..	..
6	Staphylococcus	Styes, boils.....	..	..	..	..	..
3	Staphylococcus	Pyorrhea alveolaris.....	3	..	..	..	..
3	Staphylococcus	Carbuncles.....	6	1	..	..	..
2	Staphylococcus	Diffuse infection.....	..	2	..	..	..
12	Staphylococcus	Osteomyelitis.....	1	..	..	..	..
5	Staphylococcus	Acne.....	..	..	..	..	..
2	Staphylococcus	Boils.....	..	..	..	..	..
1	Staphylococcus, mixed	Empyema.....	..	..	..	..	..
2	Staphylococcus, mixed	Lupus.....	13	..	11	8	..
1	Staphylococcus	Fistula.....	..	..	..	..	..
75	Staphylococcus	Pulmonary consolidation.....	1	..	..	..	..
50	Streptococcus	Erysipelas.....	49	..	1	..	..
8	Streptococcus	Erysipelas.....	7	1	..	..	..
1	Streptococcus	Otitis and mastoiditis.....	..	..	1	..	..
2	Streptococcus	Otitis and mastoiditis.....	2	..	..	..	..
23	Streptococcus	Erysipelas.....	3	..	19	..	..
83	Streptococcus	Scarlet fever.....	..	..	83	..	..
31	Streptococcus	Scarlet fever.....	11	20	..	..	..
37	Streptococcus	Erysipelas.....	..	37	..	..	..
3	Streptococcus	Ulcerative endocarditis.....	..	..	3	..	..
4	Streptococcus	Ulcerative endocarditis.....	..	..	..	..	..
1	Streptococcus	Puerperal sepsis.....	1	..	..	..	..
242			8	66	59	109	..
8	Pneumococcus	Pulmonary consolidation.....	6	..	1	1	..
1	Pneumococcus	Otitis media.....	1	..	..	..	..
1	Pneumococcus	Meningitis.....	..	..	..	1	..
2	Pneumococcus	Antrum highmore.....	2	..	..	..	..
2	Pneumococcus	Otitis media.....	2	..	..	..	..
1	Pneumococcus	Frontal cells.....	..	..	1	..	..
1	Staphylococcus, gram positive	Pneumonia, otitis media.....	1	..	..	..	..
20	Diphtheria, gram positive	Asthma, bronchitis.....	2	..	..	..	..
1	Bordetella bacillus	Asthma, bronchitis.....	16	..	4	..	..
20		Pulmonary consolidation.....	..	1	..	..	..
8			8	23	..	6	2
1	Pyocyanus	Otitis media.....	..	..	1	..	..
2	Influenza bacillus	Ulcerative endocarditis.....	1	..	1	..	..
1			1	..	2	..	..
8	Tubercle bacillus	Cervical glands.....	7	..	1	..	..
4	Tubercle bacillus	Bone joint.....	3	..	1	..	..
1	Tubercle bacillus	Cornua.....	1	..	..	..	..
1	Tubercle bacillus	Pulmonary consolidation.....	..	..	..	1	..
20	Tubercle bacillus	Pulmonary consolidation.....	8	4	4	4	..
41	Tubercle bacillus	General local tuberculosis.....	15	13	13	..	..
9	Tubercle bacillus	Lupus, ear, nose, throat.....	3	5	1	..	..
1	Tubercle bacillus	Bladder, kidney.....	..	1	..	..	..
10	Tubercle bacillus	Cystitis.....	10	..	..	..	..
32	Tubercle bacillus	Genitourinary tract.....	..	32	..	..	..
3	Tubercle bacillus	Genitourinary and pulmonary tuberculosis.....	..	1	..	2	..
150	Tubercle bacillus	Pulmonary tuberculosis.....	10	16	12	18	1
337		Surgical tuberculosis.....	13	66	62	38	8
1	Gonococcus	Arthritis.....	4	..	..	..	..
2	Gonococcus	Abscess.....	2	..	..	..	..
1	Gonococcus	Orchitis.....	1	..	..	..	..
60	Gonococcus	Acute gonorrhoea.....	..	..	60	..	..
10	Gonococcus	Acute gonorrhoea (female).....	..	10	..	..	..
60	Gonococcus	Acute gonorrhoea vaginitis.....	..	..	..	..	..
7	Gonococcus	Chronic gonorrhoea vaginitis.....	..	..	..	..	..

Cases.	Infection.	Disease.	Results.			
			Cured.	Salts factory.	Slight.	Died.
12	Gonococcus	Acute gonorrhoea (female).....	9	..	3	..
13	Gonococcus	Chronic gonorrhoea (female).....	11	..	2	..
15	Gonococcus	Arthritis.....	15	..	..	..
31	Gonococcus	Arthritis.....	27	..	4	..
215			..	60	10	69
30	Typhoid bacillus	Typhoid fever.....	75	per cent.	satisfactory	..
1	Typhoid bacillus	Posttyphoid attack.....	1	..	..	..
2	Typhoid bacillus	Posttyphoid attack.....	2	..	..	..
33			3	..	..	..

841 Total number of cases.

2721 WEST LEHIGH AVENUE.

INTRAMUSCULAR INJECTIONS IN THE TREATMENT OF SYPHILIS.

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Since publishing my papers on the intramuscular injections in the treatment of syphilis, in the *Medical Record*, 1905, and the *New York State Medical Journal*, March, 1909, advocating a preference for the salicylate of mercury, the strength of the suspension of this drug has steadily been increased, until a 66 $\frac{2}{3}$ per cent. of the salt in liquid albolene is now used, combined with anhydrous lanolin. The lanolin is in such amount that it converts the preparation into a molasseslike consistency, so that the albolene does not separate therefrom, thus obviating the necessity for shaking the bottle before each dose, in order to secure proper suspension of the salicylate in the oil and consequently uniform doses, bulk for bulk. The final outcome is that the suspension is much more stable than in any other way.

The following table shows the doses of salicylate of mercury in grains, given in small fractions of a cubic centimetre of this combination. A cubic centimetre is nominally fifteen drops,—two thirds of fifteen (66 $\frac{2}{3}$ per cent.) are 10 grains; that is to say, one cubic centimetre of this suspension contains ten grains of the salicylate of mercury, and one tenth of a cubic centimetre will contain one grain of the salicylate of mercury.

Table showing doses of salicylate of mercury, in grains equivalent to fractions of a cubic centimetre of 66 $\frac{2}{3}$ per cent. suspension administered:

Dose of salicylate of mercury in grains	Fractions of cubic centimetre required.	Equivalent in minims (approximate).
1.....	0.1	1.5
2.....	0.2	3.0
3.....	0.3	4.5
4.....	0.4	6.0
5.....	0.5	7.5
6.....	0.6	9.0
7.....	0.7	10.5
8.....	0.8	12.0
9.....	0.9	13.5
10.....	1.0	15.0

A careful study of the foregoing table will show how readily determined are varying doses of the mercury, and also how small a quantity of the fluid is injected to give as large a dose as three grains, for example.

Ordinarily speaking, the bulk of the fluid injected is the chief cause of pain after treatment; that is to say, the smaller the bulk the less the pain. As this formula requires the smallest possible number of drops, the great advantage in connection therewith is at once apparent.

Another means of avoiding pain, not spoken of in my previous papers on this subject, is that the finger of the surgeon must determine whether or not the glutei are relaxed, both before plunging the needle and before emptying the syringe into the muscle. A muscle which is held hard and tense by the patient is more resistant to both these processes, and hence invites pain. Also, a muscle so held tends to force the injection out into the fat, which leads to nodes more than any other factor. A little careful training would teach the average patient how to forget about his muscle and leave it soft and flaccid.

It is obvious that so strong a suspension of the drug requires very accurate measuring. For this purpose, a syringe is made which cannot be improved. It was designed for tuberculin injections, holds one cubic centimetre, and is graduated in tenths thereof; thus permitting the small amounts of fluid and the large amounts of drug to be employed in accordance with the foregoing table.

The graduations marked on the glass barrel of the syringe become obscured by the white salicylate of mercury beneath them. Consequently, the writer has had the shaft of the plunger marked with these graduations, in order to make definite measuring of the dose possible and certain.

The advantages of this stronger suspension are sufficiently set forth in the preceding paragraphs. Also embolism will possibly be less common, because the medicine is semisolid and coheres strongly. The disadvantage is that a larger needle is necessary to permit the molasseslike mass to flow through it. This increased diameter of needle adds to the tendency to bleeding. After all, this is a very minor matter, and stops quickly under a little pressure or tincture of iodine, painted over the prick in the skin.

The one caution of the method is to have a competent chemist prepare the mixture aseptically. It is quite axiomatic that the graduations on the syringe must be carefully made and read.

45 WEST NINTH STREET.

THE TECHNIQUE OF ROUND LIGAMENTS SHORTENING THROUGH THE INTERNAL RING, COMBINED WITH COLECTOMY.

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If an excuse is necessary for again writing upon a subject presented some years ago (*Surgery, Gynecology, and Obstetrics*, November, 1905) it lies in the increasing interest shown in and the frequent inquiries for the technique of the operation which I then described, and the fact also that a wider experience enables me to point out important points in the technique not at first emphasized. True, since then several exhaustive articles under

well known names have proved to the satisfaction of the author that no operation is required to hold the uterus in position, but this has not lessened the suffering of the patient with mal position of the uterus nor obviated the necessity for her relief at the hands of the practical gynecologist.

The anatomical arrangement of the ligaments of the uterus speak very strongly in favor of the fundus being forward and the cervix backward. No abdominal organ may change its position or location markedly without causing a considerable percentage of morbidity. The principles which govern the support of the abdominal organs, and the construction of the walls to prevent hernias, speak very strongly against the uterus having so wide a range of movement as to get in line with the vagina, for this favors vaginal hernias. (See *Obstetrics and Diseases of Women*, April, 1909.) Clinical observations furnish unbounded evidence that retrodisplacement and prolapse are undesirable. These should be dealt with according to certain well defined principles. The time has not come and never can arrive, when operative treatment should be applied to all cases, for the principles which govern are abiding and cannot reasonably be set aside. Operative treatment cannot justly be abandoned at the present time, although when "preventative medicine" comes into its own there will be much less need of surgery along this and other lines.

During the last decade great ingenuity has been exercised to obtain a different—sometimes better—sometimes worse—operation to hold the uterus forward. When they have failed they have departed from, and where they have succeeded they have adhered to certain well known principles. In 1881 Alexander proposed dealing with those cases in accord with what he considered essential principles, 1, using natural ligaments, and 2, keeping out of the abdomen. A few years later Olshausen, Kelly, and others found it so essential to open the abdomen that they thought it desirable to ignore the points of advantages urged by Alexander, and after correcting conditions in the abdomen created new pathology by making a false ligament.

Ever since that time gynecology has been trying to devise a procedure which will offer the advantages of the one without the faults of the other. It is not entirely a question of treating retrodisplacements, it is a question of treating retrodisplacements and their complications. We have displacements combined with complicating conditions in one of four ways: 1, The displacements and the complications may have a common aetiological factor; 2, the displacement may be an aetiological factor in the complication; 3, the complication may be an aetiological factor in the displacement; and 4, the displacement and the complication may have entirely independent aetiological factors.

The complicating conditions are so variable as in one case to appear as an incident in the displacement and in another to outweigh in importance the displacement itself. Our treatment, however, must look toward the correction of each. An operation for wide application must present the following advantages: 1. It should be safe, no immediate or remote mortality. 2. It should be simple in technique. 3. It should allow inspection of intrapelvic conditions. 4. It should allow correction of intra-

pelvic conditions through the best opening. 5. It should use normal ligaments, creating no false ones. 6. It should use the best part of natural ligaments. 7. It should use natural ligaments in such a way, that they remain normally placed in the abdomen, allowing of no opportunity for entanglements of the bowel or omentum. 8. It should be permanent with or without future pregnancy. 9. It should not interfere with pregnancy, delivery, or involution. An operation which presents these advantages is bound to live; one that does not must recede.

In November, 1903, I began doing an operation which I denominated "intramural transplantation of the round ligaments" which had the following technique which I quote from my former paper:

1. The abdomen is opened in the median line, through an incision one and one half to two inches in length.

2. Intraabdominal complications are dealt with.

3. The round ligaments are picked up with the author's rubber jaw forceps, and a control ligature is thrown around each ligament about two and one fourth to two and one half inches from the angle of uterus. If they are exceedingly well developed a longitudinal slit is made over the ligament and the peritoneum not included.

4. The edge of the aponeurosis over the rectus muscle is now grasped close to the lower angle of the wound, and the author's curved ligature forceps is carried between the aponeurosis and the rectus muscle, outward to the natural exit of the round ligament, the internal ring, where the forceps is guided into the abdomen by sight or by means of one or two fingers through the abdominal incision. It is not difficult to have the forceps follow the round ligament subperitoneally to the control ligature.

5. The forceps now grasps the control ligature, and it is withdrawn and along with it a loop of round ligament.

6. Each loop of round ligament, while being held by the control ligature, is sewed to the under side of the aponeurosis with catgut, about one inch from the median line, and should the loops prove long enough, as they frequently do, they are sutured together in the median line over the recti muscles.

Tracing the round ligament we now have it running from the uterus to its normal exit, the internal ring, then under the aponeurosis to the lower angle of the abdominal incision, close to the symphysis pubis, to the under side of which the aponeurosis is attached one inch from the incision. The ligament now retraces its steps to the internal ring, from whence it follows its normal course to the labium majus. This leaves no opening for strangulation of the bowel. The ligament leaves the abdomen at its normal place and utilizes the normal structures as a pulley for the round ligament. The uterus is now held by the very best part of the round ligament, a ligament which has capacity for evolution during pregnancy and involution thereafter.

The distinctive feature of the operation is that it was the first operation to carry the ligaments out of the abdomen at the internal ring after securing them in the abdomen where they are easily found.

The technique of dealing with the ligament after it is carried through the internal ring has been modified by Martin, Dudley, Benjamin, and others, each making the operation somewhat more difficult. Mayo and others modify the technique of getting the ligament by picking it up with the forceps through the internal ring, not putting the preliminary control ligature upon the round ligament, and this I had previously tested, but find that it has the following disadvantages: 1. A larger abdominal incision; 2, more manipulation of the forceps through the internal ring; 3, less certainty of manipulation; 4, occasional crushing asunder of the ligament; 5, frequent slipping of the ligament from

the bite of the forceps, as a result of care not to crush the ligament.

After a long experience with the control ligature, and some experience without I would urge the desirability of this step.

A number of men who have adopted and described this technique speak of grasping the ligament one and one half inches from the uterus. When it is remembered that this portion of the ligament is to run to the internal ring and then through the abdominal wall to the median incision it will be seen that this gives a small amount of ligament to make that excursion. I am in the habit of putting the control ligature upon the ligament at the junction of the middle and outer third of the intra-abdominal portion of the ligament. This draws the outer two thirds of the ligament into the abdominal wall and leaves the inner third—the best part of the ligament—running from the internal ring to the uterus.

Even with this longer portion of the ligament than is used by some I do not bring as much over the recti muscles to meet in the median line as I did when I made my original report, as an uncomfortable pulling was occasionally observed.

This operation which has been pronounced by Smythe and others a most perfect procedure, yet has its necessity for certain cautions:

1. The ligament must be rendered free from adhesion to sigmoid appendix, cæcum, small bowel omentum, or bladder.

2. In drawing the ligament from the ring it must be observed that no abdominal structure is included between the ligature and the broad or round ligament.

3. Too much tension must not be exerted upon the ligament for fear of inguinal distress or drawing the uterus too near the anterior abdominal wall.

No hernias have been observed after hundreds of operations extending over six years of time. Many of our patients have gone through childbirth with entirely favorable results. One was operated upon for incarceration of the four months' gravid uterus, this procedure following the release of the uterus with pregnancy continuing to term. One patient returned for a second operation, the uterus having been drawn backward by firm adhesions to the right broad ligament, greatly elongating the right round ligament. One other case has been observed in which firm adhesions returning after the operation are giving the round ligaments a severe test. I have ceased to have fears that this operation will fail as the Alexander frequently does. It has occasionally been found desirable to shorten the sacrouterine ligaments and very frequently necessary to build a new pelvic floor.

My procedure has been denominated by some the "internal Alexander operation," but Alexander emphasized so emphatically the point of keeping out of the abdomen that intraabdominal round ligament shortening cannot rightfully be charged or credited to Alexander.

Time has demonstrated that it has the following advantages: 1, Safety; 2, simplicity, or only a moderate degree of technicality; 3, it allows inspection and correction of abdominal conditions; 4, it uses natural ligaments; 5, it uses the best part of these

ligaments; and 6, it places the ligaments normally, their exit being through the internal ring. Theory suggests that this should and numbers of our cases furnish evidence that it does stand the double test of pregnancy, that is the operation does not interfere with pregnancy, delivery, and involution, and these processes do not interfere with the permanency of the operation.

346 DEARBORN AVENUE.

A CASE OF CHOLELITHIASIS SIMULATING DUODENAL ULCER.

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Elsewhere¹ I pointed out the importance of a thorough investigation of the various gastric functions in distinguishing between gastric ulcer and hepatic calculi. I dwelt on the impossibility of distinguishing between the two diseases from clinical symptoms and by any methods at our command at present, in the absence of occult blood in the gastric contents or faeces. By proving or disproving a diseased condition of the stomach, however, the clinical history of the disease assumes a more definite and limited aspect, and it becomes a simple matter to refer the symptoms to the offending organ. The crucial point is the presence or absence of excessive digestive secretion, and of microscopic retention in the fasting stomach. Gastric ulcer, by its irritation of the gastric mucosa and by prolonged retention of food in the stomach, causes excess of digestive secretion. Interference with the motor power of the gastric musculature will result in moderate or very slight retention of food particles, thus giving rise to microscopic retention of food particles in the fasting stomach in pyloric ulcer. In cholelithiasis the stomach is not affected, showing merely an increased acidity of its contents. Perigastric adhesions may give rise to stagnation, but a history of repeated attacks of pericholecystitis or of localized peritonitis will easily indicate the true condition. As gastric irritability may be due to gastric ulcer or cholelithiasis, the causative factor of such irritability must be decided upon by carefully examining into the condition of both the liver and the stomach. The liver seldom presents palpable abnormalities in hepatic calculous disease, the burden of proof, therefore, falls on the stomach.

I cite the following case as an illustration of the difficulty in arriving at a correct diagnosis in gastric irritability:

CASE.—Mr. B., forty-nine years of age, became sick rather suddenly four weeks previous to consulting me. His previous history was rather interesting from the fact that in the last six years he had two violent attacks of gastroenteritis, lasting from two to three weeks. Subsequent to these attacks and up to the time of his present illness he did not suffer from the stomach in any manner. He became sick two hours after a particularly heavy meal with violent epigastric pain that lasted the entire day. From that time on pain appeared regularly one and a half to two hours af-

ter each meal. The pain was not spasmodic in character; it was sharp and continuous, and gradually abated until it entirely disappeared within a few hours. It was most intense in the epigastrium, radiated upward to the sternum and to the right and left hypochondriac regions. His appetite continued poor, there was considerable belching, and although he suffered from nausea he never vomited. The only other symptom complained of was heartburn, which troubled him even on an empty stomach. Physical examination revealed a distended epigastrium, no pain or tenderness on pressure. To the right of the midepigastrium and about two centimetres below the costal margin, there was a tender area, not particularly painful on pressure. Two hours after an Ewald test breakfast two ounces of well digested chyme was aspirated, showing a total acidity of 58, and of free hydrochloric acid 32. No mucus or blood, and a moderate number of yeast cells. The urine was free from albumin, sugar, or bile. Examination of his faeces showed a small quantity of mucus, few muscle cells showing no cross striations, no starch; plant cells, and fat nodules. A careful search was made for blood, and the guaiac, aloin, and benzinid tests all proved negative. Notwithstanding the absence of blood in the stomach contents and faeces, I inclined to the diagnosis of duodenal ulcer, basing my opinion on the strict relationship of the pain to the digestive act. A strict diet, alkalies, and bismuth relieved him entirely of his pain for three weeks. Freedom from pain encouraged him to indulge in all kinds of food against my advice. After a meal consisting of corned beef and cabbage he took violently ill with pain in the ileocecal region, chills, elevation of temperature, and muscular rigidity over the entire right side of the abdomen. Careful examination revealed extreme tenderness over an area the size of a silver dollar, situated to the right of the midepigastrium and somewhat above the umbilicus. This area gave a flat percussion sound, merging in hepatic dullness. The temperature reached 102° F., pulse was rapid, extremities cold, and the general appearance that of a very sick person. A diagnosis of pericholecystitis, due to a calculus in the cystic duct was made, which proved correct on operation. While it was a simple matter to arrive at a correct conclusion during the acute attack, such was not the case during the prodromal stage. The continued appearance of pain two hours after a meal and its complete disappearance when the stomach was empty and the absence of pain on a light diet, all pointed to an ulceration either in the pylorus or duodenum. This view has been and is still being entertained by most physicians. If I had carried out my present method of examination, however, this mistake would not have occurred.

This case strengthens my contention that physical signs and our laboratory methods are of absolutely no significance in the diagnosis of gastric ulcer as distinguished from gallstone disease. The absence of excessive digestive secretion and of signs of stagnation should have acted as a warning against the diagnosis of ulcer. So far this method of examination has invariably proved the correctness of my assertions, and I hope to record in the near future another case, which will illustrate the very opposite condition where a pyloric ulcer was diagnosed and so proved on operation, notwithstanding attacks of colic which were typical clinically of hepatic calculous disease.

Dr. Reuben Cronson's Report

With typical clinical symptoms and objective finding the diagnosis of cholelithiasis can be made without much difficulty. In many cases, however, both the clinical symptoms and objective findings are most confusing. In fact, in many patients we must differentiate cholelithiasis from appendicitis, a diseased right kidney, diseased right annexa, or some stomach lesion. When a lesion of the right kidney, appendix, or right annexa has been excluded, and the differential diagnosis lies between cholelithiasis and ulcer of the stomach, it is evidently of great importance to have a definite method of examination

¹Differential Diagnosis between Gastric Ulcer and Cholelithiasis, read before the Eastern Medical Society of the City of New York, April 9, 1909.

for distinction between these two lesions. The absence of microscopic food findings in the fasting stomach and the excess of digestive secretion points to a cholelithiasis, and excludes a lesion of the stomach. The above method of examination in the differential diagnosis between cholelithiasis and gastric ulcer advocated by Dr. Weinstein will be a valuable aid in the diagnosis of cholelithiasis, provided its reliability becomes apparent in subsequent cases.

In the patient cited I found at operation a distended gallbladder reaching an inch below the umbilicus. The gallbladder was attached to the omentum and parietal peritonæum. A large quantity of bile stained fluid was aspirated from the gallbladder and its wall incised. The wall of the gallbladder was very much thickened and very friable. No concretion was found in the gallbladder. The cystic duct was occluded by a large stone, the top of which could be felt through the cavity of the gallbladder. The stone was forced into the gallbladder after a number of ineffectual attempts by means of a spoon inserted between the stone and the mucous membrane of the posterior wall of the cystic duct. Traction and pressure with the spoon against the stone was carried out in a direction forward and downward, while at the same time counterpressure was made against the anterior wall of the cystic duct. In one of the attempts a piece of the stone was chipped off. The stone was ovoid in shape, of cream color, with small excrescences on its surface. It was 10 grains in weight and somewhat more than one inch in length and seven-eighths inch in width. Drainage of the gallbladder instead of excision was decided on and carried out. The patient made an uneventful recovery.

133 WEST ONE HUNDRED AND TWENTY-SECOND STREET.

825 LEXINGTON AVENUE.

CELSUS ON DISEASES OF THE STOMACH.

BY CHARLES GREENE CUMSTON, M. D.,
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Celsus only rapidly enumerates the names of the various diseases of the stomach, and the remainder of the section that he devotes to diseases of this viscus simply contains therapeutic advice. This enumeration, however, is of extreme importance, because it gives us an idea of the classification employed by the physicians of the first century, that is to say of physicians who lived before Soranus, Aretæus and Galen. On the other hand, the knowledge that the Roman encyclopædist furnishes us on the treatment employed in his day in diseases of the stomach is very interesting and detailed.

He advises the progressive use of massage and the ingestion of an infusion of absinth, wilde thyme, and rue in the morning with the stomach empty. According to Celsus and many physicians of this time, astringents, such as gallnuts and slightly acid white wine, are of great service, particularly in chronic gastric catarrh in which eructations are troublesome.

In cases of acute inflammation with pain and tumefaction of the epigastric region, Celsus has found that rest combined with a careful diet, emollient poultices, and cupping, was the best treatment. If there is ulceration of the stomach one should use about the same treatment as in cases of ulcer of the throat. Hydrotherapy, useful in the commencement of the disease, is no longer efficacious when the wasting period has been reached. The diet should be extremely severe and dark meats, which easily

decompose and irritate the stomach, should be forbidden. When the patient has improved a fortifying diet should be ordered.

And lastly, Celsus advises the use of emetics and purgatives, which were greatly in vogue in his day. Later on, Galen drew attention to the possible abuse of these medicaments which were mostly all rejected by the methodists, excepting mild enemata. It may be added that in Celsus, the division of the diseases of the stomach into diseases of the cardia and pylorus (coeliac disease) is already clearly established, and the Roman author has written a distinct chapter for each of these affections.

I will now give a literal translation of that section of Celsus's work dealing with diseases of the stomach.

The stomach is situated below the œsophagus; this organ is the ordinary site of several chronic affections; sometimes an intense heat develops there, sometimes a swelling, at others inflammation, and in certain cases there are ulcerations; the biles may occasionally collect within it; but the disease to which it is the most exposed consists in a *relaxation*; there is no condition whose influence is more unfortunate on the organ itself or on the general constitution of the patient.

These diseases being distinct from each other require remedies suitable for each. When there is heat in the stomach, fomentations with vinegar should be occasionally applied to the epigastrium. It may also be covered with a mixture of oil and powdered rose leaves, likewise with poultices which are both repulsive and emollient. If there is no contraindication, cold water may be given as a drink. When there is swelling dry blisters may be applied, likewise hot and dry fomentations which, however, must not be resorted to too freely. The diet should also be carefully observed: it is of advantage to give an infusion of absinth, wilde thyme, and rue in the morning while the stomach is empty. Exercise should in the first place be taken with moderation; later on it may be indulged in more, and one should choose particularly an exercise which puts the upper parts in movement because, by this means the best results are obtained in all affections of the stomach.

After exercise come inunctions and frictions. The use of the bath should be prescribed, more infrequently, and sometimes enemata may be prescribed. The food should be taken hot, and the same may be said of drinks; water should be taken first, and then astringent wine may be given after the swelling has disappeared. A precept applicable to all diseases of the stomach is to continue, when once the patient is cured, the use of those means by which the cure has been effected. Because one should always fear the return of the disease, unless the diet which has brought back health still serves to maintain it.

In case of inflammation which is nearly always accompanied by tumefaction and pain, rest and diet should be advised from the first. The patient should wear a woollen binder upon which sulphur has been sprinkled, and an infusion of absinth should be given in the morning before the patient has eaten. If he complains of pain in the stomach fomentations with vinegar should be used and afterward a little food may be taken. Applications which are both repulsive and emollient should be applied, and they are then replaced by hot poultices made with flour, which will bring about the resolution of the inflammation. From time to time enemata are to be ordered, and, then exercise and a more substantial alimentation is to be recommended.

If the stomach is ulcerated one should follow quite closely the treatment indicated for ulcerations of the throat. One should exercise, employ frictions on the lower parts, and use glutinous and light foods, but never eat to the extent of one's appetite, and avoid all acid and acid things; if there is no fever a light wine may be taken, and if this should give rise to eructations it should be of a very light quality and neither too hot nor too cold. When the biles fill the stomach, it is necessary to have the patient vomit, either when the stomach is empty or after he has eaten. Exercise should be employed, such as riding horseback, navigation, and frictions, but nothing should be drank nor eaten which is not hot, and only abstain from those things which produce phlegm.

It is a more serious matter when the stomach is tormented by the bile or even the atrabile. It is then useful to give enemata and to prescribe preparations of absinth. Horseback riding and navigation will be found useful. In the above mentioned condition it is well to produce vomiting which follows nausea. Indigestion should be avoided, and light and appropriate food for the condition of the stomach should only be used, and astringent wines may be taken.

The disease of the stomach which is the most common and the most unfortunate is relaxation; by that I mean the impossibility of the stomach to retain food; from which follows that the body, no longer receiving nourishment, becomes undermined. In these cases baths are of no use. One should read aloud, exercise the upper parts of the body, use inunctions and frictions, cold effusions, also to swim in cold water, take douches at the same temperature which are directed over the region of the stomach, or better still to have them fall on the shoulders down to the region of the stomach. It is salutary to bathe at the medical springs whose waters have a low temperature. The food should also be cold, and it is better that it should be of a difficult digestion than to have a tendency to putrify. Many patients, however, for whom everything is indigestible, can digest beef, from which it may be concluded that they should not be allowed to eat poultry, game, and fish, unless the flesh is very hard. As a drink there is nothing more proper than cold wine or very hot pure wine. One may also drink an astringent wine to which resin has been added if necessary, and when this cannot be obtained a very mild wine may be taken, such as the wine of Thasos.

If food cannot be taken, water should be given, and an abundant emesis should be provoked and then afterward food can be resorted to, likewise the application of dry cups two fingers' breadth above the epigastrium, which should be allowed to remain for two or three hours. If at the same time pain and vomiting exist, it is proper to apply a sponge soaked in vinegar or a refrigerating poultice over the epigastrium, and to practise short but heavy friction on the legs and to heat these parts.

If pain increases dry cups should be applied six fingers' breadth below the epigastric region, and then bread dipped in cold water should be immediately given. If this bread is vomited, a light diet, suited to the stomach, should be taken, and if this is not any better tolerated, the patient should drink a glass of wine every hour until vomiting ceases. The juice of horse radish is also a good remedy, but there is one still better which is composed of the juices of the sweet and acid pomegranate, of each equal parts, to which one adds the juice of chicory and peppermint (the latter in a small dose) and diluting the whole in a quantity of cold water which should equal that of these various juices combined. In point of fact, this medicine is more efficacious than wine for toning up the stomach. Spontaneous vomiting should be stopped. If, on the other hand, there is nausea the food becomes acrid and is corrupted in the stomach, which may be judged of from the nature of the eructations; here it is indicated to cause vomiting and in order to produce a cure the foods of which I have already spoken should be immediately given. When no other accidents are to be feared the diet indicated above should be resorted to.

CÆLIAC DISEASE.

The disease on the contrary, which the Greeks call celiac, resides in the pylorus and usually is chronic. From the influence of this affection, the abdomen becomes hard and painful; there is constipation and even an impossibility to expel the gases, the limbs become cold, and the patient breathes with difficulty. The best thing to do in the beginning, is to cover the abdomen with hot poultices so as to calm the pain, and then after eating vomiting should be induced so that the belly will be in a condition of vacuity. On the following days dry cups are to be applied on the abdomen and thighs. Stools are procured by giving milk and cold salted wine or even green figs if they are in season; but it is by degrees and not at once that the patient should be allowed to drink and eat. Consequently, one should be content to take two or three glasses of liquids at intervals, and the same should be applied to food. It is also proper to give a glass of milk diluted with an equal quantity of water. Flatulent and acrid foods are the best, so that it is well to add crushed leek to the milk. After

a certain time the food already mentioned may be employed. Frictions should be made three or four times a day with oil and nitre. After eating it is well to have recourse to hot affusions, then to apply on all the limbs, excepting the head, sinapisms that should be left on until they have produced redness and erosion of the skin. This means should be particularly employed in strong and robust people. Afterward, one comes by degrees to astringent remedies. The meat given should be nourishing and not easily corrupted; for drinks one should take two or three glasses of rain water that has been previously boiled. If the disease is stubborn the best quality of asafoetida should be given, the dose being a piece the size of a pepper seed. Drink alternatively a little wine and water on the following day. Occasionally one may take a glass of wine after each repast. And lastly, one should prescribe enemata of purified rain water, particularly so if there is persistent pain in the lower abdomen.

871 BEACON STREET.

THE FOWLER POSITION IN THE TREATMENT OF PERITONITIS.

With a Description of the Gorham Bed and Report of Cases.

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The following ten cases constitute a brief report of the treatment of peritonitis as carried out at St. Peter's Hospital, at Albany, and the advantages gained by the use of the Gorham bed in obtaining the exaggerated Fowler position. All the patients treated had either acute septic peritonitis, local or diffuse, or pelvic inflammatory disease. In the former class of cases the peritoneal cavity was thoroughly sponged with dry gauze bits, and in none of the cases was saline irrigation used. All were drained by the use of either rubber tubes or cigarette drainage, and in some cases by combining both. In some of the patients the wound was left wide open, but in the majority proctolysis, as recommended by Murphy, was practised.

CASE I.—Acute appendicitis; diffuse peritonitis. L. A., thirty-two years of age; nativity, United States; admitted April 1, 1908, complaining of severe abdominal pain. Temperature, 99° F.; pulse, 94; respirations, 24. Leucocyte count, 18,000. Patient had a previous attack about a year ago. Present attack occurred March 31, 1908. Considerable pain was present just below the umbilicus. This pain continued until the following morning, when it became localized in the iliac fossa. Vomited at frequent intervals during the first twenty-four hours.

Operation (Elting).—Incision through right rectus. On opening the peritoneal cavity a considerable quantity of greenish yellow, watery pus was evacuated. The appendix was found, the distal end being well over the pelvic brim, with a perforation near the end. The appendix was removed in the usual way, the stump being inverted with a catgut purse string ligature. The pelvis and region of cæcum was sponged dry. Free drainage was instituted by double rubber tubes deep in the pelvis and several gauze wicks were packed about the tube. The upper and lower angle of the wound was closed slightly to allow free drainage, and the patient was placed at once in the exaggerated Fowler position, and given 1500 c.c. of saline infusion. Patient reacted well, and complained of sharp pains in the abdomen with nausea and vomiting for the first forty-eight hours. Pulse and temperature remained practically normal, and there was a slight degree of distension. Drainage was very profuse for several days, the wicks were gradually removed, and at the end of a week the large rubber tube was taken out and replaced by a smaller one. The patient was kept in the Fowler position for two weeks and made an uneventful recovery.

CASE II.—Acute perforative appendicitis; diffuse peritonitis.—E. J. C.; age, twenty; single, male; nativity, United States; entered hospital May 12, 1908. He complained of severe abdominal pain referred especially to the right iliac region. Temperature, 101° F.; pulse, 100; leucocyte count, 23,400. His first attack occurred four weeks before entering hospital, when he was confined to his bed one week. On the day of admission he had another severe pain in the region of the epigastrium with nausea and vomiting, and was removed to the hospital at once. The abdomen was rigid with all the signs of general peritonitis.

Operation (Elting).—Right rectus incision. On opening the peritoneal cavity a foul smelling, cloudy liquid escaped. The appendix was bound down with fresh adhesions, gangrenous, and perforated. There was no local abscess in the region of the appendix, but a large pelvic abscess was discovered with diffuse peritonitis. One double drainage tube of rubber was inserted in the pelvis, and four cigarette drains of iodochloroxyquinoline (vioform) were packed lightly in the region of the cæcum. Patient was placed in the Fowler position, and 1500 c.c. of saline infusion were given. Murphy treatment started. Patient reacted well. There was slight nausea and vomiting present a few hours. During the week there was free drainage from the wicks, and at the end of ten days the tube and all but two wicks were removed. The remaining wicks were removed in the next twenty-four hours, and the wound was then irrigated with a 1 in 5000 bichloride solution for a few days. Patient made an uneventful recovery.

CASE III.—Chronic pelvic inflammation; chronic appendicitis.—C. C.; female; age, thirty-seven; married; nativity, United States. Admitted July 24, 1908. Temperature, 99° F.; pulse, 93; respiration, 20. Patient was very weak and complained of severe pains in right inguinal region and back.

Past history.—Fifteen years ago patient had an operation for uterine fibroid. Had been married fifteen years, and never had any children.

Present history.—About two weeks ago patient had severe pains in the right inguinal region which confined her to her bed for three weeks. Since that time her abdomen had been very tender; and she was unable to attend to her household duties. There had been loss of appetite and constipation. Leucocyte count on day of admission was 17,500. Patient had a marked cystitis. Bimanual examination showed presence of pelvic inflammatory disease.

Operation (Elting).—Median incision; uterus and appendages (right ovary had been removed) densely adherent to pelvis and to loop of small intestine. The general peritoneal cavity was well walled off with gauze tampons. In attempting to free adhesions a large abscess ruptured on the right side, corresponding to position of the right ovary and tube which had previously been removed. A complete hysteroligopoochorectomy was performed and drainage instituted via posterior cervical vaginal puncture with a T drainage tube and three iodochloroxyquinoline gauze wicks. Patient was in marked condition of shock at the end of the operation, her pulse being 130, thready and barely perceptible. 1,500 c.c. of saline infusion was given in addition to strychnine nitrate, gr. 1/40, hypodermically, and the patient put at once in the Fowler position. Patient reacted slowly, and drainage was very profuse from the vagina for several days, when the tubes and wicks were removed, and at the end of ten days she was removed from the Gorham bed and made a rapid and uneventful recovery.

CASE IV.—Acute perforative appendicitis; free concretion in abdominal cavity.—J. B. D.; male; age, forty-four; nativity United States; entered the hospital, August 21, 1907. Temperature, 98° F.; pulse, 88; respiration, 20; leucocyte count, 22,000. Patient had complained of severe pain in lower abdomen for several weeks with marked constipation. During the past few days pain became localized in the right iliac region.

Operation (Elting).—Incision along outer border of right rectus; abdomen very rich in adipose tissue. Unable to locate cæcum in its normal position. Incision carried upward and in separating recent adhesions cæcum was found rather high up. In further separating adhesions, the appendix ruptured and a considerable quantity of pus escaped. This was carefully sponged out with dry gauze and in so doing several concretions were found free in the peritoneal cavity. The appendix was retrocæcal in position, on examination it

was very friable, and in attempting its removal the appendix dropped off. The wound was drained with several iodochloroxyquinoline wicks. The patient was at once put in the Fowler position and reacted well, there was some nausea and vomiting, slight rise in temperature and pulse for a few days. The wicks were removed gradually, and at the end of three weeks the wound had practically healed with but a small granulating surface remaining.

CASE V.—Acute gangrenous appendicitis; diffuse peritonitis. J. M.; male; age, twenty-four; nativity, United States. Patient was brought to the hospital in the ambulance June 24, 1909, and operated upon immediately. On admission temperature was 100° F.; pulse, 110; and respirations, 30; leucocyte count, 24,800.

Past history.—About eighteen months ago he had an attack of gallstone colic. Had another attack ten months ago. At no time was patient jaundiced. Pain was very severe, and he required morphine injection to control it.

Present history.—Illness started the day before admission to the hospital with a severe pain in the epigastrium. This pain suddenly ceased in a few hours, but returned later in the day with increased severity. He vomited the morning of the operation and pain became localized in the right iliac region. The whole abdomen became rigid and boardlike, and he was the picture of general peritonitis.

Operation (Elting).—Incision made parallel to Poupart's ligament and about 3 cm. internal to it. On opening the peritoneal cavity, about 40 c.c. of yellowish red pus escaped with a foul odor. The appendix was situated deep in the pelvis and was gangrenous throughout most of its extent. The distal portion of the appendix had sloughed away. In attempting to remove the remaining portion of the appendix, portions of it were torn away owing to the enormous disintegration of tissue. The proximal end was crushed and ligated with catgut, the stump invaginated, and a purse string suture of catgut inserted about the base. Cecum and mesentery brought together with catgut. A large amount of pus was sponged from the pelvis. One rubber drainage tube and five iodochloroxyquinoline protective wicks were used to drain the peritoneal cavity. Cover slips made and stained at the time of the operation showed the presence of streptococci and colon bacillus. Patient was put at once in the exaggerated Fowler position and was given 750 c.c. of saline infusion. He reacted rather slowly, and for the next twenty-four hours there was considerable distension with some nausea and vomiting. The distension slowly increased, and lavage was resorted to in an attempt to lessen the vomiting. The character of the infection precluded the possibility of his getting well, and the patient died from exhaustion and toxæmia at the end of the sixth day.

CASE VI.—Acute gangrenous appendicitis.—R. F. T.; age, forty-five; married; nativity, United States; brought to the hospital, August 20, 1908, in the ambulance. Twenty-four hours before entering the hospital he had been taken with a severe pain in the epigastrium, nausea, and vomiting. On admission his temperature was 100° F.; pulse, 120; respiration, 26; leucocyte count, 18,000. He complained of severe pain throughout the abdomen which on examination was found to be very rigid and boardlike, with an anxious expression, etc.

Operation (Griffin).—Preparation on the table. Right rectus incision. On opening peritoneal cavity a large amount of foul smelling pus escaped. The intestines were injected and adhering to each other. The appendix was gangrenous throughout and perforated at its tip. It was removed in the usual manner, and the stump was inverted with a purse string suture of catgut. A large rubber drainage tube was placed in the pelvis, and several cigarette drains were packed in the region of the cæcum. Patient reacted very well, pulse at the end of the operation being 106, respiration 34. He was put in the exaggerated Fowler position at once and the Murphy treatment started. The distension was very marked, and in a few hours he began to vomit material that had the appearance of feces. Repeated gastric lavage had no apparent effect upon the vomiting. The distension increased, heart action became weaker, and the patient died at the end of five days.

CASE VII.—Acute gangrenous appendicitis; diffuse peritonitis.—S. F.; age, twenty; single, female; nativity, United States. On August 20, 1909, patient was attacked in the middle of the night with an excruciating pain in the right lower abdomen with extreme tenderness throughout the abdomen. Had slight amount of nausea and vomiting. Was

treated for two days with the ice bag and was then allowed to get up, but could not walk on account of the pain. She was up and down for the next two weeks, and on September 2, 1908, had another attack when she was removed to the hospital in the ambulance. On admission her temperature was 103° F.; pulse, 118; respiration, 30; leucocyte count, 23,600.

Operation (Elting).—Preparation on the table. On account of the enormous distension present, the operator was forced to make a median incision. On opening the peritoneal cavity about one litre of greenish yellow pus escaped. The intestines were dark red in color, injected, and matted together. The appendix had apparently sloughed away. In the region of the caecum there was evidence of an attempt by Nature to wall off the abscess by the presence of connective tissue. The cavity was thoroughly sponged with gauze, and the posterior vaginal T drainage tube inserted. Several large gauze drains were used in draining the wound. Patient was in a very weakened condition following the operation, with all the symptoms of shock, her pulse being 162, and her respiration 42. She was put in the exaggerated Fowler position at once, and 1500 c.c. of saline infusion given. Murphy treatment started, and patient reacted slowly. The wound discharged a bloody serum mixed with pus for a long time, and patient slowly recovered. Several months after a tuberculous peritonitis developed, and patient died.

CASE VIII.—Acute gangrenous appendicitis, with perforation and abscess. M. G.; age, twenty-six; single, male; nativity, Italy. Admitted to hospital, February 5, 1908, complaining of a severe pain in his iliac region. On admission, temperature, 103° F.; pulse, 116; respiration, 32. Leucocyte count, 23,300. Patient gave no history of having had any previous attacks. Present attack came suddenly about thirty-six hours previous to being admitted to hospital.

Operation (Elting).—Right rectus incision. On opening the peritoneal cavity a large walled off abscess was disclosed. The intestines were carefully protected by the use of several gauze tampons. The abscess was opened and about a pint of foul smelling yellowish pus escaped. The appendix was located in the region of the pelvis. It was swollen, gangrenous, and perforated at its distal end. It was removed in the usual manner, catgut being used to cover the stump. Several gauze protective wicks were used to drain the cavity, and the wound was lightly closed. Patient put at once in the exaggerated Fowler position and given 1750 c.c. of saline infusion. He reacted well, had no nausea or vomiting, nor was there any distention. There was profuse drainage from the wound for several days, the wicks were gradually withdrawn, and at the end of the tenth day the wound was practically healed with but a small area of granulating tissue. A persistent cough developed on the second day which lasted a week. Sputum was examined for tuberculosis bacilli with negative results. Cough stopped in a few days, and patient made an uneventful recovery.

CASE IX.—Pelvic peritonitis; chronic appendicitis. F. D.; age, twenty-two; female, single; nativity, United States. Was admitted to the hospital March 25, 1908, complaining of severe abdominal pain. One week before entering the hospital patient had been taken sick with severe pain in the right lower abdomen. Her temperature at that time was 103° F., pulse 120. She was in bed for several days with an ice bag on her abdomen. There was considerable nausea and vomiting. On the day of admission to the hospital her abdomen was very tender, she was put to bed, an ice bag applied, and she was given two 1 in 5000 bichloride of mercury douches daily. Her temperature in the meantime had subsided and her general condition being improved it was decided to operate.

Operation (Griffin).—Median incision about 7 cm. in length between the umbilicus and symphysis pubis was made. On opening the abdominal cavity the uterus and appendages were buried in a mass of adhesions. The intestines were well walled off with gauze tampons, and an attempt was made to separate the left side which was closely adherent to the rectum. In so doing, the pus sac ruptured and a considerable quantity escaped. The right side was nearly separated without rupturing the sac, and a panhysterectomy was performed. The appendix was adherent to the right tube and was removed in the usual manner. The pelvic cavity was drained *via* the pos-

terior vaginal route, a T tube and several iodochloroxyquinoline wicks being used. The patient was put at once in the exaggerated Fowler position, and 1500 c.c. of saline infusion given. Drainage from vagina was very profuse for several days, and at the end of the tenth day the gauze and tube were removed, and the patient made an uneventful recovery.

CASE X.—Chronic pelvic peritonitis; chronic appendicitis. E. W.; female; age, twenty-two; married; nativity, United States. Entered the hospital, April 15, 1908, suffering with acute pelvic peritonitis.

Previous history.—In September, 1907, patient had a severe attack of pain in the lower abdomen accompanied with nausea and vomiting. This attack confined her to bed for one week, since that time she had remained well until this present attack, which started five days before entering the hospital. On admission to the hospital her temperature was 101° F.; pulse, 116; respiration, 20. Her leucocyte count was 16,000. She had severe pain and tenderness over region of both ovaries; and a profuse leucorrhoea. She was put to bed, ice bags applied, and 1 in 5000 bichloride of mercury douches were given. On the sixth day her temperature having subsided and her condition being improved, it was deemed advisable to operate.

Operation (Griffin).—Median incision about 6 cm. in length between the umbilicus and symphysis pubis. On opening the peritoneal cavity the uterus was found bound down to the rectum with numerous adhesions. A large pyosalpinx was present on the left side. The adhesions were slowly separated from the intestines, the latter being carefully protected by gauze tampons. A panhysterectomy was performed. Drainage was obtained *via* the posterior vaginal route, a rubber T tube and several iodochloroxyquinoline tampons being used. Patient was put at once in the exaggerated Fowler position, and given 1500 c.c. of saline infusion. There was profuse drainage from the vagina for several days. At the end of ten days the tube and gauze were removed, and she made an uneventful recovery.

In the above ten cases an attempt has been made to report the extreme type of cases taken at random from the clinic of Dr. A. W. Elting at St. Peter's Hospital, Albany, N. Y. Cases I to V, VII, and VIII were operated in by Dr. Elting, and the others by the writer. In two of the cases the presence of the streptococcal bacillus was demonstrated, and both patients succumbed to the infection. The drainage was excellent in both cases, and had we been dealing with a less purulent infection the outcome would probably have been different.

The cases of pelvic peritonitis that were drained by the vaginal route were greatly aided by the Fowler position, and the drainage was at all times profuse.

To obtain the full benefits from the Fowler position one should not only be able to place a patient on an incline, sufficiently steep to promote prompt and free drainage from the lower quadrant of the abdomen, but be able to place the patient in this position without great effort and also to prevent sliding to the foot of the bed.

With ordinary hospital beds this is practically impossible, but with the Gorham bed it is simply a matter of buckling the supporting seat well up against the nates and the foot rest to the feet, and then giving a few turns of the wheel until the desired incline is obtained.

To give a clear idea of the bed, I have obtained a cut from the manufacturer, from which it will be seen that the bed bottom is mounted on an A shaped frame securely held by a simple gearing, and that by the turn of a wheel the bed may be tipped to any desired incline. There is no locking or unlocking. The bed is always secure and can only be moved by

a screw motion which is obtained by turning the wheel.

An especially designed bed pan is furnished with the bed which allows evacuations and the use of douches with the patient in the semisitting position. With the knees bent and the seat rest lifted up against the under side of the thighs, this bed pan may be shoved against the buttocks, furnishing a comfortable position for evacuation without placing a bed pan under the patient.

In our estimation it would be extremely difficult.



The Gorham Bed.

if not impossible, to obtain the full benefits of the Fowler position without the use of the Gorham bed or one similarly constructed.

We believe that the Fowler position has been a most important factor in producing the favorable results in the cases here reported, and knowing the difficulties usually encountered in keeping a patient on an incline sufficiently steep to insure prompt and free drainage, and having demonstrated to our entire satisfaction how perfectly the Gorham bed enables one to overcome these difficulties, we have called attention to it.

176 WASHINGTON AVENUE.

THE INFLUENCE OF HYDROGEN PEROXIDE ON HYDROCHLORIC ACID SECRETION.*

By EDWARD H. GOODMAN, M. D.,
Philadelphia, Pa.,

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Fellow of the College of Physicians.

(From the Private Laboratory of Dr. John H. Musser.)

The use of hydrogen peroxide is generally believed to be limited to external conditions. Hare (*Practical Therapeutics*, eleventh edition, p. 274) disclaiming any effect from its internal administration. Petri (*Archiv für Verdauungs Krankheiten*, xiv, p. 479, 1908) has lately shown, however, that hydrogen peroxide when taken internally exerts a marked influence on the hydrochloric acid output.

He found by studies on himself that even a one per cent. solution of hydrogen peroxide could be taken without any ill effects manifesting themselves, apart from a burning taste in the mouth accompanied by the formation of oxygen bubbles and a feeling of constriction in the oesophagus. No gastric symptoms were observed. Solutions 0.25 to 0.75 per cent. in strength were easily taken, and patients to whom these were given complained of no unpleasant complications. A 0.5 per cent. solution was the one selected by Petri for his studies which were as follows:

On one day the patient was given 300 c.c. of tea without milk or sugar and a roll without butter, the test meal being removed an hour after ingestion. On the following day a similar meal was given with the substitution of 300 c.c. of a 0.5 per cent. hydrogen peroxide solution for the tea. This peroxide test meal was extracted in an hour and in both gastric contents the amount of total acidity and of free hydrochloric acid was determined. In every one of the eleven cases studied, in which free hydrochloric acid was present, Petri found a decided diminution of the total acidity as well as of the free acid. The decrease in the amount of the latter was especially striking, in several cases a complete disappearance being observed.

I have repeated the experiments of Petri in fourteen patients, studied in Dr. Musser's ward in the Presbyterian Hospital, and in one case seen in private practice. Fifty cubic centimetres of a three per cent. solution of peroxide were made up to 300 c.c. with water, making approximately a 0.5 per cent. solution. An ordinary Ewald test meal was given and examined in the usual manner and was later followed by the peroxide test meal. No difficulty was experienced in getting the patients to take the latter, and no unpleasant sensations were complained of with the exception of one patient who said "the water had a fishy taste."

It will be seen from a study of this table that there is a striking diminution in the quantity of free hydrochloric acid when a weak solution of hydrogen peroxide is substituted for tea in a test meal. Occasionally only a moderate decrease was observed (Cases I, II, and XIV), but in the majority of cases the decrease was astonishing, in some instances a total absence of free acid being noted (Cases II, V, VII, X, XII, and XV). Not one of these six patients in whom the free acid was lacking, complained of any unpleasant sensations however. Only one patient (No. II), a neurasthenic and sullen youth, offered any opposition to the peroxide on account of the taste.

Therapeutic application of the facts learned from these studies was made in a few instances. For use in the ward, a 0.5 per cent. hydrogen peroxide solution was made up in bulk and under the name of "special water" was given to certain patients.

Case No. II was the first patient to receive this water. He was admitted to the ward suffering from headaches and gastric fermentation, and while under observation there developed an array of diurnally varying pains and symptoms. His physician, from a neighboring town, stated unsolicited that he had often told the patient his trouble was mainly mental and urged him to resume work,

*Read at a meeting of the Medical Society of the State of Pennsylvania, Section in Medicine, held in Philadelphia, September 28 to October 1, 1909.

which the patient had not attempted for a long while. His subjective symptoms of "pain" did not receive much consideration while under our observation, nor did his statement that "the water always gave him headaches" deter us from studying its action. A full glass of the water was given one half hour after each meal. Subjectively, no or but little improvement was seen, but after a little over three weeks treatment, there was a marked change in the gastric chemistry, the free acid having fallen from 55 to 22 with no change in the total acidity. Full ward rations were allowed, so the improve-

ment was remarkable. His gastric analysis after an ordinary Ewald meal showed a total of 102 and a free acidity of 80. He was given a drachm of peroxide in a glass of water, thirty minutes after eating, and on his second visit after a week of such treatment, he said he felt practically well. His sense of oppression in the epigastrium, belching, and distention had improved so that they were not complained of. He was told to continue the treatment, and at the termination of a week's time he was instructed to take another test meal as it was desirable to see if any change in the gastric chemistry had taken place

No.	Case.	Total acidity.	Free hydro-chloric acid.	Combined acid.	Salts.	Date.	Character of meal.
I	W. J.	61	35	4	22	December 15, 1908	300 c.c. tea and 2 pieces toast.
		52	24	18	13	December 18, 1908	300 c.c. H_2O_2 (0.5%) and 2 pieces toast.
		32	..	24	8	December 24, 1908	300 c.c. H_2O_2 (0.5%) and a piece of toast.
II	R. M. K.	72	55	6	11	December 26, 1908	300 c.c. tea and piece of toast.
		18	..	..	..	December 27, 1908	300 c.c. H_2O_2 (0.5%) and piece of toast
		72	22	24	20	January 10, 1909	300 c.c. tea and piece of toast. (Treatment with H_2O_2 since last date.)
III	A. D.	56	50	8	12	December 28, 1908	300 c.c. tea and piece of toast.
		66	18	30	8	December 29, 1908	300 c.c. H_2O_2 (0.5%) and piece of toast.
IV	J. H.	108	72	20	16	December 27, 1908	300 c.c. tea and piece of toast.
		60	30	16	14	December 28, 1908	300 c.c. H_2O_2 (0.5%) and piece of toast.
V	M.	94	68	22	4	December 30, 1908	300 c.c. tea and piece of toast.
		20	..	..	..	December 31, 1908	300 c.c. H_2O_2 (0.5%) and piece of toast.
VI	R.	84	60	18	0	December 31, 1908	300 c.c. tea and piece of toast.
		54	34	12	8	January 2, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
VII	J. C. C.	86	46	36	4	January 8, 1909	300 c.c. tea and piece of toast.
		24	..	14	10	January 9, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
		66	36	28	2	January 10, 1909	300 c.c. tea and piece of toast.
VIII	W. S. F.	94	30	42	16	January 23, 1909	300 c.c. tea and piece of toast.
		55	5	20	30	January 20, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
IX	O. Y.	56	32	20	4	February 1, 1909	300 c.c. tea and piece of toast.
		50	18	32	0	February 2, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
X	M. H.	60	22	8	30	February 3, 1909	300 c.c. tea and piece of toast.
		34	..	18	10	February 4, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
XI	B. F.	42	24	6	12	February 4, 1909	300 c.c. tea and piece of toast.
		40	18	14	8	February 7, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
XII	H. S.	62	39	9	14	February 3, 1909	300 c.c. tea and piece of toast.
		34	..	18	16	February 8, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast
XIII	J. K.	96	70	20	6	February 15, 1909	300 c.c. tea and piece of toast.
		14	..	..	..	February 17, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
XIV	B.	86	22	64	..	February 22, 1909	300 c.c. tea and piece of toast.
		70	24	24	22	February 25, 1909	300 c.c. H_2O_2 (0.25%) and piece of toast.
		60	20	38	2	March 1, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.
XV	J. W.	70	40	30	..	March 4, 1909	300 c.c. tea and piece of toast.
		40	..	20	20	March 8, 1909	300 c.c. H_2O_2 (0.5%) and piece of toast.

ment cannot be accredited to the dietary. The patient of case VII showed marked improvement after the use of the water. He had the usual symptoms of hyperchlorhydria and suffered a great deal at night with burning sensation in the epigastrium. This was so intense that he was usually wakened out of a sound sleep by the pain. Hydrogen peroxide quickly relieved the distress, and although he stated that the "special water" made him sick for the time being, he became accustomed to it and drank no other water during his stay in the hospital. He was discharged cured, no other medicine being used except peroxide.

These were the only two patients studied in the ward for the therapeutic effect of hydrogen peroxide. In my dispensaries in the Presbyterian and University Hospitals use has been made of a weak solution of peroxide, using from 5i to 5ii of peroxide (three per cent.) in a tumblerful of water. In a man seen at the Presbyterian Hospital Dispensary the subjective improvement after taking this

after such a short course of treatment. As experienced not infrequently with dispensary patients he failed to present himself again and was subsequently lost track of. Enough improvement had resulted, however, in the short time his case was followed, that one would be led to expect a still greater benefit had the treatment been continued.

In another patient suffering from the usual symptoms of hyperchlorhydria, seen in the University Hospital Dispensary, nothing seemed to relieve him, all the usual antacids having been without permanent effect. He was using three grains of resorcin after each meal with no improvement, when he first came under my care (June 3, 1909). Belching and distress after meals were the chief symptoms for which a creosote mixture was prescribed. After two weeks (June 17, 1909) he reported that the medicine had not agreed with him, and that the belching still continued. On this day he was given a teaspoonful of hydrogen peroxide in a glass of water after meals. Shortly after this he began tak-

ing buttermilk, and whether from the combination of the two or not, his condition began to improve rapidly, until at last note (September 21, 1909) he reported that he felt first rate and was scarcely suffering at all with belching or distress in the stomach.

These few cases in which the therapeutic value of hydrogen peroxide has been tried, have shown such improvement that the use of varying strength of the solution is urged in cases of hyperchlorhydria.

A half per cent. solution would seem from the table to act in a too pronounced manner, as witness the absence of free acid in Cases II, V, VII, X, XII, and XV after a peroxide meal. To obtain the same strength solution over two tablespoonsful would have to be used, which is prodigal. Good results have been obtained with a teaspoonful in a glass of water after meals, but two teaspoonful may be taken with no unpleasant consequences.

In conclusion, I would state that I regard hydrogen peroxide as an additional remedy in an already long list of measures advocated in the treatment of hyperchlorhydria. Its value is, however, not so great that all other means of treatment may be relegated to oblivion, but in conjunction with these it will no doubt be found of benefit.

248 SOUTH TWENTY-FIRST STREET.

A FOREIGN BODY IN THE URETHRA.

By J. HENRY DOWD, M.D.,
Buffalo, N. Y.

The accompanying report seems worthy of record when the patient's age is considered and the undoubted object of the procedure is taken into consideration. True is the saying, "there is no fool like an old one."

CASE.—J. G. was referred to me by Dr. Candee and gave the following history: "Frequently it has been impossible for me to pass urine on account of a stoppage two inches from the end (meatus). When this has occurred I have had to pass something to open the canal, and to-day (two hours before I saw him) I passed a lady's hat pin, which has escaped from me and is still in the canal."

Examination revealed a marked hematoma, the size of a horse chestnut, on the under surface of the penis about two and a half inches from the frenum. The point was felt just under the skin, which together with the subcutaneous hemorrhage showed the corpus spongiosum had been punctured. Considering that the urethra had been punctured, external urethrotomy was advised, but the patient would not agree to any operation. (It was evident that he did not wish to reveal his condition any more than was necessary.) An endoscopic tube was passed just beyond the point, and holding this firmly, the pin was grasped and drawn downward, being dislodged from the mucous membrane, and made to enter the lumen of the tube. The head was located deep in the perineal region, the pin was forced upward until the point appeared, when both pin and tube were withdrawn. The condition was made clear to the man, that as the membrane had been punctured and the pin being rusty, there was great danger that infection would follow. Advice being of no avail, a urinary antiseptic was prescribed as the only hope of preventing trouble; no bad results followed.

Careful examination revealed practically no hypertrophy of the prostate; there was no evidence of stricture or history of gonorrhea; consequently but one conclusion could be arrived at: The patient, although fifty-nine years of age and married, was masturbating, and used the pin as an excitant.

40 NORTH PEARL STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCI.—What is your experience in the therapeutic use of thyrooid feeding? (Closed October 15, 1909.)

XCII.—What are your views on the open air treatment of pneumonia? (Answers due not later than November 15, 1909.)

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Answers due not later than December 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question XC has been awarded to Dr. M. P. Ferstler, of Brooklyn, whose article appeared on page 861.

PRIZE QUESTION XC.

THE TREATMENT OF TYPHOID FEVER.

(Continued from page 863.)

Dr. Samuel Robbinovitz, of Brooklyn, remarks:

The successful treatment of typhoid fever may best be considered under the following two headings:

I. *Prophylaxis.* Under this mode of treatment certain measures are resorted to whereby the disease is prevented, and to carry this out thoroughly and in order to accomplish satisfactory results, careful disinfection is essential. The latter is also divided into (a) disinfection of the excreta, stools, urine, sputum, and vomitus; (b) of the bed and its coverings; (c) of the patient and the sick room. Of the three mentioned there is a general tendency in private practice and even in hospital wards to neglect the first, which, in my estimation, is as significant as the other two objects for disinfection.

(a) Disinfection of the excreta, stools, urine, sputum, and vomitus may be carried out in the following manner: The excreta should be received in some vessel or receptacle for such a purpose, which can be subsequently thoroughly disinfected inside and outside with a disinfecting solution such as chlorinated lime, which I deem absolutely simple and satisfactory. A five per cent. solution of carbolic acid may also be made use of. The simplest mode of procedure is to put one pint of the solution of chlorinated lime into the bed pan prior to the discharges being received therein, and between one and two pints after. Then the whole is thoroughly shaken up, and all solid masses are thoroughly broken up. The vessel is then permitted to stand for about three hours after which time it is emptied into the watercloset. For the disinfection of the

bladder hexamethylamine (urotropin), grain five, t. i. d., may be administered to the patient by mouth.

(b) The bed and body linen should be changed daily and as frequently as it is soiled. It is necessary that the mattress is protected by a rubber cover, and this, in connection with the soiled linen and blankets received in a sheet that has been previously dipped in a five per cent. solution of carbolic acid. All bedclothes, except the rubber sheet, should be boiled for at least half an hour. It is a good policy when the patient leaves the room to have the mattresses fumigated and aired daily for at least one week, and the rubber covers and bedsteads washed with a solution of bichloride of mercury, 1 in 1,000.

(c) The patient should after every stool be cleansed with a cloth compress or absorbent cotton dipped into a corrosive sublimate solution (1 in 2,000) or a 1 in 40 solution of carbolic acid. The bed pan, etc., should be treated in a like manner, and the cloths used should be burned immediately. If there is a spare room adjacent to the patient's room it is wise to let the patient use the next room, and during such intervals the previous room can be thoroughly ventilated and disinfected as much as practicable. All milk and water used by the patient should be boiled for about half an hour previous to their being used either by the patient or any other of the household members. As typhoid fever has been found to some extent contagious it is best to isolate the patient, and permit no one to enter the sickroom except the physician and the nurse in attendance of the case.

II. *Treatment of the attack.* As much stress as I put on the matter of prophylaxis, considering the great importance for us to prevent this dreadful and mortal disease from becoming epidemic, it is only naught in comparison with the details to be properly observed and carried out in the extensive treatment of an actual attack of typhoid fever which has already taken its course. Extensive essays, covering perhaps dozens of pages could be written on the topic of the treatment of this condition in its minutest details. Nevertheless, I shall briefly consider the most essential and indispensable points and details which are necessary in summing up the treatment of a typhoid case:

1. As to the general conduct of the case, it is absolutely necessary to put the patient in a room with southern exposure, and one which can be properly ventilated whenever necessary. The bed should be put in the middle of the room, both for the sake of convenience for the doctor and nurse and to permit the patient to have a proper supply of air. All draughts should be avoided in the room. The nurse should be thoroughly instructed as to the proper care, the disinfection of the patient, the bed, bed clothes, and all discharges as explained under the heading of prophylaxis. The patient should have complete rest in bed, and the bed pan should be used for natural requirements. The most dependent portions of the body should be bathed at frequent intervals with a solution of alum and salt in dilute alcohol to prevent bed sores. The mouth should be washed, and also the tongue, with boric acid solution three per cent., to prevent thrush, aphthous ulcer, parotiditis, or lobular pneumonia, which, if this is

neglected, may complicate the disease and prove serious. The mouth and tongue should be moistened with equal parts of glycerin and water, which will also prevent the lips from becoming parched.

2. The diet is the next important point for consideration. It should be largely liquid, and is best to consist of milk diluted with water or lime water. The daily quantity should be not less than three pints. The milk may be peptonized if curds begin to appear in the stools. Whey, sour milk, or buttermilk may be substituted if the patient cannot use sweet milk. If these are objected to, beef juices, broths, or albumin water and white of egg can be used. If vomiting persists the patient should receive at proper periods of time nutrient enemata by the rectum.

As a drink pure, cold water is exquisitely adapted for fever patients, and they should have a regular supply of it. Coffee, tea, lemonade, in small quantities, sweetened with glycerin or saccharine, are permissible. The ingestion of large quantities of fresh water will favor proper diuresis.

As to stimulants, alcohol, whiskey, brandy, or wine may be given by mouth several times a day in tablespoonful doses, to combat the nervous symptoms and support the weakened heart, in spite of the presence of high temperature.

As to antipyresis, it is very advantageous to resort to hydrotherapy. The Brand method is excellent and consists of the immersion of the body in a tub of water, 70° F., for fifteen or twenty minutes every third hour when the temperature rises above 102.5° F. In a very simple manner the fever may be controlled by sponging, wet pack, and by the full bath. For internal administration the coal tar products (acetphenetidine, acetanilide, and antipyrine) may be resorted to, but with caution, lest they may still more weaken the heart.

5. *Intestinal antiseptics* are generally indicated because of the typanites, or in cases with excessive meteorism. Of all such drugs *salol* stands at the head, and in my experience 2 or 3 grains, every three or four hours in capsule form, is the best mode of administration. Quinine, in 1 or 2 grain doses, combined with this may also serve as a good tonic and assist in the action of the former drug. Carbolic acid and iodine in drop doses and paralactyl phenetidine may also be of some avail. When the tongue is dry and brown, the abdomen distended, and the general prostration marked, oil of turpentine (white form), administered in capsules from 3 to 5 grains, every three hours, in connection with alcoholics is very successful. After all this the antityphoid serum, 0.5 c.c., injected deep into the gluteal region may be of great service in some cases.

6. *Treatment of individual symptoms and complications.* Abdominal pain, typanites, and tenderness are best treated with fomentations and oil of turpentine stupes, while excessive meteorism may be relieved by the internal administration of oil of turpentine and by the use of the rectal tube or injections of the milk of asafetida, 5 to 6 ounces. *Diarrrhea*, when it exceeds four or five stools daily, will require the withholding of all food, except milk, and the administration of opium, bismuth, codeine, naph

thaline, etc. The following prescriptions I found very useful:

- R Beta naphthol, 3i;
 Bismuth subgallate, 5ii.
 M. ft. caps. No. xxiv.
 Sig.: One capsule every two or three hours.
 R Plumbi acetatis, gr. xxiv;
 Extracti opii, gr. iss-ij.
 M. ft. pil. No. xii.
 Sig.: One pill every three or four hours, as required.

The last formula may be prescribed in the form of a suppository, both ingredients being doubled in quantity.

Constipation is best relieved every second day by means of soap-sud enemata, particularly till the middle of the second week. Fractional doses of calomel may be used in the early stage of the disease. In the third week if the constipation persists it may be cut short by the use of small doses of saline laxatives frequently repeated. When hæmorrhage occurs, the foot of the bed should be raised, an ice bag or iced cloth should be immediately applied to the abdomen, morphine, gr. $\frac{1}{4}$, combined with atropine, gr. $\frac{1}{125}$, given hypodermically, and opium, gr. i, must be administered by the mouth every three hours. Peritonitis usually terminates fatally before anything can be done in the line of treatment, but an immediate laparotomy is the only hope for recovery. If appendicitis intervenes, immediate removal of the appendix is the rule. If heart failure supervenes alcohol, ammonia, strychnine, digitalis, etc., in definite doses, should be made use of. Nervous symptoms are greatly lessened by hydrotherapy, but nerve sedatives may be necessary. Retention of urine should receive prompt attention. Catheterization must not be resorted to before other means, such as hot fomentations over the bladder region, drugs, as diuretics, etc. Bed sores and sore mouth should be treated as stated before.

Dr. J. A. Hofheimer, of New York, writes:

Typhoid fever is so protean in its manifestations that treatment is necessarily modified according to the indications presenting.

There is no specific for typhoid fever. The patient should be placed in a room that has plenty of ventilation and very little furniture. It should be as far removed from the kitchen and dining room as possible.

The early symptoms of nausea, anorexia, headache, possibly diarrhoea, slight fever of an irregular type, and malaise, are best combated by rest in bed, low diet, and clearing out of the digestive tract. An initial dose of calomel ranging from gr. ii to gr. v followed in six hours by a saline laxative will prove effective in emptying the digestive canal.

If vomiting or nausea become constant sinapisms, or in some cases ice bags, prove effective in relieving these distressing symptoms. It has been my custom to begin at once with intestinal antiseptics and to continue their use for some weeks after subsidence of all fever. I have used two combinations with apparent success. The first I prefer:

- R Salol,
 Guaiacol, 3â gr. iii.
 M. S. To be given four times daily.

To this thymol or menthol is occasionally added, the latter if much flatulence is present. The other

intestinal antiseptic I have used in cases where the patient will not take a capsule or powder, and is an old formula:

- R Tincture of iodine, gtt. ij;
 Phenol, gtt. j.
 M. In a wineglassful of water every three hours.

Fever needs no attention if the temperature is below 101° F., outside of a cooling sponge bath every four or five hours consisting of twenty-five per cent. alcohol in water. If the temperature should rise to 102° F. this bath should be given every two hours. If the temperature is 103° F. or over a folded sheet, damp with iced water, is placed upon the patient, extending from the axilla to the knees. This is kept wet by frequently pouring the cold water upon it. At this time the temperature of the patient should be taken (per rectum) every half hour. When the temperature drops to 102° F. the packs can be removed and sponging resumed. In one case, last August (1908), with a continuously high temperature of 104.5 to 105° F. for nearly five days I had this iced pack applied and an electric fan going alongside of the bed, so as to cause rapid evaporation. This case was also complicated with hæmorrhages from the intestines and meningitis, but the patient fully recovered.

Head symptoms are combated as they arise, the headache and restlessness are best met by the use of bromides and hyoscyamus; delirium, by bromides, chloral, (if heart is strong), and ice cap. Opiates are to be used cautiously so as not to mask important symptoms; and owing to susceptibility of some cases cause greater excitation. However, it is sometimes wiser to drug the patient into a stupor than to let him give way to the severe active delirium of the second and third stages of this disease when absolute rest is a desideratum in order to avoid hæmorrhage or perforation.

Intestinal hæmorrhage is best met by some preparation of ergot. Lead acetate may also be used in 1 to 3 grain doses, frequently repeated.

Pulmonary symptoms are frequent, especially a slight bronchitis. This requires no treatment and generally disappears. Bronchopneumonia and typhoid pneumonia may occur and require the usual care that these diseases receive when alone.

Tympanites is relieved by addition of menthol as before mentioned, and also by the use of the oil of turpentine. I use this drug in 10 drop doses in sweetened warm water, once or twice daily, and also as a high enema 3i to hot water Oiv. If flatus passes readily a soft rectal tube may be left *in situ* for an hour or so and this may suffice. This latter should not be done if the patient is very restless.

Cardiac and nephritic symptoms may arise. A weak, irregular pulse calls for the cautious yet forceful use of strychnine or sparteine or digitalis. I frequently combine all of these in a capsule giving

- R Strychnine, gr. 1/40;
 Digitalin, gr. 1/40;
 Sparteine, gr. 1/10.
 M.

varying the intervals according to the results obtained. Albuminuria is almost constant but subsides generally as fever lessens. It is, however, wise to aid in the elimination by the kidneys of the effete materials, and therefore the patient should be given freely of liquids, good boiled or sterile water

having first call. Should our patient not partake freely enough of water then high enemata of normal salt solutions, a quart at a time, providing there is no great bowel distention, will prove beneficial.

Diarrhœa is to be combated with bismuth salts with or without opiates according to symptoms. If the bowels only act two or three times daily no remedy is required. For constipation an occasional fractional dose of calomel or the use of an enema of glycerin and water will generally suffice.

Diet.—At the outset the patient's nurse and family should be cautioned against overstepping the doctor's orders in the slightest iota. While many patients with typhoid may recover without any medication, I doubt whether a patient recovered whose diet was not carefully watched. Relapses, so called, are all too frequent from allowing the patient to return to full dietary before the intestinal ulceration is thoroughly healed. During the early stage the patient has little appetite; in the secondary stage he pays but slight attention to his food. It is during convalescence that the great longing for food occurs. The starved tissues clamor for nutriment, and it is at this time that more skill and decision is called for. From the beginning until all fever has disappeared the food must be bland, easily digested, flavored so as to meet the demands of the patient's palate as nearly as is compatible with safety. The food should consist of milk in its varying forms—sterilized, peptonized, junket, kumyss, zoolak, kefir, or buttermilk; custards, malted milk, albumenized milk, egg and milk, with or without stimulant of flavoring; cocoa, weak coffee with cream; broths of all kinds, strained jelly. After danger of hæmorrhage is past cereals, broken bread crumbs, mashed potato, and minced meats, especially of fowl, can be added; also soft boiled or poached eggs, sweetbreads. And gradually the patient can advance to full diet.

Dr. Joseph Baum, of Far Rockaway, N. Y., says:

The diagnosis having been made, have the patient put to bed in a room with the best possible air and ventilation; then have a heart to heart talk with the family of the patient: Explain to them what a treacherous disease typhoid fever is, in simple language explain the intestinal lesions and the ever present anxiety as to the onset of one or several complications. Insist on getting a competent nurse or nurses; dilate particularly on the absolute necessity of the patient remaining in bed at least three weeks. As to prognosis be very guarded and refuse to characterize any case as "mild in the early days of the fever, always having an eye to possible future complications. It will save comment and unfavorable criticism later in the disease if you explain that you are in the habit of calling to see your typhoid cases as often as you care to; that the family are not to judge the severity of the disease by the amount of medicine prescribed; but explain to them that eternal vigilance is the watchword if complications are to be avoided, or caught at their onset. Let them know that fresh air in the bedroom, cool water externally and internally, and expectant symptomatic medicinal treatment, are the lines along which the intelligent practitioner treats his typhoid patients to-day.

It may be stated almost as an axiom that a typhoid properly treated and faithfully and diligently watched in its first weeks, will go on to complete recovery without any serious complication.

A preliminary purgation with calomel cleanses the intestinal tract and puts the digestive organs in good trim for the steady fluid diet which is to follow. Temperature should be taken every three hours, and always by the rectum; if the temperature is over 102.5° F. give a sponge bath (alcohol and water), going over the body piecemeal, and do not dry the patient, but cover him with a bath towel or blanket. In cases where the fever does not respond to the sponge bath, the tub bath as administered by the Brand method must be given: Water at 85° F. is used to start with, and gradually enough cold water or ice is added to reduce the water to 70° or 65° F.; a hot drink or a half ounce of whiskey preliminary to the Brand bath is often of service in warding off the severe chill which usually ensues after the bath. Constant friction (massage) of the body and cold affusions to the head must be continued while the patient is in the tub. Most patients get along without the Brand bath, for a properly given sponge bath, by a competent nurse, will reduce the temperature without the inevitable shock to the patient which the Brand bath gives, likewise obviate the numberless details, attendants, etc., which the tub bath, properly given entails.

The dietetic treatment can be summed up as follows: The main reliance in typhoid is in milk given up to two quarts a day if possible. The broths of chicken and of beef, if well made are acceptable and beneficial. Egg nog (milk and egg with no whiskey), and a very soft boiled egg once a day, completes the diet list during the period of fever. Water can be and should be given *ad libitum*. Remember sick people do not ask for nourishment; it must be given to them at least every three hours.

The medical treatment should be purely symptomatic. Our chief concern being to control the diarrhœa or other intestinal disorders, the pyrexia, and to control complications. Intestinal antiseptics by naphthalin (5ss—3i a day) or thymol (gr. v, t. i. d., in pill form) will regulate the diarrhœa. The pyrexia is well handled by the external use of cold water. Antipyretics may reduce temperature but they, at the same time, produce a depressing effect on the system. The only drug to be given continuously through the disease is dilute hydrochloric acid in doses of ten to fifteen minims three times a day in water. While hydrochloric acid may not exert any specific action on the disease, it certainly supplies a defective ingredient to the gastric juice. The daily use of the toothbrush and a fragrant mouth wash helps to keep the teeth, tongue, and gums in a fairly healthy condition. Alcohol in any form is not to be given as a matter of routine, but only for special indications.

As to the complications, intestinal hæmorrhage needs ergot and external cold to the abdomen; excessive diarrhœa mends under opium suppositories or bismuth (subnitrate or salicylate) in large doses every three hours. Perforation of the bowel can be treated by the Alonzo Clark opium method, or as late investigations show, an exploratory laparotomy with suturing of the ulcerated area is often followed

by recovery. Strychnine given in fair dosage (from grain 1/50 to 1/30), three times a day, is a splendid respiratory and cardiac stimulant.

During convalescence, keep watchful for any untoward symptoms; add simple foods to the usual dietary, watching the temperature closely. If the digestion is good the patient rallies very soon, and a change to the mountains or seashore enhances the chances of his complete recovery.

The famous French physician Dujardin-Beaumetz well says that "the best treatment of typhoid fever is a good physician."

Dr. Joseph di Rocco, of New York, states:

There are certain principles, the aphorisms of treatment, which must be borne in mind and which are especially applicable to typhoid fever or in fact in treating any disease. These are: 1, The theory of treatment is entirely distinct from the art of treating a disease; 2, the treatment of one person does not necessarily apply to others; to treat the individual and not the disease; 3, to keep in mind the significance of the symptoms that present themselves; to recognize their importance and urgency; 4, to modify the treatment as the case goes on; and, 5, to make use of the valuable information furnished by the knowledge of the ætiological, pathological, and clinical manifestations of the disease. Treating a disease on these bases is the scope of every careful and observant physician.

The course of typhoid fever is generally six weeks. From the pathological process of the disease, I recognize the fact that the condition is a general blood infection with local (intestinal) lesions and cannot be aborted; and that it is especially liable to relapses (excitement predisposes to this). The late Dr. H. P. Loomis said that no patient died in a relapse.

For convenience sake, because of the protracted course, we may divide the treatment of typhoid fever into several stages.

General Management.—Place the patient in a single bed, in a large and well ventilated room. He is not permitted to get up or out of bed. Business and if possible friends should be excluded from the sick room. Realizing what careful nursing can do for this disease, a trained nurse, if possible, should be obtained, and the orders to her are written out. The bed linen should be changed daily. I have everything disinfected that comes into contact with the patient. Use for the linen, bed clothes, and bed pan a solution of bichloride, 1 in 500; for drinking and eating utensils, I use a solution of carbolic acid, 1 in 100; and for the hands, a solution of bichloride, 1 in 1000; for the stools and urine any one of these solutions may be used or formaldehyde.

The Diet.—In regard to the diet, I advise a strict milk diet; four ounces diluted with an equal part of vichy water, every four hours. Once in a while, I give some albumin water to break up the monotony of the milk diet. As to a cathartic, an initial dose of calomel, the small and repeated doses, half a grain every hour, for ten doses will answer the purpose. This will also stimulate the liver by which activity the assimilation of the milk is greatly helped.

The headache which is very intense at first, is generally relieved by hot or cold applications to the

head. The coaltar products are absolutely of no value. When the headache is not relieved, I try several doses of codeine (grain, ¼) and if this does not help I give a hypodermic injection of morphine (gr. ¼). Another distressing symptom is insomnia. This is quieted by the general management, but, if in spite of all this, the condition still persists I give with safety every night a powder containing,

B Potassium bromide,gr. 20;
Chloral hydrate,gr. 10.

M.

Sulphonal, in twenty grain doses, in hot milk is also very helpful.

How do I deal with the progress of the case? The mildest case of typhoid may be fatal at any moment. I see that the temperature is taken every four hours and keep record of such. I give and make use of very little drugs of whatever nature in typhoid fever; but I keep a watchful eye on any developing symptom which may come up and then meet that indication by drug administration to relieve and ameliorate that particular condition, whether that condition *per se* is distressing or whether it will lead to distressing consequences. Meeting a condition as it comes up is purely the rational way of treating it. Of all the drugs used in typhoid fever, I find that the administration of calomel in half grain doses combined with one grain of sodium bicarbonate, twice a day, will not only lessen any tendency to tympanites, diarrhoea, and constipation but it does seem to act in such a way so that the patient bears the disease with a great deal more comfort, and also that the drug greatly relieves the toxic condition of the disease. Why that is so I do not know, but it is a positive fact that typhoid patients can stand a long administration of calomel. Of course, in administering this drug, I look for any untoward symptoms of mercurialism, such as salivation, painful gums, etc. If this condition develops I stop the mercury, and use a mouth wash composed of potassium chlorate, ten grains to the ounce of water. Later on in the disease, to overcome the unhealthy condition of the mouth and to prevent any minor infection from that source to the various channels leading into it, a mild astringent mouth wash, such as

B Tincture of myrrh;
Sodium bicarbonate,ãã 32;
Water,36.

M.

This answers the purpose. I encourage as much as possible the imbibition of water and especially so the acidulated water, teaspoonful of dilute hydrochloric acid to a quart of water.

The perplexing problem of typhoid fever is the dieting of the patient. Study the patient and feed him according to his needs, but be sure to keep a careful watch upon the stools and digestive functions, to see that neither undigested curds nor other particles pass, and that diarrhoea, constipation, and tympanites do not occur. The diet remains unchanged. The amount of milk should, to the views of some, be given in a very limited portion, a little over a pint during twenty-four hours. The tendency nowadays is toward diminishing the intake of nourishment in typhoid fever, because of the lessened tendency to distension of the abdomen and the resultant fear of an intestinal hæmorrhage. A

ballooned abdomen is more to be feared than a temperature of 105° or 106° F. An ice bath will reduce the latter and will tone up the system, but a distended abdomen is difficult to relieve, and this difficulty increases in proportion as to the amount and time of distension. A distended abdomen not only prevents peristalsis and invites absorption of toxic material but predisposes to intestinal hemorrhage and perforation. One cannot help to find and see patients in whom symptoms develop which show that milk is disagreeing, such as abdominal distension, diarrhoea with curds, and coated tongue. I then modify the amount of milk, and give peptonized milk or kumyss or matzoon, curds or whey, or perhaps add a little whiskey to the milk. When all of these fail, I order broths, either chicken or mutton. Oftentimes it is just the change of one article to another that overcomes any disagreeable symptom. A good cup of strong coffee in the morning is refreshing. I do not use any stimulation unless there are positive indications for their use; and when these show themselves, a rapid and feeble pulse, absence of the apex beat, coated and dry tongue, moist and dusky skin, restlessness, insomnia, and muttering delirium. I do not hesitate to use stimulants, either in the form of alcohol (whiskey) or strychnine. In the majority of cases, alcohol works admirably; half an ounce of whiskey every four hours as such or in milk; and when this is not successful, I alternate with the whiskey, 1/40 grain of strychnine. Do not stimulate unless you have to, is a pretty safe and practical rule.

Fever. As to the problem of combating the fever, there are several ways to do so. Most people believe that every case of typhoid should be tubbed, but before making up one's mind, one should keep in view that tub (Brand) baths to have any effect should be given with the proper technique and with the proper attendants. The methods at one's disposal are: Sponge bath, Brand bath, cold pack, the use of the rubber coil. Tub baths work well in hospital practice, but in private one has to resort to other means to combat the fever simply because of the lack of proper help. Perhaps the easiest and safest and most practicable is the sponge bath, and I use this a good deal. This to be effective should be given in a definite way. When the temperature reaches 102.5° or 103° F., the patient is undressed and laid on a rubber sheet; cold cloths are applied to the head, and the patient is sponged thoroughly with alcohol and water (equal parts), to which pieces of ice are gradually added. The patient is sponged for ten minutes, is then dried off, and the rubber sheet is pulled out. At this procedure the back is rubbed with alum solution (half an ounce of alum to a quart of water), and when dried the back is dusted with stearate of zinc. This precaution is taken to prevent bed sores. This method of combating the fever is effective in fifty per cent. of the cases. The patient's temperature is taken half an hour afterward. Another method is by the use of the cold pack. This is not so effective, but it is especially indicated if insomnia or delirium are prominent symptoms. If the Brand bath can be given, one has an ideal way of lowering and keeping down the temperature in typhoid fever, and should be used when the fever cannot be controlled by the other available means. The Brand bath is especially indicated if

alcoholism is an element in the case. As a routine way, when the temperature is 103.5° F. or over the patient is tubbed. The procedure is as follows: The tub is filled with one third of water. The temperature of first bath should be from 80° to 85° F., but have lower temperature in the succeeding ones. The tub is placed along the side of the bed. I give half an ounce of whiskey in a little water to the patient before the bath. Two persons gently lift the patient into the bath without any physical exertion on his part; cold cloths or an ice bag is placed on his head. The key for success in giving a Brand bath is the constant rubbing and friction of the patient's body while he is in the bath. I reduce the temperature of the water gradually by adding pieces of cracked ice. After remaining in the tub for fifteen minutes, the patient is lifted out, placed in bed, rubbed, and dried, is given a glass of hot milk, and is left alone. The temperature is recorded half an hour afterward. The baths are usually given twice a day but are omitted during the night. In regard to this bath I do not stop because the patient complains of cold but I take him out if he becomes blue and the pulse becomes rapid. Other means must be substituted to reduce the temperature if the Brand baths cause severe and constant chilliness after its use and when there is too much resultant nervous shock.

The use of the rubber coil on the abdomen is another way to combat the fever. This cannot possibly reduce but can hold the temperature down and will surely have certain good effects upon the local lesion. It should be carefully watched and to be efficacious the water should be kept running.

I do not believe in using any antipyretics in typhoid fever. The protracted course of the condition with low nutrition and high fever does surely weaken the heart, and the use of these drugs which have a depressant effect will unquestionably aggravate a condition which we are striving to combat by careful management, nursing, and hydrotherapy. The pathological and clinical characteristics of the disease clearly contraindicate the use of any antipyretics to combat the fever.

Symptoms that may develop during the *progress of the case*. Ordinarily the patients are not troubled with constipation. In the early stage the bowels are moved with the initial dose of calomel. The daily use of the calomel greatly overcomes this condition, but when the calomel is stopped and constipation becomes an element in the disease, the best method to relieve it, I find, is by the use of soap suds enemata. If, after a while, the enemata become disagreeable glycerin suppositories can be substituted.

About forty per cent. of the patients have a diarrhoeal condition which is due to either of these two causes: 1, Errors in diet, or 2, catarrhal inflammation of the pathological lesion. Find out the cause, place the patient on peptonized milk, and reduce the frequency; and if it continues I would stop the milk and give albumin water and possibly alternating with light broths. But if in spite of all these precautions the diarrhoea continues and becomes an element I give a high hot saline rectal enema and every four hours a powder containing:

Bismuth subnitrate, gr. 10;
Morphine sulphate, gr. 1/10.
M.

Tympanitis is liable to develop during the course of the disease. The abdomen should be carefully watched and examined, and the condition which may mean and often is the forerunner of intestinal hemorrhage should be instantly rectified. The diet should be carefully watched, and if necessary changed. If this does not help, I resort to other means, and possibly the best is the application of oil of turpentine stupes to the abdomen. Or when the enema is given I add a teaspoonful of the oil of turpentine to the solution used. If I resort to internal medication to relieve the condition, I use a capsule containing five minims of the oil of turpentine and give it every four hours. Some prefer salol in five grain doses every four hours.

With careful attention to the general management the deliriums will seldom be seen; but one will find it in the alcoholic and in the desperate (toxic) cases of typhoid fever. The Brand baths have an especially good effect in relieving this condition. When delirium does develop it is a positive indication to give or increase stimulation. Whiskey, every two or three hours. If this method does not help, I use a powder containing

¹ Trional, gr. 20;
Codeine, gr. 14.
M. S.: Every six hours one powder.

Intestinal hemorrhage stands foremost among the complications. Bear in mind that abdominal distention before a hemorrhage is not a constant symptom. Let the patient have complete physical and mental rest; stop all baths at once. During the first twenty-four hours I reduce the quantity of milk and the amount of stimulation. I order a tablespoonful of milk every two hours alternating with a teaspoonful of whiskey. Place on the abdomen a rubber coil, and if the hemorrhage is very severe stop the use of the bed pan. With very slight hemorrhage give twenty minims of tincture of deodorized opium every four hours, or still better I give a hypodermic injection of morphine, grain $\frac{1}{8}$, combined with atropine, grain $\frac{1}{120}$, every four hours for a few doses. If the hemorrhage is severe, I increase the morphine and atropine till slow respiration is obtained. After twenty-four hours with no blood in the stools I return to the milk diet.

Intestinal perforation requires surgical interference.

In phlebitis I elevate and support the part involved; bandage and apply some soothing preparation such as lead and opium solution, and later on a ten per cent. ichthyol ointment will suffice.

Do not stop the baths or sponging because of an existing bronchitis. It is better to make the patient lie on his side and relieve the local condition by dry cupping over the whole chest. If the cough continues I give a simple cough mixture such as

R Codeine, gr. 14;
Syrup of wild cherry, 5j.
M. S.: Every three hours.

Bed sores. When the patient is bathed or sponged, the back is thoroughly dried and afterward dusted with stearate of zinc. Also have the patient lie over a rubber ring once in a while, which very act relieves the pressure. Bed sores in typhoid fever always signify faulty and careless nursing. If they occur, I treat them as surgical wounds, cleans-

ing them with bichloride solution and dressing with balsam of Peru.

In spite of all we do, some patients will have a relapse. The causes for relapse are usually errors in diet, or excitement, such as the visiting of friends, etc. Nevertheless they all get well. Treat the relapse in all respects as the original attack.

Convalescence. The one great object to remember in this period is the feeding of the patient. Some of the patients have borne the trouble remarkably well and others are very weak and anæmic, but all of them are extraordinarily hungry. Notwithstanding all these facts do not be any too anxious to overfeed them in the early part of convalescence, for if you do a relapse surely will occur. Give the body cells time enough to resume their normal activity. Keep the patient on a milk diet until the temperature has remained normal for at least seven days. Then gradually begin to modify the diet and give such articles as curds and whey; custard; soft boiled eggs; toast; soups, thickened with some meat powder; rice; zwieback; beef juice, scraped beef sandwich; chicken; and give regular diet at the beginning of the second week.

The bowels in this period should be carefully attended to. One or two pills of the preparation containing aloes, belladonna, and strychnine, every night, answers the purpose very well; or a teaspoonful of the aromatic elixir of cascara may be given every night.

Another question that comes up is, when is the patient going to get out of bed. In this respect I apply gradual sittings; if the temperature is normal for two days, the head is raised; at the end of first week, the patient sits up in bed; at the end of ten days, he sits in chair; and at end of second week walks about. If possible at this time, a change of climate is very good. Let him go to such places as the Florida resorts, Bermuda, or Atlantic City. Good food and good air are the best tonics.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

Poisoning with Carbon Tetrachloride.—Meetings of the Medical Societies.

LONDON, October 20, 1909.

Considerable interest has been aroused recently by the report of the death of a young lady from the effects of poisoning by carbon tetrachloride used as a dry shampoo. The circumstances of the case are as follows: A young lady, Miss Dalrymple, who had always enjoyed good health, went on July 12th to Harrod's Stores for a dry shampoo. She was told by the assistant in the hairdressing department that it might make her feel ill, but she decided to undergo the process. The operation, according to the evidence, was conducted in the usual manner. After it had continued for about two minutes the lady turned pale, leaned forward over the basin, and collapsed. She was placed on the floor and help was called for, but she ceased breathing two or three minutes after. Artificial respiration and other measures were applied with no avail. The inquiry into the cause of death was held by Mr. Luxmore

Drew at the Coroner's Court, Kensington, and during the course of this it was stated that carbon tetrachloride had been used in the hairdressing department of Harrod's for the last six years, and that only cases of slight faintness had occasionally been seen. Dr. W. Paul Jones stated that he was called in immediately to see the deceased lady. Death had occurred before his arrival. He found the odor of carbon tetrachloride strong in the cuticle. He also stated that on a previous occasion he had been called in to see a lady who had become faint during a shampoo and who had a rapid, irregular pulse on his arrival. Dr. Jones then suggested that fans should be used, and this suggestion was adopted. He had heard of several cases of slight faintness and had seen one case where the patient was quite insensible. Dr. H. Spilsbury, pathologist to St. Mary's Hospital, made the post mortem examination. He found signs of status lymphaticus in the deceased and expressed the opinion that the cause of death was syncope due to status lymphaticus accelerated by carbon tetrachloride. The verdict of the coroner's jury was "accidental death accelerated by the fumes of tetrachloride of carbon," and they added a rider that Harrod's Stores were not justified in employing an unskilled operator to perform this dangerous operation. On August 25th the Director of Public Prosecutions took proceedings against the manager of the hairdressing department of Harrod's Stores and the assistant who gave the fatal shampoo, on the charge of manslaughter. Important evidence was given at the trial by Professor Pepper. He said that he had observed the process being carried out at Harrod's and had noticed that the lady on whom the operation was performed had inhaled some of the vapor. This was indicated by a distinct cyanotic tinge of the lips and face. He expressed the opinion that status lymphaticus could not alone account for death and that the important factor in causing death was the inhalation of carbon tetrachloride. Mr. J. H. Chaldecott, honorary anaesthetist at St. Mary's Hospital, gave evidence as to the use of carbon tetrachloride as an anaesthetic in former years, and pointed out that its use was abandoned for this purpose owing to the dangerous effect of the drug on the heart. He stated that it was a powerful anaesthetic, that a person having a dry shampoo with the substance was likely to inhale some of the vapor, and therefore the same precautions should be taken as when an anaesthetic was administered. Dr. W. H. Wilcox, senior scientific analyst to the Home Office, gave evidence as to the dangerous nature of the substance used for the fatal shampoo. He pointed out that, while pure carbon tetrachloride was more poisonous than chloroform, the commercial samples, such as the one actually used, contained over two per cent. of carbon disulphide, which impurity greatly added to the poisonous properties. He had conducted a large number of experiments on animals with the substance actually used in this fatal case, and all these absolutely proved that the liquid was a dangerous poison. Mr. Bodkin, for the defense, stated that Messrs. Harrod, on learning that carbon tetrachloride was dangerous to certain people, immediately gave orders that this preparation was never again to be used in their establishment. The prosecution, on the strength of this,

agreed to withdraw the charge of manslaughter. In view of the important evidence which has been published in connection with this case, it is probable that the Pharmaceutical Society will take steps to put carbon tetrachloride on the poison schedule.

The medical societies have now commenced their meetings for the winter session. At a meeting of the Medical Society of London Mr. Hugh Lett read a paper on two cases of perforation of the small intestine. The first case was that of a woman, aged fifty-four years, who was admitted to the London Hospital in August, suffering from severe pain in the upper half of the abdomen followed by vomiting. She had suffered from dyspepsia for years, but had never had hæmatemesis. Laparotomy was performed and a small perforation was found in the jejunum, about eighteen inches beyond the duodeno-jejunal flexure. This was closed and the patient recovered. The cause of the perforation was doubtful. In Mr. Lett's opinion the condition was of similar causation to the peptic ulcer and might be described as a peptic jejunal ulcer. The second case was that of a man, aged forty-five, who was admitted to the London Hospital on June 26, 1907. Fifteen hours before admission he had a sudden attack of abdominal pain, accompanied or shortly followed by a shivering fit. The abdomen was uniformly rigid and painful and hardly moved on respiration. Laparotomy was performed by an incision in the right iliac fossa. A small perforation was found in the ileum, two inches from the ileo-cæcal valve. Peritonitis was also present. The perforation was closed and, after the insertion of a gauze wick into the pelvis as a drain, the wound was closed. The causation of the ulcer in this case was thought to be ambulant typhoid fever.

At the Royal Society of Medicine there was a clinical meeting. Some very interesting cases and specimens were shown. Mr. James Sherren showed a Meckel's diverticulum containing calculi, removed at an operation on a man aged thirty-eight years. The condition had produced colic, and the patient was said to have passed gallstones in his motions. When he was admitted to the medical side of the hospital with a history of a sudden onset of pain in the right iliac fossa, the pain was described as "grinding" in character and was accompanied by vomiting. Mr. Sherren saw the patient shortly after another attack and advised an operation. The abdomen was opened in the right iliac region. On examination he felt a sac full of stones, and on bringing this outside the abdomen, its nature was at once evident. The diverticulum sprang from the antimesenteric border of the ileum and measured four inches in length. It was filled with irregular brownish calculi which were very brittle. Analysis showed them to be composed of cholesterin, bile pigments, and calcium oxalate. Dr. H. D. Rolleston exhibited a case of pigmentation of the mouth in pernicious anemia in a man, aged twenty-five years, who was admitted to the hospital on July 19th, for diarrhoea, anemia, and enlargement of the liver and spleen. There was marked freckling of the lower half of the face, especially around the mouth. The lower lip presented inky pigmentation along the line of contact toward the angles of the mouth. Inquiry showed that the man had not taken arsenic

before admission. Dr. Rolleston said that that supported Dr. Hale White's contention that oral pigmentation occurred in pernicious anemia independently of arsenical treatment. The patient had greatly improved since he was put on arsenic. Mr. Albert Carless also showed a patient from whom both the upper maxillæ had been removed for fibrocystic disease. Mr. Pearce Gould mentioned a similar case in which both maxillæ had been taken away for carcinomatous disease.

Therapeutical Notes.

To Overcome Vomiting in Phthisis.—L. Delmas describes the character of the vomiting in phthisis and the means of overcoming it (*La Revue médicale*, August 25, 1909). It is recommended by Peter to give at meal time two to three drops of tincture of opium, or better, one teaspoonful of a solution of morphine containing one seventh of one grain in one and a half ounces of water. Tison prescribes an equal amount of cocaine hydrochloride in addition to the morphine. Marfan gives five to six drops of the following mixture before and after each meal:

R Alcohol,
Tincture of iodine,
Carbolic acid, }ãã5i

M.

Or five to six drops of the following:

R Menthol,gr. iv;
Alcohol5iiss.

M.

Or

R Alcohol3iiss;
Synthetic guaiacol,3ss.

M.

These are to be well diluted with water before being taken.

Castor Oil and Glycerin Mixtures.—The purgative action of castor oil is said to be enhanced by the addition of glycerin, and the following combinations have been proposed:

Purgative:
R Castor oil,5i;
Glycerin,5i.

M.

Laxative:
R Castor oil,5iiss to 3iiss;
Glycerin,5iiss to 3iiss.

M.

Electrical Treatment of Menstrual Disorders.—In the *Journal des praticiens* for April 3, 1909, Laborderie emphasizes the utility of static electricity in the treatment of various gynecological disturbances, especially amenorrhœa (*The British Medical Journal*, October 2, 1909). He has found that the electric bath regulates the menstrual period, and prevents the occurrence of dysmenorrhœa. He begins with daily sittings of twenty minutes' duration, finishing with about five minutes' "sparking" in the lumbar region, to induce congestion of the pelvic organs. He greatly prefers this treatment to that of ordinary emmenagogues, and prescribes at the same time general hygienic measures, Swedish gymnastics, suitable exercise, and change of air.

The Treatment of Headaches.—After enumerating the various manifestations and causes of headache, Rankin (*Monthly Cyclopædia and Medical Bulletin*, September, 1909) turns to treatment and observes that in patients who have to blame an overnight revel or an unwise evening meal for their headache, the speediest means of relief is afforded by an emetic. In order to stimulate hepatic activity, podophyllin, gray powder, blue pill, calomel, iridin, or leptandrin, combined with either colocynth or rhubarb should be resorted to. For the prevention of intestinal fermentation, antiseptics are valuable and may be given in an acid or alkaline mixture according to the indications of the case. The following prescriptions are given:

(1)

R Hydrochloric acid,m. xx;
Carbolic acid,gr. ii;
Strychnine solution,m. v;
Tincture of ginger,m. xx;
Decoction of cinchona,q. s. ad. 3i.

M. To be taken three times a day one hour after meals.

(2)

R Sodium sulphocarbonate,gr. x;
Sodium bicarbonate,gr. xv;
Tincture of nux vomica,m. x;
Spirit of chloroform,m. xx;
Compound infusion of gentian,q. s. ad. 3i.

M. To be taken three times a day one hour after meals.

The headache of influenza is relieved by such a prescription as this:

R Antipyrin,gr. x;
Acetylsalicylic acid,gr. x;
Caffeine citrate,gr. iii.

M. et. ft. cachet. Sig.: One every three or four hours until relieved.

The author remarks that in enteric fever the headache does not yield in the same way to analgetic drugs, and a mixture of chloral and the bromides is best in these cases; ten grains of chloral hydrate with twenty grains of one of the bromide salts usually gives temporary relief.

Nasal Suppositories for Acute Coryza.—In the treatment of acute coryza Baume (*La Quinzaine thérapeutique*, September 25, 1909) recommends the use of a nasal suppository of the following formula:

R Oil of cassia,gtt. ii;
Oil of anise,gtt. iii;
Oil of eucalyptus,gtt. iii;
Oil of thyme,gtt. iv;
Phenol, crystallized,
Camphor, } ..ãã gr. iii;
Menthol,
Cacao butter,q. s.

M. ft. suppositoria No. vi.

Sig.: Put one suppository into each nasal fossa every night before retiring.

To Overcome the Craving for Alcohol.—Rankin (*Monthly Cyclopædia and Medical Bulletin*, September, 1909) says that to assist a patient to accomplish a total abstinence from alcohol, in cases of an established alcohol habit, and where other treatment is being prescribed, the following pill is helpful:

R Extract of hydrastis,gr. ii;
Extract of belladonna,gr. 1/12;
Capsicin,gr. 1/2;
Strychnine,gr. 1/12;

M. ft. pil. No. i.

Sig.: One three times a day after meals.

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INFANT MORTALITY IN THE UNITED STATES.

"American race waste" is what Dr. Cressy L. Wilbur, chief statistician of the Division of Vital Statistics of the Bureau of the Census, in the *Census Mortality Bulletin* No. 104, dated November 2d, calls the estimated infant mortality annually from preventable causes. Dr. Wilbur justly holds that a long step would be taken toward the prevention of this waste of life—amounting to between 100,000 and 200,000 deaths of babies under five years of age—in the prompt registration of all births and the more careful and precise statement of causes of death by physicians. Dr. Wilbur says:—

In analyzing and comparing the totals obtained in the compilation of transcripts of death returns received for the year 1908 by the Census Bureau from the entire death registration area of the United States, as set forth in the bulletin, those for age periods show a somewhat increased per cent. of deaths of infants under one year for 1908, although the ratios for each of the individual years from one to four are identical for 1907 and 1908. Of the total number of deaths, 691,574 returned for 1908 from the entire registration area, it is stated in the bulletin that nearly one fifth were of infants under one year of age and over one fourth of children less than five years of age. It is declared that the brute force of the figures representing the actual deaths is more impressive, however, than any ratios or than the rates of infant mortality, even if the latter could be computed in the absence of proper registration of births. More than one eighth of a million babies under

one year of age and fully 200,000 children under five years of age died among about one half of the total population of the United States in the year mentioned. It is considered probable that fully 200,000 more died in those cities and States not included in the Census Bureau death registration area. It does not seem unreasonable, when we consider the fact that there is apparently no reason why infants, if properly born, and this means simply the prevention of antenatal disease and the improvement of the health and conditions of life of their parents, should die at all in early infancy or childhood, except from the comparatively small proportion of accidents that are strictly unavoidable.

The extremely important rate known as "infant mortality," says Dr. Wilbur, is the ratio of deaths of infants under one year of age, not to population, but to the number of children born alive during the year. This most important ratio should be readily available for the comparative study of deaths of infants in all of our States and cities, but, the bulletin states, in the great majority of them, unfortunately, the registration of births is worthless, and ratios calculated upon the returns would be deceptive and unreliable. In the final paragraphs Dr. Wilbur says:—

In the light of the figures quoted above it would seem that practical sanitation has only made a beginning in the work of preventing the occurrence of infant and child mortality. The ground has only been scratched over. Deep stirring of the soil and thorough cultivation of all the means available, with our present scientific and medical knowledge, for the guarding of young human lives would produce startling, and from all past human experience almost unbelievable, results. Public health, as a function of government, is itself only a creation of the middle part of the last century, dating from the utilization of the knowledge available as a result of the operation of the English laws for the registration of vital statistics (1837). Even in England, however, no systematic efforts have been made until very recent years to utilize to their utmost possibilities the facts already known. The infant mortality of England was higher for the years 1896 to 1900 than for the years 1861 to 1865, and no marked reduction in the early rates occurs until the present decade. It is time that greater attention be given to the subject in the United States. The prompt registration of all births and the more careful and precise statement of causes of death by physicians are essential. Such terms as "convulsions," "marasmus," "debility," and the like, should no longer be tolerated when the true cause of death can be determined.

THE ROCKEFELLER HOOKWORM COMMISSION.

We have become accustomed in this country to the founding of hospitals, universities, research laboratories, libraries, etc., by private individuals. It has remained for Mr. John D. Rockefeller, however, to make a distinct and almost startling departure from the usual methods by which men of wealth endeavor to benefit their fellow beings. The establishing of a commission to carry on a great "campaign of education" in a sanitary matter, as

Mr. Rockefeller has done in the case of the Commission for the Eradication of Hookworm Disease, is perhaps unique in the history of medicine. Yet, after a person becomes accustomed to the originality of the proposition it would be difficult to think of a wiser or more certain method of accomplishing a great and permanent good.

For a person who has followed the able and epoch making work of Dr. Stiles on the hookworm question but one issue of Mr. Rockefeller's undertaking seems possible, viz., success. Not that years of the most earnest and persistent work will not be necessary, but Dr. Stiles has placed the entire scientific aspect of the question upon such a firm basis that any outcome other than a very large measure of success seems precluded. Mr. Rockefeller's help comes at a most opportune time; the national government has at present neither authority in law nor the funds for carrying on this work, and for the States to do it individually would involve a large amount of duplication and a great waste of money.

The United States is fortunate in having a public health laboratory (the Hygienic Laboratory) where work such as that of Stiles is possible. This laboratory was founded a number of years ago, but it was enlarged in 1902, at which time Dr. Stiles was appointed chief of the Division of Medical Zoology. Congress recently made an appropriation for a new laboratory building. It was evidently the expectation of Congress that this laboratory would take a very important part in the public health work; so they refrained from fixing the salaries of the chiefs of divisions in the laboratory, as the Senate committee stated that they believed the surgeon general should be free to secure the services of the best men in the country. We trust that Dr. Stiles's connection with the Rockefeller Commission will not involve his separation from the Hygienic Laboratory; that would be a very serious loss to the public health work of the government. Moreover, the laboratory has already lost within two or three months the heads of two of its four divisions.

Mr. Rockefeller's gift has aroused considerable discussion in the daily press as to why the United States government has not taken up this campaign against the hookworm disease. As was pointed out above, the Public Health Service has neither the legal authority nor the funds for it. There has been much talk recently about Federal public health work, but this discussion has been of rather an academic character and has related chiefly to such questions as whether there should be a bureau or a department of health, whether certain bureaus should be transferred from one department to another, and so on. Meanwhile, practical methods of

enlarging the national public health work have been pointed out by Stiles in connection with the hookworm, by Wiley in connection with pure food, by Salmon and others in the matter of meat inspection, by Blue in connection with the plague, etc. It may be that the stimulus which Mr. Rockefeller's great gift will give to practical national public health work will be almost as valuable as the relief which it will afford to a large section of the country.

THE EDINBURGH CHAIR OF SURGERY.

We are indebted to an Edinburgh friend for an excellent abstract, published in the *Scotsman*, of the introductory lecture delivered on October 4th by Professor Alexis Thomson, the new incumbent of the chair of surgery in Edinburgh University in succession to Professor John Chiene. Professor Thomson's remarks were exceedingly graceful, and they dealt largely with the chair of surgery in past years. It seems that there was no independent professorship of surgery until comparatively recently; up to the year 1831, there was a conjoint chair of anatomy and surgery.

The first independent professor of surgery was John William Turner, who held the chair for only five years. Sir Charles Bell succeeded to it in 1836, and he was followed by James Miller, James Spence, and John Chiene. In the early part of the nineteenth century Edinburgh was the Mecca for American students of medicine, and the glamour of Sir Charles Bell's teaching still illumines the early annals of American medicine. The subsequent incumbents of the Edinburgh chair of surgery have been men of great influence in surgical progress, though, naturally, as our own teaching researches expanded, Americans betook themselves to the Scottish capital less and less. In particular, Professor Chiene, who has but now retired, was a tower of strength to Lister in the establishment of antiseptic surgery.

EXPERIMENTAL ACUTE NEPHRITIS.

The observing student of the progress of medical science cannot fail to have noted the readiness with which the true scientific worker at once lays hold of achievements in other departments of knowledge. In fact, this adaptability seems characteristic of the medical investigator. This is well illustrated by the extensive application which the Röntgen rays have been put to in medicine and surgery. Recently it has been apparent that the pathologist had found that merely anatomical investigations were comparatively barren in results, and that further progress required the application of newer methods. Thus,

the students of cancer have made use of animal inoculations and other methods of immunity investigations, and the workers on arteriosclerosis have employed the methods of the pharmacologists and chemists. In the study of nephritis it has long been felt that practically no further progress was possible by the use of merely clinical and anatomical methods. In fact, it may be said that until recently little has been added to our knowledge of this subject in the past thirty years. Thanks, however, to the methods of experimental pathology, we seem at last to have entered a field which gives promise of rich results.

In an interesting lecture before the members of the Harvey Society recently, Professor Richard M. Pearce gave an interesting account of the problems which it was hoped to solve by an experimental study of acute nephritis. Some of the problems which may be studied in this way possess considerable interest, not only for the pathologist and the clinician, but also for the pharmacologist. For example, it is of the greatest practical importance to determine the effect of various kinds of diuretics on diseased as contrasted with normal kidneys. The main problem, according to Pearce, is to determine the influence of the glomeruli as contrasted with that of the tubules.

So far as we know, the lesions of nephritis are produced by soluble toxic products reaching the kidneys through the circulation. In the experimental production of nephritis, therefore, it is necessary to imitate as far as possible the natural methods. Among the substances whose administration is followed by nephritis are uranium nitrate, potassium chromate, corrosive sublimate, arsenic, cantharides, and snake venom. Of these, the first three act mostly on the tubules, while the last three act mostly on the glomeruli. All of them produce albuminuria, but uranium nitrate is the only one which produces œdema.

The kidney is easily investigated by physiological methods. Tracings are made of the changes in its volume and of the blood pressure, and a study is made of diuresis. The effect of various stimuli is then noted, and comparisons are made between the effects observed in normal kidneys and those in which nephritis has been produced experimentally. Thus it has been found that in early tubular nephritis there is practically no change from the response seen in normal kidneys. In glomerular nephritis, on the other hand, the kidney vessels are apparently unable to react properly, for there is no increase in volume and there is a corresponding inhibition of diuresis in response to stimuli. According to the careful chemical analysis made by Pearce, there is a diminished excretion of nitrogen in tubular nephritis. A chance observation concerning the depressor

action of dogs' urine led to routine examinations of the urine of dogs in which chromium nephritis had been produced, and these established the interesting fact that in this form of nephritis the depressor substance regularly disappeared from the urine about the third day of the nephritis. It is too early to say what bearing, if any, these observations have on the nephritis of man.

The various theories of œdema have also been investigated by means of experimental pathology. Thus, Richter showed that if animals injected with uranium nitrate were given injections of water for several consecutive days, a marked œdema would be produced. This investigator also studied the relation of hydræmia to salt and water retention, and found that the water retention was the more important factor. Recent experiments indicate that vascular injuries are also of considerable importance in the production of œdema in uranium nephritis. Pearce, for example, used potassium chromate as the tubular poison, and ricin or snake venom as the vascular poison, and produced hydræmia by the injection of water. He found that œdema was produced only when all three factors were present; any two were insufficient. Investigations of this kind seem to afford the only proper basis from which to attack the greater problem, the ætiology of chronic nephritis, and it is for this reason that we welcome the methods of experimental pathology in this field.

THE MIRACLE OF GOOD HEALTH.

The anatomist or physiologist familiar with the delicate and complicated organism of the human body must marvel that even under the most favorable conditions it is ever in the condition of equilibrium necessary for perfect health. A machine of the nicest construction and built of the hardest steel is consigned to the scrap heap long before it has reached the span of life of three score years and ten. Composed for the most part of such frail and unstable stuff as protoplasm and water, it is indeed extraordinary that our poor bodies can endure so long. The human infant is the most helpless of newborn creatures and remains so for a longer period after birth than the young of any of the lower animals. He often comes into the world with a handicap of inherited tendency to disease. If he survives the dangers of parental ignorance and improper feeding, the infectious diseases of childhood are a further menace, and throughout his career he is constantly exposed to accident and the myriads of pathogenic microbes inimical to health and life itself. At any time he is like to be hoist by his own petard in the shape of a diseased and useless appendix.

In addition to these natural odds against us, there are the artificial disadvantages to be reckoned with which are created by man himself, the perils of machinery, the armaments of war expressly designed to kill in wholesale fashion, the dangers of unwholesome housing, occupational diseases, the abuse of drugs and alcohol, the murderous toll of railways, motor carriages, and trolley cars, and the effects of food and drink poisoned by adulterations, preservatives, and cold storage abominations. And now the luckless pedestrian has a new danger threatening. In the near future he may confidently expect to be struck by a bolt or other part of a dirigible balloon or aeroplane. Clearly, then, we have no *a priori* right to continued health, and the fact that the average city dweller's usual residence is in a hotel, flat, or tenement house, instead of a hospital, should be a cause for pious thanksgiving. Complete health may justly be regarded almost as an accident, a perishable possession of most uncertain tenure, to be jealously safeguarded and enjoyed in a rational way while it lasts.

News Items.

Changes of Address.—Dr. Michael Schuman, to 151 East Ninety-first Street, New York.

Dr. C. J. Hunt, to 122 South Fourth Street, Philadelphia.

Dr. M. Herman, to 423 East Sixth Street, New York.

Dr. F. J. Cotton, to 483 Beacon Street, Boston, Mass.

Bier's Hyperæmic Treatment.—A hot air cabinet for the application of Bier's hyperæmic treatment has been installed at the Fango Institute, 69 West Ninetieth Street, New York.

Buffalo Academy of Medicine.—At a meeting of the Section in Surgery, held on Wednesday evening, November 3d, Dr. William Allen Pusey, of Chicago, gave a lantern slide demonstration of some diseases of the skin.

New York Board of Health to Establish a Tuberculosis Clinic.—Among the items included in the budget for 1910 is that of an appropriation of \$27,000 for the establishment of a tuberculosis clinic by the New York Board of Health.

The Alumni Association of the Lying-In-Hospital, New York, will hold a meeting at the Harvard Club, on Tuesday evening, November 9th, at 8:30 o'clock. Dr. Albert F. A. King, of Washington, D. C., will read a paper on The Significance of Posture in Obstetrics.

Fortieth Anniversary of the German Hospital.—The Board of Trustees of the German Hospital and Dispensary, of New York, has issued invitations to the celebration of the fortieth anniversary of the hospital, to be held on Saturday afternoon, November 13th, in the dispensary building.

Oswego, N. Y., Academy of Medicine.—The opening meeting of the season of this academy was held at the residence of Dr. W. H. Kidder, on Thursday evening, October 28th. The evening was devoted to a discussion of anterior poliomyelitis, which is prevalent in the northern part of the State at present.

A Fellowship in Medicine for Women.—The Woman's Medical Association of New York City is planning to found a fellowship to stimulate and aid scientific work among women in medicine, as a memorial to the late Dr. Mary Putnam Jacobi, wife of Dr. Abraham Jacobi. It is intended to open the fellowship to all women who are graduates of a reputable medical college the world over. The amount required to complete the fund is about \$25,000, and it is planned to offer the fellowship for the year beginning in the fall of 1910. Dr. Eleanor Tones, 136 East Thirtieth Street, is treasurer of the committee.

The East Side Physicians' Association of New York will hold its next meeting at Scheffel Hall, 104 Third Avenue, on Thursday evening, November 18th, at 8:30 o'clock. An interesting programme has been arranged, and at the close of the meeting a collation will be served, to which members and guests are invited.

To Fight Sleeping Sickness in Congo.—Announcement is made that King Leopold, of Belgium, will give \$100,000 this year to fight the sleeping sickness in Congo, and an additional \$100,000 next year. In addition to this the Belgian government will spend between three and four hundred thousand dollars in improving the sanitation.

Rochester, N. Y., Academy of Medicine.—A regular meeting of Section IV of this academy was held on Wednesday evening, November 3d. The principal feature of the programme was a paper by Dr. George W. Goler entitled A Preliminary Report on the Tuberculin Test as Applied to a City's Milk Supply. Dr. Bradford A. Richards presided.

The Herter Lectures.—Professor Otto Conheim, of the University of Heidelberg, will deliver the Herter Lectures this year at the University and Bellevue Hospital Medical College. The subject is Enzymes and Their Actions. The lectures will begin on Monday, December 6th, at 4 p. m., and continue daily throughout the week at the same hour. Those who are interested are cordially invited to attend.

Lectures on Physiological Chemistry for Nurses.—Professor Edmond Esquerre, head of the department of chemistry of the Margaret Morrison School, Pittsburgh, is giving a course of lectures on physiological chemistry to the nurses at Mercy Hospital. These lectures are designed to give the nurses a more thorough knowledge of food values. The first lecture in the series was delivered on Monday evening, October 25th.

American Hospital in Paris Opened.—The American Hospital, which was built and equipped by the American colony in Paris, was formally opened on October 28th. The hospital is beautifully situated at Neuilly, a suburb of Paris, and is surrounded by spacious grounds. It contains twenty-five beds, many of which have already been endowed. Among those who have thus contributed to the permanency of the institution are Miss Helen Gould, Mr. J. Pierpont Morgan, and Mr. W. K. Vanderbilt.

The Harvey Lectures.—According to the original announcement sent out by the Harvey Society, the next lecture in the course will be delivered at the New York Academy of Medicine on Saturday evening, December 4th, at 8:30 o'clock, by Professor Carl Huber. His subject will be Renal Structure. There is a possibility, however, that the order of the lectures will be changed. Professor Otto Conheim, who is coming to New York to deliver the Herter Lectures, is expected soon, though the exact date of his arrival is not yet known. If he arrives in time, a lecture by him may take the place of the one announced by Professor Huber, in which case due notice will be given.

The Dedication of the New Building of the College of Physicians of Philadelphia will take place with suitable ceremonies on November 10th. The arrangements for the event have been made by a special committee of Fellows of the college, consisting of Dr. Charles H. Frazier, Dr. George E. de Schweinitz, Dr. James Tyson, Dr. T. Mellor Tyson, and Dr. George W. Norris. Mr. Andrew Carnegie, who contributed \$100,000 toward the erection of the building, will be present, and eminent men of science from all parts of the country, Canada, and even Europe are expected to attend the impressive dedicatory exercises on November 10th, and the banquet at the Bellevue-Stratford in the evening, at which Dr. James Tyson will preside. The exercises will be continued on November 11th.

Personal.—Dr. Achilles Rose, who has been spending some months in Greece, has been appointed an honorary member of the Medical Society of Athens.

Dr. William G. Cameron, of Tacoma, Wash., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. William Egbert Robertson has been elected professor of clinical medicine in the Medical Department of Temple University. Dr. S. L. Wolfe has been made emeritus professor of medicine in the same school.

Miss Nancy P. Ellicott, a trained nurse of Baltimore, has been appointed superintendent of the new hospital which is to be operated in connection with the Rockefeller Institute for Medical Research. Miss Ellicott assumed her duties on November 1st.

Night Camp for Tuberculosis Patients.—The new department of the New York Throat, Nose and Lung Hospital, 229 East Fifty-seventh Street, New York, for the treatment of tuberculosis patients at night, was opened for inspection on Tuesday, November 2d, and on Wednesday evening the first patients were admitted. This department is in reality a night camp for patients in the early stages of the disease who cannot afford to leave the city and have to work in the day time. It occupies a building next door to the hospital, which has been remodeled in such a way that it is hardly more than an accumulation of windows turning on pivots, thus providing practically an open air camp in which the patients may sleep. The dormitory is to be known as the Emma Calvé ward of the hospital.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statements of the new cases and deaths reported for the two weeks ending October 30, 1909:

	—October 23—		—October 30—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	542	145	435	147
Diphtheria	259	10	276	29
Measles	119	9	113	9
Scarlet fever	118	3	142	8
Smallpox	22	1	1	1
Varicella	41	1	50	1
Typhoid fever	107	2	82	21
Whooping cough	62	4	36	2
Cerebrospinal meningitis	3	4	9	0
Total	1,254	209	1,138	220

The Southern California Homeopathic Medical Society held its nineteenth annual meeting in Los Angeles on October 12th, 13th, and 14th. About one hundred delegates were present and the reports of the secretary and treasurer showed the society to be in a thriving condition. Dr. W. J. Hawkes, of Los Angeles, was appointed president, to succeed Dr. Walter E. Nichols, of Pasadena. Dr. William B. Campbell was elected first vice-president and Dr. Florella Estes, second vice-president. Dr. F. S. Barnard was reelected secretary and treasurer. No changes were made in the personnel of the board of censors, which is composed of Dr. C. B. Dickinson, Dr. W. J. Hawkes, Dr. E. C. Manning, Dr. S. S. Salisbury, and Dr. H. M. Bishop. Dr. Walter E. Nichols was elected to succeed Dr. T. C. Low on the board of directors.

Pellagra in the South.—According to the weekly report of the Public Health and Marine Hospital Service, one physician in Beaufort, S. C., had eight cases of pellagra this year, all of which proved fatal. A report from Georgetown, S. C., showed that during the past five years six cases of pellagra were treated at the infirmary, five of the patients recovered and the sixth was sent to the State insane hospital, and his fate was unknown. There is at present one case of suspected pellagra at Jacksonville, Fla. The patient came from Atlanta, Ga., several months ago, and has been under supervision since. No cases of pellagra have occurred this year in Florida, except possibly a suspected case, which is now being investigated at Hampton Springs. In Wilmington, N. C., forty cases have come under the observation of the local physicians since June Three or four deaths have been reported.

Gifts and Bequests to Charity.—By the will of Dr. Levi I. Shoemaker, late of Wilkes-Barre, Pa., the medical department of Yale University will receive \$500,000, upon the death of the testator's wife, who is to enjoy the proceeds of the estate during her life.

By the will of Mrs. Jane G. Phelps, late of Tarrytown, N. Y., the Presbyterian Hospital, of New York, will receive \$100,000; the Tarrytown Hospital will receive \$10,000; and the Lincoln Hospital and Home, of New York, will receive \$5,000.

The will of Mrs. Mary M. Bryant devised \$5,000 for a Rest Home for Children at the Children's Homeopathic Hospital, Philadelphia.

By the will of the late Jane A. Aikeman, the Burlington County, N. J., Hospital will receive \$500, and the Burlington Home for Aged Women will receive \$500.

By the will of James Ingram, late of Lawrence, Mass., the Ladies' Union Charitable Society will receive \$5,000 for the maintenance of the James Ingram free bed at the Lawrence Hospital.

Scientific Society Meetings in Philadelphia for the Week Ending November 13, 1909:

MONDAY, November 8th.—Section in General Medicine, College of Physicians.

TUESDAY, November 9th.—Philadelphia Paediatric Society.

WEDNESDAY, November 10th.—Dedication of new building, College of Physicians.

THURSDAY, November 11th.—Section meeting, Franklin Institute; Lebanon Hospital Medical Society.

FRIDAY, November 12th.—Northern Medical Association; West Branch, Philadelphia County Medical Society; Philadelphia Psychiatric Society.

Mississippi Valley Medical Association.—The thirty-fifth annual meeting of this association was held in St. Louis on October 12th, 13th, and 14th, with the retiring president, Dr. John A. Witherspoon, of Nashville, Tenn., in the chair. Addresses of welcome were delivered by Dr. Tinsley Brown, president of the Missouri State Medical Society, and by Dr. Clarence M. Nicholson, president of the St. Louis Medical Society. The response on behalf of the association to these addresses was made by Dr. T. Hunt Stucky, of Louisville, Ky. An exceptionally good programme was presented, and the meeting was very successful in every way. The following officers were elected for the ensuing year: President, Dr. Frank P. Norbury, of Kankakee, Ill.; first vice-president, Dr. George W. Cale, of St. Louis, Mo.; second vice-president, Dr. William B. Laws, of Hot Springs, Ark.; secretary, Dr. Henry E. Tuley, of Louisville, Ky., reelected; treasurer, Dr. Samuel C. Stanton, of Chicago, reelected. Detroit, Mich., was selected as the place for holding the next annual meeting.

The Eradication of Hookworm Disease.—A gift of \$1,000,000 by Mr. John D. Rockefeller, to fight the hookworm disease has been announced, and at a conference of a number of well known educators and scientists, principally from the South, with Mr. Rockefeller's representatives, the Rockefeller Commission for the Eradication of Hookworm Disease was organized, to carry on the war against the disease. The members of this commission are: Dr. William H. Welch, professor of pathology in Johns Hopkins University; Dr. Simon Flexner, director of Rockefeller Institute for Medical Research; Dr. Charles W. Stiles, chief of the Division of Zoology, United States Public Health and Marine Hospital Service; Dr. Edwin A. Alderman, president of the University of Virginia; Dr. David F. Houston, chancellor of Washington University, St. Louis; P. P. Claxton, professor of education in the University of Tennessee; J. Y. Joyner, State Superintendent of Education in North Carolina and president of the National Educational Association; Walter H. Page, editor of *The World's Work*; Dr. H. B. Frissel, principal of Hampton Institute; Frederick T. Gates, one of Mr. Rockefeller's business managers; Starr J. Murphy, Mr. Rockefeller's counsel in benevolent matters, and John D. Rockefeller, Jr.

Society Meetings for the Coming Week:

MONDAY, November 8th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, November 9th.—New York Academy of Medicine (Section in Public Health); New York Obstetrical Society; Medical Society of the County of Schenectady, N. Y.; Practitioners' Club, Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

WEDNESDAY, November 10th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Richmond County, N. Y., Medical Society.

THURSDAY, November 11th.—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, November 12th.—New York Academy of Medicine (Section in Otolaryngology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

SATURDAY, November 13th.—Therapeutic Club, New York.

The Health of Pittsburgh.—During the week ending October 23, 1900, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 12 cases, 0 deaths; typhoid fever, 19 cases, 5 deaths; scarlet fever, 30 cases, 2 deaths; diphtheria, 10 cases, 4 deaths; measles, 11 cases, 0 deaths; whooping cough, 11 cases, 2 deaths; pulmonary tuberculosis, 39 cases, 7 deaths. The total deaths for the week numbered 171, in an estimated population of 572,000, corresponding to an annual death rate of 15.54 in a thousand of population.

The Mortality of Minneapolis.—During the month of September, 1900, the total number of deaths from all causes reported to the Department of Health was 284, in an estimated population of 310,000, corresponding to an annual death rate of 9.32 in a thousand of population. The total infant mortality was 78; 62 under one year of age, and 16 between one and five years of age. Of the total number of deaths of children under two years of age 28 were due to diarrhoea and enteritis. There were 29 deaths from pulmonary tuberculosis and 16 from pneumonia. There were 13 stillbirths, 9 males and 4 females.

The Health of Chicago.—During the week ending October 23, 1900, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 125 cases, 18 deaths; scarlet fever, 89 cases, 2 deaths; measles, 29 cases, 1 death; whooping cough, 27 cases, 1 death; typhoid fever, 16 cases, 7 deaths; pneumonia, 4 cases, 107 deaths; tuberculosis, 82 cases, 64 deaths; chickenpox, 25 cases, 0 deaths. The deaths from other important causes were: Cancer, 37 deaths; nervous diseases, 13 deaths; heart diseases, 55 deaths; apoplexy, 12 deaths; Bright's disease, 59 deaths; diarrhoeal diseases, under two years of age, 62 deaths; diarrhoeal diseases over two years of age, 5 deaths. There were 11 suicides, 35 deaths due to accidents, and 4 deaths from manslaughter, making a total of 50 deaths by violence. The total number of deaths during the week was 508, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.02 in a thousand of population. The infant mortality was 161; 107 under one year of age, and 54 between one and five years of age.

The Health of Philadelphia.—During the week ending October 23, 1900, the following cases of and deaths from transmissible diseases were reported to the Bureau of Health of Philadelphia: Malarial fever, 1 case, 0 deaths; typhoid fever, 46 cases, 8 deaths; scarlet fever, 41 cases, 2 deaths; cerebrospinal meningitis, 1 case, 0 deaths; chickenpox, 45 cases, 0 deaths; diphtheria, 87 cases, 6 deaths; measles, 1 case, 0 deaths; whooping cough, 5 cases, 3 deaths; tuberculosis of the lungs, 84 cases, 54 deaths; pneumonia, 34 cases, 33 deaths; erysipelas, 6 cases, 0 deaths; mumps, 3 cases, 0 deaths; tetanus, 2 cases, 2 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 2 deaths; diarrhoea and enteritis, under two years of age, 38 deaths; puerperal fever, 2 deaths. The total deaths numbered 427 in an estimated population of 1,565,560, corresponding to an annual death rate of 14.16 in a thousand of population. The total infant mortality was 105; 88 under one year of age, and 17 between one and two years of age. There were 32 stillbirths; 18 males and 14 females. The precipitation was .01 inch.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending October 23, 1900, there were 1,346 deaths from all causes reported to the department, 118 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.38 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.66; the Bronx, 16.79; Brooklyn, 14.17; Queens, 15.12; and Richmond, 24.76. The total infant mortality was 408; 283 under one year of age, 75 between one and two years of age, and 50 between two and five years of age. Of the total number of deaths of children under five years of age, 102 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 56; pulmonary tuberculosis, 145; diarrhoeal diseases, over five years of age, 111; organic heart diseases, 132; Bright's disease, 105; cancer, 63; pneumonia, 95; bronchopneumonia, 93. There were 17 suicides, 64 deaths due to accidents, and 1 death from homicide, making a total of 82 deaths by violence. There were 126 stillbirths. One thousand one hundred and forty-six marriages and 2,229 births were reported during the week.

The New York and New England Association of Railway Surgeons.—The nineteenth annual meeting of this association will be held at the New York Academy of Medicine on Tuesday and Wednesday, November 16th and 17th, under the presidency of Dr. J. M. Wainwright, of Scranton, Pa. The meeting will be devoted to a consideration of the causes of railway accidents individualized, the subject being divided into four parts, as follows: The construction, maintenance and operation of railroads; medico-legal features of railway accidents; injuries to the head and spine; and medical and surgical end results of accidents. Twenty-two papers bearing on the various aspects of these subjects will be read and discussed, and the meeting gives promise of being of unusual interest. The president's address will be delivered on Tuesday afternoon at 2 o'clock, and on Wednesday afternoon, at 3:30 o'clock, Dr. Joseph A. Blake will hold a clinic at the Presbyterian Hospital. The officers of the association are: President, Dr. J. M. Wainwright, of Scranton, Pa.; first vice-president, Dr. C. A. Pease, of Burlington, Vt.; second vice-president, Dr. G. C. Madill, of Ogdensburg, N. Y.; corresponding secretary, Dr. George Chaffee, of Brooklyn; recording secretary, Dr. C. B. Herlick of Troy, N. Y.; treasurer, Dr. J. K. Stockwell, of Oswego, N. Y.

The American Association of Clinical Research was formed in Boston, on Wednesday, October 27, with the following officers for the first year: President, Dr. Charles H. Bangs, of Lynn, Mass.; first vice-president, Dr. W. T. Hamilton, of Montreal; second vice-president, Dr. E. Stillman Bailey, of Chicago; general secretary, Dr. James Krauss, of Boston; corresponding secretary, Dr. Francis H. Cobb, of Boston; treasurer, Dr. Walter Wesselhoef, of Cambridge, Mass.; register, Dr. De Witt G. Wilcox, of Boston. Two committees were appointed, one, a research committee, which will have direction of all the research work done under the auspices of the society, and the other is the educational committee. The members of the research committee are Dr. B. Merrill Ricketts, of Cincinnati; Dr. Frederick B. Percy, of Brooklyn, and Dr. A. L. Loses, of New York. The educational committee is composed of Dr. A. R. Peebles, of Boulder, Colo.; Dr. George Strickland, of Cincinnati, and Dr. F. C. Askenstedt, of Louisville, Ky. The association is composed of physicians and surgeons from both allopathic and homeopathic schools of medicine, and its object is "to establish clinical research on an incontrovertible scientific basis in hospitals and to institute an American journal of clinical research in which the work of the members of the association and of others doing clinical research work in a scientific manner shall be published."

Meetings of Sections of the New York Academy of Medicine.—At a meeting of the Section in Neurology and Psychiatry, to be held on Monday evening, November 8th, the programme will consist of an orthopaedic-neurological "symposium." Dr. Russell A. Hibbs will read a paper on Paralysis due to Cerebral Lesions. Dr. Charlton Wallace will read a paper on Paralysis due to Cord Lesions. Dr. Charles N. Dowd will read a paper on Paralysis due to Peripheral Lesions. Among those who will take part in the discussion are Dr. Virgil P. Gibney, Dr. H. W. Frauenthal, and Dr. B. H. Whitbeck.

On Tuesday evening, November 9th, the Sections in Dermatology and Public Health will meet. The session of the Section in Dermatology will be executive in character, and no papers will be read. At the meeting of the Section in Public Health Dr. E. L. Keyes, Jr., will read a paper entitled *The Effect of Venereal Disease upon the Public Health*, which will be discussed by Dr. James Pedersen, Dr. Prince A. Morrow, Dr. J. Bayard Clark, and Dr. A. T. Osgood.

The Section in Paediatrics will meet on Thursday evening, November 11th. The paper of the evening will be read by Dr. L. Pierce Clark on the *New Treatment of Cerebral Spasticities by Resection of Posterior Spinal Nerve Roots*. Dr. Alfred S. Taylor will demonstrate the surgical technique, exhibiting a case after limited resection. The subject will be discussed by Dr. Joseph Fraenkel, Dr. Virgil P. Gibney, Dr. Edward D. Fisher, Dr. T. Halsted Myers, Dr. Samuel Lloyd, and Dr. J. Ramsay Hunt.

The Section in Otolaryngology will meet on Friday evening, November 12th. Dr. D. Bryson Delavan will read a short paper on the *Latest Advances in the Study and Treatment of Tinnitus Aurium*. Dr. John D. Richards will read a paper on the *Removal of Petrous Pyramid for Suppurative Disease of the Labyrinth*, and will present two patients. There will be a general discussion.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 21, 1909.

1. Studies on the Diagnostic Bearing of Certain Normal and Abnormal Pulmonary and Pleural Conditions, By FREDERICK T. LORD.
2. The Necessity of Providing Suitable Employments for Tuberculous Patients, By ALFRED WORCESTER.
3. A Programme for Tuberculosis Societies in Smaller Cities and Towns, By CARL A. ALLEN.
4. Asexualization as a Remedial Measure in the Relief of Certain Forms of Mental, Moral, and Physical Degeneration, By J. EWING MEARS.
5. The Intravenous Use of Strophanthus in Broken Cardiac Compensation, By ARTHUR K. STONE.

2. **The Necessity of Providing Suitable Employments for Tuberculous Patients.**—Worcester states that such outdoor employments as farming, gardening, stock raising, and forestry offer good chances. In this search for proper employments, the physician's service is indispensable. But it is unfair that the whole burden should rest upon the medical profession. Nor can such an enormous task be delegated to any small commission with any expectation of a few being able to meet such multifarious needs. It will never be advisable to arrange for the concentration of such aided individuals in large shops and industries, however hygienic such might be, and however wisely supervised. We must always remember that the family, and not the individual, is the real unit of the community, and that it is neither practicable nor wise to require the unnecessary removal of families, and far less so to aid and abet their separation. The problem, although so general, is nevertheless a distinctly local problem, and so can best be solved by those who are in closest touch with the patients themselves and their families. The antituberculosis societies would seem to be the best fitted agents to undertake the task. Composed as they are of social workers and physicians, they are far the most likely to succeed. It is not enough for such societies, as some now seem to think, to send patients off to sanatoria and hospitals. It is also their duty to search out all possible ways of aiding their embarrassed families, and then, after the patients' return with the disease arrested, it becomes their duty to secure for them proper employment. In return for this service to them it will be easy to secure their assent to the supervision that is so desirable. And in this way many of the unfortunate relapses that now occur might be prevented. Here, then, we have another reason for securing as soon as possible the organization of an antituberculosis association in every city and town and village. And in order that their work in this as in every other line shall be most effective, such associations must be brought into cooperation.

4. **Asexualization as a Remedial Measure in the Relief of Certain Forms of Mental, Moral, and Physical Degeneration.**—Mears is in favor of asexualization as a relief in certain forms of mental, moral, and physical degeneration and quotes the legislatures of the States of Indiana and Oregon which passed bills authorizing sterilization in those subjects who were confined in the State institutions. He states that in the prison at Jeffersonville over three hundred convicts under the age of thirty years have been sterilized, some by authority of the State, but over one hundred of them at their own request.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 30, 1909.

1. The Present Status of the Serum Therapy of Epidemic Cerebrospinal Meningitis, By SIMON FLEXNER.
2. Indicanuria and Its Significance, By JUDSON DALAND.
3. Cardiac and Vascular Complications in Pneumonia, with Special Reference to Treatment, By F. FORCHHEIMER.
4. Action of Intestinal Antiseptics on Peptic Digestion, By ALFRED HEINEBERG and GEORGE BACHMANN.
5. The Paralytic Complications of Herpes Zoster of the Cephalic Extremity, By J. RAMSAY HUNT.
6. Lichen Planus; a Consideration of Its Ætiology as Illustrated by an Acute Case, By DOUGLASS W. MONTGOMERY and HARRY E. ALDERSON.
7. Brown Tail Moth Dermatitis. Report of a Case, By ALFRED POTTER.
8. Iododerma Bullosum Hæmorrhagicum, By WILLIAM S. GOTTHEIL.
9. The Wet Dressing in Surgery, By CHARLES A. PARKER.
10. Experimental Production of the Maternal Placenta, By LOE LOEB.
11. Cancer Cysts of the Breasts and Their Relation to Non-malignant Cysts, By JOSEPH C. BLOODGOOD.
12. Hæmolytic in the Diagnosis of Malignant Neoplasms, By O. P. JOHNSTONE and C. H. CANNING.

1. **The Present Status of the Serum Therapy in Epidemic Cerebrospinal Meningitis.**—Flexner states that it is about three years since the serum was first used therapeutically in this country. Gradually its employment has extended until now it is being used in Great Britain, France, and Germany, as well as in the United States and Canada. The Rockefeller Institute has sent supplies to India and to Jerusalem, but, as no reports have been received from these distant places, they will not be further considered in this report. At the time of the first employment of the serum in this country the epidemic of meningitis had already receded in the East, and although the disease spread westward even beyond the Rocky Mountains and was often very severe and fatal, yet the number of cases arising or being recognized in any one community was not large. The test made of the serum in America coincides with the period of recession of the epidemic. At the period of the first employment of the serum in Belfast and Edinburgh the epidemic was at its height; that is to say, it had reached its maximum development, from which it was tending to recede rather than to extend. All the evidence at hand shows that the disease at that time had not diminished in virulence and fatality, but the number of cases appearing was in a given time less than before. In Germany, also, the epidemic was virtually at an end when the serum was received. In France, on the other hand, the serum was available at the beginning of the outbreak of the epidemic which is now prevailing in Paris and the provinces. To the fortunate circumstance that Professor Calmette, on his return from the International Congress on Tuberculosis, carried with him to Lille a considerable quantity of the serum is to be ascribed its prompt employment. Subsequently the Rockefeller Institute sent large supplies to him, to Professor Netter, and to Professor Roux. The reports of the serum treatment now appearing in French medical journals are based chiefly on the employment of the serum prepared at the Rockefeller Institute. If, therefore, the decision of the value of the serum treatment was properly withheld until the opportunity arose to subject it to a test at the beginning of a severe epidemic, when the fatality is commonly at its height, this opportunity has now arrived in France. The outlook is further

promising for a comparative study of cases of epidemic meningitis treated with the serum and in other ways. While the serum is being employed widely, apparently, in Paris and in the intense way that experience has indicated to be the best, namely, by successive injections of relatively large doses, in the provinces it is being less generally employed and it has been found difficult to have the intense method carried out by the provincial practitioners. When the reports are all in and the figures have been collected we may expect, therefore, valuable information on the value of the serum. Although reports received from America and Great Britain have been favorable, Flexner still advises caution in concluding that the case has been proved for the serum. The total number of reports of cases of epidemic meningitis treated with the serum prepared at the Rockefeller Institute which he has collected is under one thousand, and it obviously will take a larger number than that to establish its value.

2. **Indicanuria.**—Daland remarks that the conditions which favor indicanuria are numerous. Morbid conditions of the teeth, mouth, oropharynx, nose, and sinuses connected therewith, in their relation to the production of indol, possess an importance which is far too little recognized. Not infrequently the buccal cavity contains much decomposing material, together with many microorganisms, both fermentative and putrefactive. The odor often suggests decomposition, and examination may reveal abscess of the gums, pyorrhoea alveolaris, with soft, flabby, congested, and contracted gums, forming numerous cavities, in which pus and food may be retained under conditions peculiarly favorable to decomposition. A similar condition may arise from the long continued presence of food between the teeth, especially when there is irregular dentition or caries. Occasionally in the enlarged crypts of diseased tonsils decomposing cheesy material may be found and suppurative rhinitis or sinusitis is not uncommon. When such conditions of the oropharynx, nose, or sinuses exist it is manifest that food, even during mastication and before deglutition, may become infected and putrefaction begin. Many causes favor the production of indol, such as simple excess of proteids from gormandizing; insufficient mastication or insalivation, and too rapid eating; any condition paralyzing or lessening gastric, intestinal, or colonic peristalsis, or retarding the onward progress of the gastrointestinal contents or interfering with the normal secretions of the stomach, intestines, pancreas, or liver, etc. It is evident, therefore, that indicanuria is to be expected in gastrointestinal or colonic atony or paralysis as well as in relaxation of the abdominal wall, producing gastroptosis or enteroptosis. Again, hernia, ileus, appendicitis, local or general, acute or chronic peritonitis, and pyloric or intestinal stenosis, constitute conditions favoring the growth of putrefactive bacteria. The absence, diminution, or excess of hydrochloric acid, by producing indigestion and fermentation, favor the production of indol. Indicanuria has been observed in diarrhoea, in association with indigestion, gastritis, enteritis, colitis, ulceration, or obstruction of the small or large intestines, cholera, dysentery, Addison's disease, and inanition. Acute attacks of indigestion with furred tongue, offensive breath, constipation, mental and physical depression, and head-

ache, familiarly known as "biliousness" or congestion of the liver, are usually associated with indicanuria, and, in many instances, are examples of acute toxæmia due to absorption of products of decomposition of the intestinal contents. It is more than probable that minor attacks of toxicity occur without well marked symptoms. Recurring attacks of simple hepatic congestion, due to toxic poisoning, interfere with the normal excretion of bile, which in turn incites intestinal indigestion, fermentation, and putrefaction, thus preparing the way for a similar attack on slighter provocation. In the course of months a chronic congestion of the liver is produced, aggravated by recurrent attacks of acute congestion, and thus, if the toxæmia is moderate, in the course of years the clinical picture of hepatic cirrhosis may be developed. Excessive formation of indol has been observed in various morbid states of the liver, with or without jaundice, in diseases of the pancreas, as well as in suppurative and gangrenous conditions of other parts of the body, as, for example, in empyema, gangrene, or abscess of the lung, and perityphlitic abscess; and has also been observed after the administration of turpentine or creosote.

4. **Intestinal Antiseptics.**—Heineberg and Bachmann observe that intestinal antiseptics interfere with peptic digestion *in vitro*. Betanaphthol, salicylic acid, sodium sulphite, and thymol are the most active in retarding digestion. Boric acid and resorcinol are the least active. The uniformity in the results of their experiments would seem to warrant the inference that intestinal antiseptics interfere with digestion in the stomach and probably in the intestine.

7. **Brown Tail Moth Dermatitis.**—Potter reports a case of brown tail moth dermatitis. It was originally supposed that the irritation was purely a mechanical one caused by the inflammation under the skin of the peculiar barbed netting hairs, but Dr. Tyzzer, of Boston, has practically proved by a most interesting series of experiments that the process is a chemical one. He has demonstrated that when the netting hairs are mixed with a drop of blood the rouleaux of red blood corpuscles break down. The corpuscles become coarsely crenated; the crenations are then changed into slender spines, and finally the corpuscles become spherical. The process does not, however, go to hemolysis. Further experiments show that the irritating properties of the hairs are destroyed when subjected to a dry heat of 115° C. and that they also fail to react with the red blood corpuscles, although the structure of the hairs is not destroyed even when heated to 150° C. The attack of dermatitis produced by the moth lasts from a few days to a week in the mild cases, but the severe form often lasts for six or seven weeks. The general health is not affected except in severe cases. Attacks recur whenever exposure to the poison takes place. The affection responds readily to mild soothing antipruritic lotions or salves, except in the severe cases, when more persistent treatment of stronger remedies is sometimes required.

8. **Iododerma.**—Gotthell quotes three cases of iododerma bullosum hæmorrhagicum which he found in the literature, and adds one of his own. He states that the main avenue of iodine excretion

being the kidneys, organs with a capillary circulation, perhaps the most extensive and complicated in the body, and the free iodine itself having a directly deleterious influence on the small vessels themselves, it is not strange that the renal system should be an early sufferer from the iodine poisoning. He has made it a practice for a long time past to have regular urinalyses made in patients undergoing the iodide treatment, and he has noted the fact that in most cases, even in young and otherwise healthy individuals, there were signs of renal irritation at times. Patients without a trace of nephritis previously showed albumin in varying amount and hyaline casts at times. It is desirable to keep track of the urine when administering an intensive iodine course, and to decrease or stop the exhibition of the drug when the excretion shows that the renal functions are being seriously interfered with. He has seen a number of cases of permanent damage to the kidneys due to the iodine medication. If the healthy kidney is liable to be injured by iodine the drug has naturally a still more deleterious effect when that organ is already damaged. Here there is a true vicious circle; the damaged emunctory prevents the normally rapid excretion of the drug, so that it is kept in prolonged contact with the tissues; and the irritant drug still further injures the excretory organ. The intimate relationship of iodism and chronic nephritis has long been recognized, and has been insisted on by many writers, among whom Duckworth asserts that iodine is dangerous in these cases, George Johnson notes the frequency of severe iodism in Bright's cases, and Stewart says that there is abundant proof that the more kidney elimination is hampered the greater the danger of iodism. Ehlers, as the result of his experimental work, comes to similar conclusions. The great majority of cases of severe iodism, the cases with bullous and hæmorrhagic eruptions, have occurred in patients suffering from renal insufficiency.

12. **Hæmolytic.**—Johnstone and Canning state that the hæmolytic reaction appears to be of decided value in the diagnosis of malignant neoplasms. Negative results do not rule out malignancy, but speak strongly against it. The reversed hæmolytic appears to offer valuable information with regard to the extent and activity of the tuberculous lesion. Several examinations should be made in doubtful cases. The reaction does not appear to occur in other conditions that would lessen its value in the diagnosis of malignancy.

MEDICAL RECORD.

October 30, 1900.

1. Relief of Urinary and Genital Conditions through Surgery of the Seminal Vesicles; Including a Summary of the Author's Experience, By EUGENE FULLER.
2. Clinical Varieties of Periodic Drinking, By PEARCE BAILEY.
3. Is Lobular Pneumonia Inflammation of the Lungs? By T. G. MCCONKEY.
4. Defective Speech in Bilingual and Feeble Minded Children, By BERTHA C. DOWNING.
5. The Preparation of Romanowsky Stains, By ROSCOE W. KING.

2. **Periodic Drinking.**—Bailey says that there are outside the sphere of well defined psychoses many mental states touching the abnormal and characterized by instability, by impulsiveness, by excess-

ive psychomotor reactions. It seems reasonable to think that further examination in this field may throw much light on periodic drinking. Many of the psychic causes and the psychic effects of alcohol are interchangeable. In studying the mental states which lead to drinking, we may find one that seems important, and mark it down as an essential cause. Then, later, when observing the effects of alcoholism on character, we come again, with startling frequency, upon the same feature which caught our eye when studying causes. The author thus cites fear. As a symptom, fear is disseminated through the whole clinical fabric, from the timidity of the besotted vagabond to the wild terror of the victim of alcoholic hallucinations. Thus fear is both a cause and an effect. So it is with many other of the factors busy in the genesis of this world disease. We see them as causes and, shortly afterward, they are looking at us branded as effects. Sexual desires, wrong moral attitudes, idleness, jealousy, all appear indifferently in the category of causes or effects. And in studying the springs of inebriety, we may do worse than begin with the effects. Two of these latter—sexual excitement and jealousy—deserve especial scrutiny. The relationship which exists between the sexual appetite and the stimulant which best arouses it needs only to be mentioned to be recognized. Indiscriminate license, sexual perversion, sexual crimes, all are the results of intoxication, as readily appears in every treatise on psychiatry and legal medicine. But that certain forms of alcoholism owe their existence to sexual desire is not so well established. Normal intercourse has nothing to do with drinking; and the alcoholic hilarity which enhances the popularity of the brothel stimulates desire rather than results from it. But in periodic drinking, the generative feature stands out more closely. Procreative tendencies are themselves more or less periodic in their appearances; and their impulsive character is revealed by such degenerates as exhibitionists and curl cutters, or by such imperative ideas as are found in the psychoses which result from sexual traumata in childhood. All periodic drinkers are erotomaniac. Throughout the clinical range of alcoholism, both of the single intoxication and of the chronic poisoning, there is disturbance in the emotional sphere. Individual feelings such as anger, grief, joy, fear, attain undue prominence, and react to stimuli too easily. This fact explains why cures, whether they be religious, "scientific," or commercial, which appeal to the emotions, are the ones which have the greatest success with the drunkard. And as we find these psychic features as results, it would not be surprising if they also figured as causes. We know now that many obsessions, tics, morbid fears, and even certain paranoid states, had their starting points in some painful emotional experience. He believes that periodic drinking, allied in many ways to these psychasthenic or hysterical complexes, will soon be shown, in many instances, to have had a similar starting point.

3. **Lobar Pneumonia as an Inflammation of the Lungs.**—McConkey believes that lobar pneumonia is essentially a pneumococœmia or bacteriæmia, and that the localization in the lung is not inflammation, but is a process secondary in sequence and secondary in importance.

BRITISH MEDICAL JOURNAL.

October 16, 1909.

1. Intermittent Closing of Cerebral Arteries: Its Relation to Temporary and Permanent Paralysis, By WILLIAM RUSSELL.
2. Heart Affections, Especially in Relation to the Diagnosis of the Various Malformations, By GEORGE CARPENTER.
3. The Peroneal Type of Muscular Atrophy. With an Account of a Family Group of Cases, By J. RUTHERFORD HALLIDAY and ARTHUR J. WHITING.
4. Case of Chronic Infantile Paralysis of Ten Years' Standing. Treatment: Result, By F. HERNAMAN-JOHNSON.
5. On the Determination of the Tubercle Bacillus in the Blood of Persons Suffering from Phthisis, By A. MIDDLETON HEWAT and HALLIDAY G. SUTHERLAND. The Science Committee of the British Medical Association: (Report CXVI.)
6. The Influence of the Unsaturated Fatty Acids in Tuberculosis, By OWEN T. WILLIAMS and CHARLES E. P. FORSYTH.

1. Intermittent Closing of Cerebral Arteries.

—Russell remarks that the effects of intermittent closing may be placed in four groups: 1. It leads to impairment or suspension of the function of the part affected, as manifested by sensory disturbances and motor faltering or paralysis. 2. It favors thrombosis in certain states of the vessel wall, or of the blood itself, or of both combined. 3. If the heart is weak the blood flow is more easily arrested, thrombosis is favored, and the risk of softening is greater. 4. If the heart is strong and the vessels not sound hæmorrhage is liable to occur. The hæmorrhage, however, does not take place in the closed portion of vessel; it must take place on the proximal side, where the pressure is raised because of the distal closing. The significance of the premonitory warnings and threatenings is thus seen, and the aim of practical therapeutics is made clearer.

4. Chronic Infantile Paralysis. —Hernaman-Johnson says that chronic infantile paralysis of medium severity occurring in persons not yet of full growth should never be regarded as incapable of improvement, even when the condition is of many years' standing. Because the parents will not permit us to perform a simple and, to our minds, obviously necessary operation, we should not therefore throw up the case. It is our duty to do what we can for the patient by other means, thereby conserving the limb, and leaving the way open for surgical measures at some future date. As regards paralytic deformity below the knee, leg irons and coil springs are not the last word in supporting apparatus. Provided expense is not a first consideration, special boots can generally be devised to suit individual cases—boots which need not be a source of constant embarrassment to the sensitive girl patient approaching young womanhood. Lastly, the fact that the patient has well to do and intelligent parents, desirous of giving their child every chance, is no guarantee that everything possible has been done. Each case, no matter what the history, should be considered with an open mind.

5. Tubercle Bacillus in the Blood of Consumptives.—Hewat and Sutherland have made twenty-two blood examinations in tuberculous patients, thirteen were performed according to Rosenberger's method and nine by Forsyth's method. They state that their results are almost completely opposed to

those obtained by these two observers. In one instance only, out of twenty-two blood examinations from twenty patients, was it possible to demonstrate tubercle bacilli. In this case two acid fast bacilli were found, resembling morphologically the tubercle bacillus. A second examination of the blood of the same patient proved negative after prolonged search, so that they were led to believe that the presence of the two bacilli referred to may have been accidental. Their observations seem, therefore, to indicate that at no stage of localized pulmonary tuberculosis is the tubercle bacillus demonstrable in the blood.

6. Unsaturated Fatty Acids in Tuberculosis.

—Williams and Forsyth state that bodies containing unsaturated fatty acids have the power of disintegrating the waxy envelope which surrounds the tubercle bacillus. The nature of the fat in the food influences the nature of the fat in the tissues. The administration of substances rich in unsaturated fatty acid may, therefore, be of value against the bacilli in the body. The dissolution of the waxy sheath may itself be fatal to the organism, or, this dissolution being effected, the bacillus may be rendered easier of attack by ordinary body forces. The unsaturated fatty acids and their compounds aid the absorption of other kinds of fat. With the administration of these bodies there is a beneficial effect on nitrogenous metabolism as well.

THE LANCET.

October 16, 1909.

1. The Relation of Medicine to the Ancillary Sciences, By SAMUEL WEST.
2. Address delivered by CHARLES A. BALLANCE.
3. The Operative Treatment of Cataracts, By A. E. J. LISTER.
4. A Report of Some Cases of Venous Anæsthesia, By C. M. PAGE and S. G. MACDONALD.
5. An Epidemic of Enteric Fever, Probably Due to Infection by a "Carrier," By HENRY ROSCOE.
6. Thyroidectomy and a Theory of Cancer Causation, By WILLIAM STUART-LOW.
7. A Fatal Case of Endocarditis Occurring during Scarlet Fever, with a Note on the Bacteriology of Scarlet Fever and Acute Rheumatism, By J. M. CLEMENTS.
8. A Case of Duodenal Fistula Cured by Operation, By R. LAWFOED KNAGGS.

4. A Report of Some Cases of Venous Anæsthesia.—Page and MacDonald report about ten cases in which venous anæsthesia was produced by the Bier method. They remark that if the technique is carefully carried out absolute anæsthesia will in most cases be readily obtained. Professor Bier reports two cases where analgesia only was present; this, however, was of such a character that the operation could be completed without resort to general narcosis. In his own cases the local anæsthesia has been perfect except in one case involving the toes only. Probably the cause there was failure to empty the part of blood. In this instance, however, the analgesia was sufficient for the completion of the operation. In three cases in which the Esmarch bandage had to be applied above an infective focus, pain in the foot was evoked by the resulting venous congestion. Thus in two cases a small amount of chloroform was necessary for the early stage of the operation. In one case an injection of morphine sufficed. In all these cases the pain passed off when "indirect" anæsthesia became established. When the

Esmarch bandage can be applied to the whole of the distal portion of the limb it can be applied sufficiently tightly without causing discomfort, except perhaps in those cases in which the arteries are calcareous and rigid. Failure of the upper bandage to secure hæmostasis (and as a result imperfect anaesthesia) may occur in patients whose arteries are rigid. The same difficulty may arise where the thick part of the thigh is the seat of operation; thus in one case he had to employ the ordinary tubular tourniquet, a proceeding associated with considerable discomfort. The danger of toxic symptoms from novocaine will only arise at the moment when the upper bandage is loosened, or when perfect hæmostasis has not been obtained. In his amputations the amount of novocaine gaining access to the general circulation has not been sufficient to alter the pulse rate, except in the case of an old man whose arteries were extremely rigid. Obviously, toxic symptoms are less likely to occur in amputation cases (where the solution has free egress from the divided tissues) than in more limited operations. In the former cases drainage of the wound for twenty-four hours is advisable. In a good many of his cases some irregularity and increase in the rate of the pulse were noted on the second or the third day. This late and transitory disturbance of the cardiac system he has also seen in some cases where only from ten to twenty cubic centimetres of a 0.5 per cent. novocaine solution had been used for producing anaesthesia by perineural injection. Professor Bier has recommended that at the completion of the operation the upper bandage should be very gradually relaxed, thus preventing too rapid diffusion of the novocaine. He has also suggested that normal saline solution should be run through the veins in the isolated area. It might be urged as an objection to this form of anaesthesia that the technique requires too much time. In a thin subject where the vein is really found this should not take more than fifteen minutes. In fat subjects, however, it is, for this reason, inferior to spinal anaesthesia for operations on the lower limb. In the case of the upper limb, when general anaesthesia is contraindicated, it seems to our authors to be a method of the greatest value. A limit to the extent of the tissues which can be infiltrated is set by the undesirability of injecting more than a certain quantity of the anæsthetizing fluid; 200 c.c. of a 0.5 per cent. of novocaine solution (which may be regarded as a maximum dose) should suffice to anæsthetize the field for most set operations; the area cannot conveniently be increased once operative procedures have commenced. As anæsthetic Bier recommends "novocaine" on account of its relative nontoxicity. A 0.5 per cent. solution in normal saline gives reliable results. Our authors have used a 0.25 per cent. solution successfully in one case, though anaesthesia was somewhat more slowly produced. The amount injected varies with the size of the limb and the extent of the area to be infiltrated. From 50 to 75 c.c. suffices for a moderate sized elbow, while 150 c.c. are required for a knee area. More can safely be employed in amputation cases, as only a small amount will subsequently reach the general circulation.

7. **Notes on the Bacteriology of Scarlet Fever and Acute Rheumatism.**—Clements remarks that streptococci have for many years been regarded as playing an important part in the cause of this disease and its complications. This view is based mainly on the constancy with which streptococci can be isolated from the inflamed fauces and commoner complications. They are present in the breaking down glands, in the pus from suppurating mastoids, in the heart, lung, and kidney complications, and not infrequently in the circulating blood of septic patients. The following criticism may be offered to the view that scarlet fever is due to a specific streptococcus. No constant type of streptococcus can be isolated from the inflamed throat or the various complications of the disease. The application of Gordon's tests shows that a variety of streptococci can be isolated not only from the inflamed fauces, but even from the same complication. The streptococci isolated, even from septic and fatal cases, have a low degree of virulence when injected into animals and do not produce any condition resembling scarlet fever. It has been suggested that scarlet fever is not caused by one particular strain of streptococcus, but is capable of being produced by a variety of streptococci. Against this view we have the clinical evidence that scarlet fever always breeds true. For the present we must be content to regard the streptococcal origin of scarlet fever as not proved, and in this connection it may be well to remember that, prior to the discovery of the Klebs-Löffler bacillus streptococci were regarded as the specific cause of diphtheria. The relation of streptococci to endocarditis and rheumatism may be considered together, endocarditis being a prominent, if not the essential, lesion in the symptom complex known as acute rheumatism. Many investigators have from time to time described organisms they have found in the blood and diseased tissues of acute rheumatism, and during the last eight or ten years attention has been concentrated on the presence of a short streptococcus or diplococcus in the blood of this disease, the joint, fluid, rheumatic nodules, during life; and in the heart's blood, pericardium, endocardial vegetations, and elsewhere, after death. It has also been shown that intravenous injection of cultures of this organism into rabbits produces all the cardinal lesions of acute rheumatism. On the other hand, other bacteriologists have consistently failed to isolate cocci or other organisms from the blood of cases of acute rheumatism during life. They state that only in a few cases have they obtained cocci from the lesions after death. The failure of some of these observers to isolate organisms from the blood cannot be attributed to their methods of blood examination. Horder has shown that by using the same methods in cases of ulcerative endocarditis he has obtained positive results in over ninety per cent. of the cases examined. In some of the latter cases Pfeiffer's bacillus was isolated from the blood, a delicate organism that is grown only with difficulty. It would therefore appear that his methods of blood examination succeed if microorganisms are present. The explanation of the discordant results of these two schools may perhaps lie (1) in the difference

of the technique employed; from the accounts given by some of the observers it would appear that sufficient care was not taken in obtaining the blood to avoid skin contamination; (2) the results may be partly due to a failure to distinguish between cases of ulcerative endocarditis and acute rheumatism. It is now well recognized that in malignant endocarditis microorganisms can practically always be obtained from the blood and that streptococci and pneumococci are those most frequently found. Moreover, the clinical distinction between these two diseases may be sometimes extremely difficult, and it is possible that in some of the cases where positive results have been obtained the disease was not acute rheumatism, but was malignant endocarditis.

LA PRESSE MEDICALE.

August 28, 1909.

1. Mechanotherapeutics or Electrotherapeutics in the Treatment of Peripheral Muscular Atrophy, By E. ROCHARD and P. DE CHAMPTASSIN.
2. Paralysis of the Serratus Magnus after an Attack of Measles, By M. G. BERTRAND and M. M. CHAILLY.
3. Pathogenesis of the Phlegmons of the Hand, By LÉON IMBERT.

September 1, 1909.

Some Remarks in Favor of Hysterectomy by Anterior Section of the Cervix, By T. DE MARTEL.

Hysterectomy by Anterior Section of the Cervix.—De Martel speaks of T. L. Faure's method of hysterectomy, which he describes, fully illustrated. He thinks this operation should be oftener performed than it is, and not only in such serious cases as proposed by Faure, and carried out by his school, but also in cases not so serious.

September 4, 1909.

1. Laryngeal and Respiratory Disturbances and Cardiac and Diaphragmatic Stosis, By G. SCHERE.
 2. Stimulation of the Resorption by Autoserotherapy in Effusion of the Pleura, By MARCOU.
2. **Autoserotherapy in Pleural Effusion.**—Marcou reports 160 cases of autoserotherapy observed by him and Tchigaloff in St. Petersburg. He makes an exploratory puncture in every case of pleural effusion, extracting 2 c.c. If the fluid is pale yellow, transparent, or even somewhat hæmorrhagic, he applies the Gilbert treatment, that is, he reinjects the fluid without entirely withdrawing the needle, direct into the subcutaneous tissue, so that it is not necessary to give two punctures to the patient. He then withdraws the needle, and covers the puncture with sterilized gauze without collodium. The patient is then told to rest. A second injection, if necessary, is given after an interval of a week. This method of Gilbert has absolutely no antituberculous action. The injection of a product of pleuritis into the circulatory apparatus produces a pleuritic antibody in the organism, which antibody determines the rapid cure of pleurisy. Marcou intends to apply this same treatment in ascites.

LA SEMAINE MEDICALE.

September 1, 1909.

1. Synergetic Medicines and Their Systematic Use in Clinics, By M. ROCH.
 2. Weber's Reaction in Helminthiasis, By J. GUAIART and C. GARIN.
2. **Weber's Reaction in Helminthiasis.**—Guaiart and Garin have found the Weber reaction positive in every case in which the eggs of trichocephalus

were found in the fæces. This is of great clinical importance. But the reaction has symptomatological importance only when accompanied by microscopical examination of the fæces.

September 8, 1909.

1. Physiological Researches on Application of Leeches, By P. EMILE WEIL and G. BOYÉ.
2. Should Salt Food be Forbidden after Administration of Calomel?

By LOUIS GAUCHER and ROGER ABRV.

1. **Physiological Researches on Application of Leeches.**—Weil and Boyé represent the following facts from their researches: The application of leeches, in man, produces a local, acute, transient hæmophilia, similar, up to a certain point, to a general hæmophilia. The blood is locally rendered incoagulable, and the leech hæmorrhage persists and proves to be as severe as hæmorrhage following large venesection. The application of leeches does not produce any general disturbance or malaise, although the loss of blood may be great, and offers thus all the advantages of phlebotomy, without its inconveniences and difficulties. The wounds from leeches are never accompanied by infection. Blood letting by leeches should therefore be given the preference over venesection, unless the case is one of Bright's disease, acute oedema of the lungs, or it becomes important to quickly take away a greater amount of blood.

BERLINER KLINISCHE WOCHENSCHRIFT

September 13, 1909.

1. The Action of Digalen upon the Heart and Bloodvessels in Healthy and Diseased Men, By HANS EYCHMÜLLER.
2. Cancer in Man and in Animals (*Concluded*), By E. F. BASHFORD.
3. Ileocolic Invagination of a Sarcoma of the Ileum, By KARL STERN.
4. The Signification of Involuntary Muscular Contractions and Their Control by Atropin in the Pathology and Treatment of Gonorrhœa, By CARL SCHINDLER.
5. Combined Staining Methods for Tubercle Bacilli, By S. HATANAO.
6. X Ray Treatment of Nervous Pruritus, By H. E. SCHMIDT.
7. Pathological Disturbance of the Mental Capacity, Mental Disease, and Mental Weakness in Their Relations to the Civil Law, By HANS LIESKE.
8. Technical Novelties, By GILLET.
9. Total Anæsthesia by injection of Cocaine into the Veins, By RITTER.

1. **Digalen.**—Eychmüller gives the results of his observations in regard to the action of digalen on normal and diseased hearts. From the intravenous injection of 1 c.c. of digalen into healthy young men he determined that the plethysmogrammes of the vessels of the arm and intestines showing the arterial caliber were affected in a very characteristic manner by the psychic changes inseparable from the injections, and by pain. The tachogrammes of the innominate and subclavian arteries showing the systolic increase in the rapidity of the current were only slightly influenced by psychic changes. On the contrary, the latter exhibited characteristic differences between the true and the simulated injections of digalen.

2. **Cancer in Man and Animals.**—Bashford presented a very interesting article on this subject at the International Congress at Budapest in September, 1909, which deserves to be rendered in English, but is difficult to abstract. Four factors in the

ætiology of cancer are considered, the constitutional conditions that are favorable or unfavorable to the growth of the cancer cells; the fact that the cancer cells, after they have passed through a phase of reduced capacity for proliferation, regain a great power of growth and a great power of resistance to changes in the neighborhood; the probably indirect relation of irritation to the origin of the disease; and the fact that cancer cells, even when they belong to a single organ can be divided into a great number of different groups which preserve their individuality during transplantation.

3. **Ileocolic Invagination of a Sarcoma of the Ileum.**—Stern reports a case of this nature met with in a man, fifty-seven years of age, which was successfully operated on. His explanation of the invagination is that the lower section of the ileum paralyzed in consequence of the sarcomatous degeneration was driven into the cæcum by the great peristalsis of the upper part of the small intestine induced by the cathartics the patient had taken.

4. **Involuntary Muscular Contractions in the Pathology and Treatment of Gonorrhœa.**—Schindler states that before instituting specific treatment for gonorrhœa we should reduce so far as possible both the automatic and the reflex muscular movements, the endogenous irritability of the hypogastric plexus, so far as this can be accomplished clinically, and render the entire sexual apparatus quiet, just as we are accustomed to do when the stomach, the intestine, a knee joint, or the eye is diseased. Therefore he has combined systematic atropinisation of the muscles of the sexual apparatus supplied by the hypogastric plexus, in order to weaken as much as possible the autocontractions of the glandular muscles and the retrograde contractions of the spermatic ducts, with the specific treatment of gonorrhœa, and has obtained good results.

9. **Total Anæsthesia by Injection of Cocaine into the Veins.**—Ritter has shown by experiments on animals that after injection of cocaine into the veins the sense of pain is lost all over the body for a certain length of time varying from fifteen minutes to half an hour or more. Later the sensibility of the animals became normal. With the use of weaker solutions it can be perceived distinctly that the animals feel a touch, but do not feel pain. With stronger doses the sense of smell is lost. No animal experimented on died, and in only a few were there any bad after effects, these usually when a large dose had been given to a small animal.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 14, 1909.

1. The Question of the Passage of Bacteria through the Kidney. By ROLLY.
2. The Origin of Albuminuria in Children. By HECKER.
3. The Usefulness of Cammidge's "Pancreas Reaction." By SCHUMME and HEGLER.
4. The Question of Excessive Serum Sensitiveness. By BRAUN.
5. Fulguration of Inoperable Carcinomata. By SCHULTZ.
6. Origin and Cure of Complete Rupture of the Perineum. By SELLHEIM.
7. The Treatment of Syphilis. By VERRIER.
8. A Judicious Form of Treatment of the Contracture Met with in Tuberculous Inflammation of the Hip Joint. By von LÖNNBERG.
9. Specific Means in the Diagnosis and Treatment of Urogenital Tuberculosis. By KARO.

10. Two Interesting Cases of Syphilis (Syphilis of the Muscle, Testicle, and Conjunctiva) and Conclusions Drawn from Them. By VON ZEISSEL.
11. Removal of the Tonsils. By FEIN.
12. Incarceration of a Large Diverticulum of the Small Intestine in a Congenital Inguinal Hernia. By HARRASS.
13. Treatment of Warts with Kelene Freezing. By BUEDEINGER.
14. Precautions of the District Medical Officers in Contagious Diseases. By HENKEL.
15. Care of Children in the Country. By PITTINGER.
16. Criticisms of My Instrument for Measuring the Blood Pressure. By HERZ.
17. Alfons von Rosthorn.

1. **Passage of Bacteria through the Kidney.**—Rolly finds that the number of bacteria excreted from the body through the urine is very small in comparison with the number circulating in the blood.

3. **Cammidge's Pancreas Reaction.**—Schumme and Hegler say that the fear they entertained that Cammidge's reaction was not a sufficiently reliable method of examination has been more and more confirmed by the results of their experiments.

4. **Excess of Serum Sensitiveness.**—Braun sums up the results of his experiments as follows: 1. The diphtheria toxine works favorably upon the production of antibodies and therein may lie the cause why animals previously treated with antitoxine show severer symptoms than those injected with normal horse serum. Tetanus toxine, does not restrict the beginning of anaphylaxis, but behaves similarly to diphtheria toxine. 2. The anaphylactic symptoms, which are of a nervous character in guinea pigs, are accompanied by a fall in the temperature and blood pressure. Toxic properties were present in neither the blood nor the brain nor the suprarenal capsules of the animals. No anaphylactic antibodies were demonstrated by transmission in the organs of sensitized animals. 3. Anaphylaxis may be regularly transmitted with guinea pig and rabbit serum only to guinea pigs, not to rabbits or white mice. 4. The latter as well as rabbits exhibit an excess of sensibility from repeated injections. 5. The properties of the anaphylactic reaction bodies are analogous to precipitin.

5. **Fulguration of Inoperable Carcinomata.**—Schultz reports a number of cases of carcinoma in which he has tried fulguration without avail and comes to the conclusion that in the form in which it is used at present it gives no results superior to the surgical procedures hitherto employed.

9. **Urogenital Tuberculosis.**—Karo speaks very highly of the results he has obtained from the subcutaneous and conjunctival tests with tuberculin in suspected cases of urogenital tuberculosis, and also of the results of treatment of the disease with tuberculin.

10. **Two Interesting Cases of Syphilis.**—Von Zeissl's first case was one of primary syphilis of the left tonsil, in which eight months later a syphilitic eruption appeared on the scrotum with an orchitis of the left testicle. Ten months later new patches appeared on the mucous membrane of the mouth. Nine months later there was an infiltrate in the left triceps 8 cm. long by 4 cm. broad. Treatment was practically continuous, and the patient finally recovered. The second case was one of primary lesion at the angle of the mouth caused by cutting with an

unclean razor. Varicose syphilitic symptoms appeared while the patient was under treatment. A year after the appearance of the primary lesion a syphilitic conjunctivitis appeared. The conjunctiva of the right upper lid became greatly swollen and chemotic as well as the upper part of the bulbar conjunctiva.

ANNALS OF SURGERY.

October, 1909.

1. An Analytical and Statistical Review of One Thousand Cases of Head Injury. By CHARLES PHELPS.
2. Injuries of the Kidneys. By ALEXANDER B. JOHNSON.
3. The Surgical Conception of Pancreatitis. By CHARLES N. SMITH.
4. The Advantage of Simplicity in Operations for Appendicitis. By CHARLES N. DOWD.
5. An Irrigating Sound of the Standard and Beniqué Type. By VICTOR COX PEDERSEN.
6. Intravenous Local Anæsthesia. By JAMES MORLEY HITZROT.
7. A Modification of the Crile Transfusion Cannula. By BERTRAM M. BERNHEIM.
8. The "Open-Seat" Pelvic Binder. By SAMUEL E. NEWMAN.
9. Note on Silver Foil in Surgery. By JOSEPH S. LEWIS.

1. **Cases of Head Injury.**—Phelps reviews ninety-three cases of head injury and remarks that some of the more important disclosures of his series are the independence of the symptoms of cranial fracture and of intracranial lesions, the intervention of the sympathetic system in the production of symptoms of intracranial injury, and the relations of temperature to consciousness and in general to prognosis and diagnosis; but the one fact of paramount importance which it establishes is that the essential lesion is the same in every class of intracranial injuries, and that it is a structural change in the cellular elements; that lacerations and hæmorrhages are accidental, and not essential; that whatever influence these lesions may have in determining the more intimate pathological condition they are but a part of a general contusion which may equally occur in their absence. This is the inevitable conclusion, says the author, which has resulted from the examination of every symptom in detail, focal as well as general, since in each instance many cases were found with no other gross lesion than a more or less well pronounced circulatory derangement or even with no evident change at all.

2. **Injuries of the Kidneys.**—Johnson remarks that the diagnosis of gunshot wounds involving the kidney may sometimes be made from the objective signs of injury of the kidney; in other cases the symptoms will be those of shock and intraabdominal bleeding, as in stab and incised wounds. The cardinal signs are hæmaturia and the escape of urine from the external wound. Owing to the narrow wound of entrance, this latter sign is much less common in gunshot injuries. If the ureter is plugged by a clot, severe renal colic may be present. In gunshot wounds involving the abdominal viscera, operated in for the control of bleeding or for the repair of wounds of the hollow viscera, it will be rare that the surgeon can diagnosticate injury of the kidney before opening the abdomen, unless hæmaturia or kidney colic have existed. The anatomical site of the wound and the direction of the wound canal may aid in the diagnosis, notably when made by a small calibered, jacketed rifle bullet, since these bullets pursue a straight course through the body. The

track of a soft lead pistol bullet through the tissues, on the other hand, can only be surmised, deflection being caused by bones, tendons, and fascial planes in a large proportion of cases. The location of a lodged bullet may be determined by means of stereoscopic radiographs or with one or other form of localizer; such measures might possibly locate a bullet lodged in the kidney, but would scarcely be of much diagnostic aid in ordinary cases.

3. **Surgical Conception of Pancreatitis.**—Smith observes that pancreatitis is of far more frequent occurrence than has been believed in the past; it is a disease progressive in its nature and tending to a fatal termination; it can, with the present methods at our command, be diagnosed without difficulty; it is in the great majority of instances, secondary to, and dependent upon, cholelithiasis or infection of the biliary tract; it can be cured, or its progress stayed, by the early removal of its causes and the prevention of their recurrence; its presence having been demonstrated, the immediate removal of its cause is imperative; sodium phosphate, olive oil, neglect, delay, and optimistic indifference in the treatment of gallstones must give way to prompt, radical, and efficient surgical intervention.

6. **Intravenous Local Anæsthesia.**—Hitzrot has successfully used novocaine in intravenous local anæsthesia, following Bier's method: The extremity to be operated on is carefully bandaged with a soft rubber bandage from the distal end to a point sufficiently high to allow free access to the field of operation. This must be so done that all the blood is squeezed out of the extremity and kept out by a broad band above the field of operation. A second rubber bandage is wound about the extremity below the field of operation, enclosing it between the upper and lower bandages. Under infiltration anæsthesia a subcutaneous vein, close to the upper bandage, is exposed, if possible by a vertical incision—if not, a transverse one will expose a vein without difficulty. The vein is freed, two ligatures passed beneath it, the upper ligature tied, and the vein cut across. An ordinary metal infusion cannula is then passed into the lower (distal) end of the vein and tied over it, firmly closing the vein about the cannula. Through this cannula the operator injects from 50 to 100 c. c. of 0.5 per cent. novocaine solution in a direction opposite to the normal blood current. Anæsthesia results in from 5 to 10 minutes, due to the passage of the novocaine solution through the vein wall, and is complete. The cannula is left *in situ*; injected solution must not escape. When the operation is completed and before closing the wound, he washes out the veins with warm salt solution. As an additional precaution the upper rubber bandage is loosened sufficiently to allow the blood to flow through the arteries and thus to wash out still more of the novocaine solution. After the blood has flowed for a few minutes the bandage is again tightened, the wound sponged dry, and closed in the ordinary manner. The dressing is applied and the rubber bandages removed. In amputations the line of the incision passing through the injected area makes the washing out process unnecessary. The anæsthesia lasts for from five to fifteen minutes after washing out the veins. In nervous individuals Bier finds a preliminary dose of morphine and scopolamine very satisfactory.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Meeting at Philadelphia September 27, 28, 29, and 30, 1909.

The President, Dr. GEORGE W. WAGONER, of Johnstown, in the Chair.

(Continued from page 882.)

The Oration in State Medicine.—Dr. ARTHUR B. MOULTON, of Camp Hill, gave a brief history of the progress made in the control of communicable diseases. It was shown how frequently the cause of disease was almost within one's grasp, and yet the significance of the facts might pass for centuries unnoticed. The idea of segregation was mentioned in the books of Moses. It was presumed that small-pox existed in China more than a thousand years before the Christian era, and scarlet fever nearly 500 years before.

No quarantine restrictions were established in England until 1348. The first attempt at the centralization of health authority was made at Venice in 1495. During the first two centuries after this country was discovered no health laws were passed. Probably the first restrictive measures adopted by any central health authority on the American continent was the order issued by a court in Massachusetts during 1647. In 1700 a quarantine law was passed in Massachusetts and also in Pennsylvania.

STATE APPROPRIATIONS TO HOSPITALS.

What Pennsylvania is Doing.—Dr. JOHN B. ROBERTS, of Philadelphia, gave a short history of the origin of the present system of making appropriations to hospitals not under State control by the legislature of Pennsylvania. He mentioned the benefit that had come from these appropriations in giving all sections of the State hospital facilities with the accompanying valuable training of nurses and doctors. He seemed to think that these advantages were offset by the manner in which the appropriations were granted by the legislature without any definite restrictions such as the law supposed would be thrown around the appropriation system by the investigations made by the Board of Public Charities. He showed that hospitals were granted large sums for maintenance even before the hospitals were built in some instances, and that in some cases the amount given for buildings and maintenance was out of proportion to the small amount raised by private subscriptions. The suggestion was made that the system led to an actual plunder of the public treasury.

What Other States are Doing.—Dr. CHARLES MCINTIRE, of Easton, said that his paper was planned to give a comprehensive view of the relation sustained by the various States to hospitals within their borders but not directly under State control. With the exception of Arkansas and Arizona, from which no information had been received, the States of the Union could be tabulated in three divisions: 1. Those which were forbidden by law to make appropriations to institutions not entirely under State control. 2. Those which, while there

was no legal prohibition, did not make such appropriations. 3. Those which were making such appropriations.

As in the practical outcome there was no difference between the first and the second classes, these two divisions were included in one list. According to the information furnished, thirty-four States in all make no appropriations. In the remaining list were included those that made appropriations under any conditions whatsoever. As these conditions varied, the accompanying statements were interesting. Of Connecticut the State comptroller wrote: "It has been the practice of this State for many years to appropriate toward the maintenance, and in some instances toward the building, of hospitals under private control in various parts of the State." Kansas made appropriations, apparently without conditions. Louisiana "partially" supported two hospitals, one in New Orleans and one in Shreveport. Maine made appropriations. The correspondent wrote: "You ask, 'What are the principles governing the appropriations and are there any means of oversight?' The principle in all these things is to get all that is possible by any means, fair or foul. 'Logrolling' is everywhere. The State has control over the two insane hospitals; the other institutions are conducted by boards which are practically self-perpetuating. Some of the organizations which get appropriations are absolutely private affairs." Of Mississippi the secretary to the governor wrote: "There are three charity hospitals in this State to which appropriations are made by the legislature on condition that a fixed amount of money shall be donated by the country and municipality in which they are located. These institutions were not originally organized by the State, but for years have been receiving State aid to the extent mentioned." From the attorney general of New Mexico he learned that the Territory did not maintain any public hospitals, and had therefore made it a practice in the past few years to make appropriations to the various charitable hospitals in the Territory. The legislature, however, was about to strike out all the appropriations to charitable institutions with the exception of those for two orphan asylums. The Albany Hospital, in the State of New York, was the only hospital in the State that received an appropriation directly from the State treasury, and this was to pay for the care of employees of the State who might become injured or sick while on duty at the Capital. The secretary of the State Board of Charities of New York wrote that, while most of the cities and counties, as provided by the Constitution, did pay sums of money to hospitals, it was in the shape of per capita sums for services and not the appropriation of a gross sum. Rhode Island made appropriations to various "charities," among which were enumerated some hospitals.

While the author had included Vermont among the States making no appropriations, to be literally accurate, he should report that from 1834 until 1888 the only hospital for the insane in the State was one founded by private bequests. This institution, in return for special privileges granted, received small appropriations from time to time, amounting, probably, to about \$35,000 in sixty-five years. This

money was a lien upon the property should it ever cease to be used for an insane hospital.

Advantages of the Pennsylvania System.—Dr. HORACE G. McCORMICK, of Williamsport, said that the State was out of debt, she had ample means, the taxes she received and the money she distributed came from those who were amply able to pay, and what better use, both from the standpoint of humanity and as a financial investment, could she make than was shown by her appropriations to the hospitals of the State? Had any of her appropriations ever been more carefully used, had any shown less "graft," had any done more for the relief of the poor and the betterment of humanity than those given to the hospitals of the State? The appropriations made by the legislature each two years, at least to the hospitals outside of the two great cities of the Commonwealth, were probably as fairly distributed as could be done by any system that could be devised. The people had put their stamp of approval on the system of the State, giving all in their power, and it never would be otherwise.

Objections to the Pennsylvania Method.—Dr. LAWRENCE F. FLICK, of Philadelphia, said that the whole subject of State appropriations to hospitals as practised in Pennsylvania could be categorically stated as follows: 1. State appropriations to incorporated nonsectarian hospitals were constitutional. 2. The incorporated hospital was the best channel for expending public money for the sick poor. 3. The State hospital was introduced in 1845. 4. A State department of charities for the control of all the charities of the Commonwealth was created in 1869. 5. Our Constitution and laws contemplated the administration of our charities by incorporated bodies under the supervision of the State Board of Charities. 6. In the spirit of our laws no appropriations should be made for charitable purposes except upon the recommendation of the State Board of Charities. 7. Practical politics had militated against the proper application of public charity. 8. Appropriations to hospitals had become a corrupting influence in politics. 9. The State Department of Health's assumption of hospital and eleemosynary functions was a further inroad of practical politics upon hospital work and was illegal and unconstitutional. 10. The objections to the Pennsylvania method of State appropriations to hospitals were in the politics which had crept into these appropriations and in the disregard for our Constitution and law. 11. The remedy was the exclusion of politics from public charity and the strict enforcement of our laws bearing upon it. 12. State appropriations should be made to all hospitals on the basis of private resources and the number of patients treated.

Suggested Improvements.—Dr. WILLIAM L. ESTES, of South Bethlehem, said that State supported hospitals should carefully guard against imposture and assistance unworthily bestowed, in order to prevent the pauperization of communities. In order to accomplish this end, no efficient system had yet been devised. It was recommended that every person admitted to a hospital shall be charged a fixed definite rate, according to the accommodations selected. Those demanding free treatment, who entered the charity wards, should be charged for treatment an amount necessary to cover the ex-

pense of this treatment. If the person so charged could prove that he was absolutely not able to pay for treatment, the State should pay for him. The burden of proof should always be upon the patient. Hospitals should use the data in regard to the number of days in the hospital each free patient had spent and the actual cost, plus a moderate percentage to cover the repairs and maintenance of the buildings, as a basis for soliciting State aid. The State had a right to demand economy and efficiency in the treatment of its ward. The multiplication of hospitals beyond the needs of the communities was to be deplored, because many small hospitals cost much more than a few larger ones to operate, and as a rule were not so efficiently conducted. All State assisted hospitals ought to be made a part of the educational system of the State. The clinical material of these hospitals ought to be made available for the instruction of the physicians of the community.

Dr. HENRY W. CATTELL, of Philadelphia, said there was great difficulty in properly discussing the question of State appropriations to hospitals without making the issue a political one. Money appropriated to hospitals under the conditions as they existed in Pennsylvania to-day must too often be considered as a direct bribe for political influence. The recipe for getting an appropriation to a hospital in Pennsylvania to-day was somewhat as follows: Devote ten to twenty per cent. of your appropriation to political purposes and charge it up to local expenses. Have plenty of private rooms and give fifty per cent. of these rooms to the politicians and their friends and permit the other fifty per cent. to be occupied by the pay patients exclusive of the medical and surgical staff of the hospital that received the appropriation. The time had arrived in the Commonwealth of Pennsylvania to distinctly separate the charitable institution from that managed with an ulterior object in view. It was an absurdity that there were six medical schools in the city of Philadelphia, and one of the solutions in this problem of State appropriations to hospitals lay in reducing at once the number of medical schools in the city from six to three.

Dr. C. E. THOMSON, of Scranton, said it was not the experience in his part of the State that, as alleged by Dr. McCormick, the hospitals receiving State aid were valuable as schools for physicians and nurses. They were mostly close corporations. Against the contention that we must have these hospitals supported by the State in order that we should have professional nurses, the speaker could show him a hundred nurses graduated and now in practice who came from schools that never received any State aid. He spoke of improvements in the non-admission of patients who could afford to pay in our hospitals. There was no improvement in his end of the State. In fact, it was getting worse; and, as to the reduction of "graft," he did not think the State of Pennsylvania had ever taken up the reduction of "graft" as a specialty. We all knew these political evils and we were here to try to correct them, and he should like to make a motion that Dr. Estes be instructed to make a draft of his recommendations and bring it before the House of Delegates. Such a motion was carried.

THE MUNICIPAL MANAGEMENT OF COMMUNICABLE DISEASE.

The Rôle of Microzoa in the Causation and Transmission of Communicable Disease.—Dr. JOSEPH MCFARLAND, of Philadelphia, said that bacteria and other fungi maintained an indefinite existence under uniform conditions. The only known modification was entrance upon a resting stage in the form of spores. These spores were able to grow and multiply when a proper substratum was provided. With protozoan parasites the life history was more complex. In some cases parasites might be transplanted directly from the blood of one animal to that of another, but in most cases indirectly, through some other animal or after transformation in the parasitic organism in the outer world. Among animal parasites there was every gradation from *Sarcocystis muris* and *Coccidium ovisforme* to the plasmodia of malaria. The patient and infectious agents in his body were to be considered in most infectious (bacterial) diseases, but insect hosts and infectious agents in their bodies were also to be considered. Knowledge of the latter group was but in its inception and was made difficult by our inability to recognize many of the parasites because of their small size or other peculiarities.

Ætiological Factors in Scarlet Fever.—Dr. JAY F. SCHAMBERG discussed the ætiological relationship of the streptococcus to scarlet fever, and concluded that it bore much the same relationship to this disease that it did to smallpox. The influence of cutaneous burns and surgical operations under anæsthesia was particularly referred to as a depressing factor increasing the susceptibility to scarlet fever. Most of the scarlatinoid eruptions occurring after burns represented the exanthem of scarlet fever. He urged that such patients, even though they presented an incomplete syndrome of the disease, should be perfectly isolated. He expressed the tentative opinion that children might under certain circumstances carry around in their throats the germs of scarlet fever and the disease might develop after the depression of the vital forces by a burn, surgical operation, or other cause. Illustrative cases were cited. Dr. Schamberg believed that there was no proof that infection was resident in the desquamating epithelium of scarlet fever. On the other hand, there was both clinical and experimental proof that infection resided in the discharges from the ears, nose, and throat. He therefore regarded the condition of these cavities as a safer criterion for the prolongation or cessation of isolation than the termination of the stage of desquamation.

Dr. A. C. ABBOTT, of Philadelphia, believed that we should never make any real progress in checking the spread of transmissible diseases until we had arrangements by which the patients could be taken from private houses.

Food Supplies Likely to Transmit Disease.—Dr. M. B. AHLBORN, of Wilkes-Barre, said that, concerning milk and milk products, the most important prophylactic measures were education of the public as to infection and the creation of public sentiment in favor of clean food supplies. There should be sensible sanitary legislation and its strict enforcement by trained sanitarians. Supervision

should be had of all dairies, farms, and cattle and of all employees on farms or in dairies, and rigid inquiry made into the health of all cattle and employees handling milk. In cities there should be compulsory registration of all dairies at stated intervals as to location, methods of handling products, etc., and chemical and bacteriological examinations should be made regularly. Regarding meat, fish, and shell fish, supervision should be required of all slaughter house and carcasses of animals killed for food, with the regulation of the health of those engaged in the production of meat products. Rigid attention should be given to cleanliness in storage and shipping. Sale should be prevented of fish and shell fish taken from contaminated waters. Concerning vegetables and fruits, no human manure should be used on truck farms or contaminated water employed in the washing of these products. All vegetables and fruits should be protected from dust and insects when exposed for sale.

What Shall We Do about Trachoma?—Dr. CLARENCE P. FRANKLIN, of Philadelphia, said that trachoma was originally an alien disease, but was now acclimated. It interfered with the "workability" of the eyes of adults and children, and thus was a menace to the public welfare. It was needless to say that interest should be aroused to accomplish its elimination. Cases cited showed the menace of the infection. There was need of more active interference with the course of the disease in Pennsylvania, of trachoma hospitals and trachoma school houses, such as were successfully maintained abroad.

Quarantine and Isolation.—Dr. WILLIAM M. WELCH, of Philadelphia, said that the object of isolation had been explained and the diseases requiring the enforcement of the measure enumerated. The importance of the measure was emphasized and effective methods were described. Restrictive measures applicable to the well members of the household were also considered. The duration of isolation must vary in different communicable diseases. Attention was called to the hardships incident to enforced quarantine and to the fact that the rights of those in quarantine should be respected.

DISINFECTION.

James J. Quiney of Easton: Many disinfectants generally employed are of questionable value. There should be most careful disinfection of eating utensils, medicine and drinking glasses; of clothing, bedding, etc. The cleansing of floors, woodwork, and furniture should be most thorough. No cuspidors should be allowed. The paper deals further with the disinfection of discharges from nose and throat, of excreta, water used for bathing purposes, of the patient and nurse, of room and furnishing, the preparation of the room for disinfection, and with the materials used for fumigation.

SECTION IN MEDICINE.

The Early Diagnosis of Pulmonary Tuberculosis.—Dr. CHARLES H. MINER, of Wilkes-Barre, said that, of 272 members of 157 families of tuberculous patients attending the State Tuberculosis Dispensary No. 1 in Wilkes-Barre, 180, or sixty-six per cent., were found to be tuberculous. In those exam-

ined for signs of obstructed respiration, fifty cases of adenoids and enlarged tonsils were found, and thirty-five of these had been operated on at the dispensary. To diagnose tuberculosis in its real incipency we must look for it during infancy and childhood, localized in the lungs and bronchial glands. The time for making an early diagnosis in adults was when renewed activity first took place or there had been a reinfection from without.

The Röntgen Diagnosis of Pulmonary Tuberculosis.—Dr. CHARLES LESTER LEONARD, of Philadelphia, said that this method of diagnosis was of distinct value in adding to and confirming the findings made by other methods of physical diagnosis and in obtaining mechanically a permanent record of the condition present. To obtain the necessary detail and eliminate motion in the lungs, due to respiratory movements and the heart's pulsation, exposures of one quarter of a second were essential. The method was valuable in the early stages of pulmonary tuberculosis in adding data by which the diagnosis was rendered certain. Localized emphyemata could be distinguished from dilated and occluded bronchi, and pyothorax and pneumothorax of slight extent could be found, while pericardial thickenings and effusions, whether of tuberculous or other origin, were clearly seen. The relative height of the diaphragm was an unreliable index of the capacity of the lungs, since variations in the positions of the mediastinal viscera affected their relative capacity. This method had also shown that calcification of the sternocostal cartilages was a frequent accompaniment of pulmonary tuberculosis and might involve all the cartilages.

Tuberculosis of the Lungs without Cough or Expectoration.—Dr. JOSEPH P. WALSH, of Philadelphia, read a report of thirteen new cases and 442 cases from the literature of tuberculosis of the lungs without cough or expectoration, and gave general statistics on the frequency of this occurrence. Since tuberculosis of the lungs could be readily diagnosed, according to German and American statistics, in at least five per cent. of cases before cough and expectoration began, it was important not only to wait for the discovery of tubercle bacilli in the expectoration, but not even for cough or the expectoration itself.

The General Practitioner and the Incipient Case of Pulmonary Tuberculosis.—Dr. ARTHUR A. WATKINS, of St. Benedict, said that a distressingly large number of physicians either hesitated to make a diagnosis of an early case or were unable to recognize it. In rural districts the number of tuberculous patients receiving modern treatment was incredibly small. The average family physician did not make a diagnosis until the physical signs were well advanced. Thus incipient cases were neglected and the patients inadvertently imposed upon. It was probable that the average family physician had from twenty-five to one hundred cases of pulmonary tuberculosis among his patients.

The Prognosis in Advanced Pulmonary Tuberculosis.—Dr. WILLIAM B. STANTON, of Philadelphia, said that the majority of cases that came for treatment before the general practitioner were advanced cases. Believing that good results were obtained only in incipient cases, the treatment was not

pursued with the optimism and enthusiasm that should characterize it. Large left sided lesions often admitted of a guardedly favorable prognosis, while large right sided lesions did not.

Dr. EDGAR M. GREEN, of Easton, believed that the fault in diagnosing tuberculosis lay not so much in the lack of ability as in the lack of thorough examination. One thing of considerable help in the diagnosis of early cases was the knowledge that at times the bacilli were present in the urine when there was no expectoration. In one case in which this had been of great value to him there was occasional rise of temperature, and a careful examination showed a very small focus in the upper portion of the left lung. There was absolutely no cough and there were no other symptoms. He believed these cases in which there was no cough were much more frequent than was generally thought.

Dr. ARTHUR A. WATKINS, of St. Benedict, did not agree with Dr. Green that the fault was due to negligence. In a recent tuberculosis exhibit in his town, of eleven patients with tuberculosis, the physicians who were present would admit that only one had the disease, and in this one the condition was far advanced and a cavity was present.

The Importance of Considering the Arterial and Venous Systems in Cardiac Disease.—Dr. HOBART AMORY HARE, of Philadelphia, said that changes in the bloodvessels could be roughly divided for clinical purposes into three great classes, namely, far advanced atheromatous change with calcareous deposits and associated destructive disease of the intima, fibroid change in which the most important lesion was arteriocapillary fibrosis, and, last of all, vascular spasm whereby the elasticity of the vascular walls was impaired almost as much as when an actual organic lesion was present. While he was aware of the fact that the morbid anatomist might criticize this classification, he held the opinion that the class of cases characterized by calcareous change with breaking down of the intima was quite a different type of disease from that characterized primarily by spasm and later by spasm and arteriocapillary fibrosis. It was exceedingly rare, in his experience, to meet with marked calcareous change or brittleness in the arterial system of the well to do or upper class, and comparatively rare to find high tension due to spasm and fibrosis in the working classes. Hard manual labor did not cause the same arterial changes that were caused by hard mental labor and nervous stress. This was all the more interesting because the abuse of alcohol and syphilitic infection, the two great causes of arterial disease, might be considered to exert an equal or nearly equal influence in both cases. The deduction from these facts, so far as treatment was concerned, was that when calcareous change was well developed little could be done for the relief of the patient; whereas in the latter type a good deal could be done, the degree of good depending, of course, upon the severity of the lesions in each instance. The recognition of the underlying vascular state, altered by actual illness, was of the utmost importance in prognosis, and of even greater value from the standpoint of therapeutics. Nor was it safe to be content with the examination of one vessel in determining the general arterial state. Aside from

the chronic and persistent manifestations, the importance of studying vascular changes in acute illnesses was overwhelming. How futile it was to stimulate a heart which was pumping against a high pressure in narrowed and tortuous vessels unless we simultaneously relieved it of some of its labor by reducing that pressure by the nitrites. To give digitalis under these circumstances, in the face of high tension, was equivalent to giving a horse an extra meal and then doubling his load.

Blood Pressure Past Middle Life in Diagnosis, Prognosis, and Treatment.—Dr. JOSEPH H. BARACH, of Pittsburgh, read a paper based upon blood pressure studies with the Erlanger sphygmomanometer in a series of over seventy males, and including observations and deductions as to the value of the study of the blood pressure past middle life in diagnosis, prognosis, and treatment. A chart of blood pressure readings in normal individuals from the age of ten to ninety years showed that with the advance of life the blood pressure seemed to rise steadily. At the age of forty the blood pressure was 115, at sixty it was 135, and at eighty it was 150. With these figures the medium normal, 20 mm. above or below represented the limit of the normal range under any circumstance; figures beyond that were always associated with something pathological. In treatment the greatest effect came with the regulating of the patient's mode of living. As accessory measures the various depressor drugs were to be used cautiously.

An Analysis of Sixty-two Cases Exhibiting the Xiphisternal Crunching Sound.—Dr. MYER SOLIS-COHEN, of Philadelphia, said that, while usually heard over the ensiform cartilage and the lower end of the gladiolus, the area in which the sound was sometimes heard was limited by the third rib above the anterior axillary line and an inch and a half to the right of the sternum. The sound usually was increased when the patient leaned forward and diminished when he lay. In some cases it was loudest during inspiration, in others at the end of this act, in still others at the end of expiration. In many instances it was not affected by the breathing. The great majority of the patients were males, white, and between the ages of twenty and seventy. All occupations were represented. In the absence of autopsies, the nature of the sound was a matter merely of speculation. Apparently it had little significance. It was consequently important not to mistake the sound for a murmur or a pericardial friction.

Dr. JAMES M. ANDERS, of Philadelphia, said that in these cases it was very important to detect the degree of loss of elasticity of the arterial walls, the degree of sclerosis, and to carefully distinguish that, for the sake of treatment, from rise of blood pressure. It was also important to estimate the loss of vasomotor tonus of the arterial walls. These arterial changes were very commonly associated with cardiac affections, and it must be remembered that they might predominate in certain portions of the body. The indications for treatment must necessarily vary according to the particular changes. The great difficulty he found was that students and physicians were apt to overlook the fact that these changes were not necessarily disseminated through-

out the body, but confined principally to certain portions of the economy. It was also important to detect the lack of elasticity in the veins and the degree of vasomotor tonus of the venous walls. As in the case of the arteries, so with the veins, the impediment to the flow of blood might be general, or it might be localized to certain portions of the body. The aspirating forces within the thorax must be carefully estimated in the given case. He referred especially to the inspiratory effort in breathing. He agreed with Dr. Barach that a rise of blood pressure was important for diagnosis and that it enables us to make a better prognosis. In arterial sclerosis affecting principally the smaller arteries a rise of blood pressure was a most important early symptom.

Dr. EDGAR M. GREEN said that Dr. Hare had spoken of the large element of nervousness in many of the cases of arteriosclerosis. He had been surprised to find that it might be said to be a temperamental condition. He had found that patients who did not relax were more subject to this disease than others. He had seen more patients with arteriosclerosis who did not have syphilis and were not alcoholics than those with these conditions, and yet in almost all this certain neurotic condition was present in a very marked degree.

Dr. HARE said we must recognize that the term sclerosis was rather objectionable to modern pathologists; it was not sufficiently definite. It was true that in a large number of cases there was sclerosis in the sense that there was thickening of the vessels, either because of fibroid change or because of calcareous deposit. It was also true that in a large number of cases it was not so much actual fibrosis or sclerosis or atheromatous change as it was spasm. It was of great importance to recognize the degree of spasm, because in direct proportion to its recognition could we employ the therapeutic measures with success, and in direct proportion to the degree of sclerosis or actual fibrosis or atheroma could we employ remedies with failure. If there was one important point which we had learned from our studies of pathology in recent years, it was that there was a limit to therapeutic usefulness.

The Diagnosis and Treatment of Pleurisy with Effusion.—Dr. DAVID RIESMAN read a paper in which he said that, while usually easy, the diagnosis of pleurisy might be a very difficult matter. The inaugural pain might not be in the chest, but in the abdomen, in the flank, or in the costal space. Empyema might be mistaken for typhoid fever, tuberculosis, or malaria; interlobar pleurisy was especially difficult of recognition. The physical signs of pleurisy might be aberrant, bronchial breathing and twangy voice sounds leading to the diagnosis of pneumonia. The most trustworthy sign was elicited by palpation and by the greater resistance to percussion in pleurisy. Pleurisy might in the beginning be mistaken for acute indigestion, later for an enlarged spleen, and for tumor of the kidney. The distinction between pleurisy and subdiaphragmatic abscess was very difficult. Pleurisy might also be mistaken for pancreatitis, appendicitis, peritonitis, or an acute attack of gallstones. Pericardial and pleural effusions might be con-

founded. The greater dyspnea in the former and the presence of Grocco's sign in the latter were helpful aids. Pleural effusions, even of large size, might not cause shortness of breath; a case had been cited in which with a quart of fluid in the chest the respirations varied from 12 to 14. The diagnosis of pleurisy with effusion was incomplete without the determination of the cause. A large proportion, sixty-five to eighty-five per cent., were tuberculous. The tuberculous nature, in practice inferred rather than proved, might be established positively in a variety of ways, which were described at length in the paper. The treatment concerned itself mainly with tapping, which was compulsory when the chest was dangerously full, when pressure symptoms were pronounced, and in large bilateral effusions. In effusions of medium size the speaker advocated early tapping, believing that it shortened the duration of the disease and lessened the danger of compression of the lung. The place and method of tapping were discussed.

Dr. ANDERS thought we could not too strongly emphasize the fact that a physical exploration should be made in empyema. His experience had led him to think that we attached perhaps too little importance to the condition of tenderness to pressure and the presence of friction following pneumonia in the absence of the usual signs of pleural effusion. Regarding tapping, it was perfectly safe to remove all the fluid if it was done sufficiently early, but in long standing cases the sudden removal of all the fluid was followed often by very disastrous results.

Dr. M. HOWARD FUSSELL, of Philadelphia, said that tapping in pleural effusion, he was inclined to think, should be done relatively early. Patients with a tendency to spontaneous disappearance of the fluid should not be tapped, though more than a week or ten days should not be allowed to elapse before tapping was done. It had been his habit to remove the fluid until coughing or symptoms of distress on the part of the patient occurred. All the fluid had usually been removed with no bad results in his hands.

A Lantern Slide Exhibit of the Lesions of Achondroplasia Fœtal.—Dr. M. HOWARD FUSSELL and Dr. HENRY K. PANCOAST, of Philadelphia, presented this paper. Dr. Fussell stated that achondroplasia was variously known as foetal rickets, foetal cretinism, and chondrodystrophy. It was the disease which was the cause of a certain type of dwarfism. The defect was in the growth of the cartilage cells and the disease was congenital. Only the bones which grew from cartilage were affected. Adults affected by the disease were rare. The diagnosis of rickets and cretinism was pointed out.

Dr. Pancoast explained the radiographic diagnosis. The most essential characteristic features in the diagnosis were: 1. Deficiency in development of the shafts of the long bones of the extremities, which were very short, both actually and relatively. They were also too thick for their length. This deficiency in epiphyseal development, together with the relatively better development of the epiphyseal extremities or ends, constituted the most characteristic radiographic feature. 2. The peculiar appearance of the hands and feet, arising from the same

causes. 3. The abrupt expansion of the diaphyses at their ends. 4. The abrupt bowing of the tibia and femur at the knee. 5. The characteristic appearance of the hip. 6. The tendency to symmetrical osteomatous growths from the bones of the upper extremities. 7. The characteristic appearance of the cancellous structure. 8. Deficient and irregular diaphyseal ossification and growth observed in infancy and early childhood, especially at the knee.

The Influence of Factory Inspectors upon Public Health.—Dr. HAROLD B. WOOD, of Philadelphia, said that more attention should be given to the magnificent opportunities which were in the hands of the State factory inspectors, who usually devoted their time and influence to socialistic work, whereas, considering the relative importance of provided duties, they should be strict sanitarians. There should be a revision of the subjects included in the annual reports, that the public might understand the actual benefit derived from such measures as dust protectors, machinery guards, protected water supply, and other sanitary arrangements ordered. There should be jurisdiction over all factory toilets, and not over only those situated within the building. Employers and employees must be instructed in the value of appliances used to prevent accidents and to eliminate dust. The protection of the water supplies should be partly entrusted to the factory inspectors. The duties properly belonging to sanitarians should be placed in the hands of medical men qualified in sanitation. These men should serve under the State Department of Health. Upon the factory inspectors would devolve the other duties, they being largely advisory mechanicians rather than sociologists.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Philosophy of Long Life. A Translation from the French of Jean Finot. By HARRY ROBERTS. London: John Lane; New York: John Lane Company, 1909. Pp. ix+308. (Price, \$2.50.)

This is a readable book, suggestive and replete with stimulating extracts from the philosophic and scientific writers of all time, but misleading and superficial. The author has ingeniously patched together a curious, optimistic, and materialistic theory of life which will be hardly satisfying to many of his readers. He begins with the mistaken assumption that there exists an all pervading and terrorizing fear of death which darkens the lives of mankind. Few physicians will agree as to the reality of this apprehension. We see people live and die holding many diverse opinions and beliefs, and others with none at all, and in the supreme moments of life and in the grand climacteric of death itself their behavior is much the same. Most men are probably as little conscious of their death as of their birth. The writer cherishes the hope that in the near future human life may be prolonged to 150 or 200 years, and for the consolations of religion he substitutes the physical principles of the indestructibility of

matter and the conservation of energy. These intellectual abstractions will afford little comfort, however, to the simple and timid souls for whom the thought of the annihilation of their personality is abhorrent. Some of the examples cited of extraordinary longevity will not stand critical analysis. Thus, the alleged case of the Norwegian peasant J. Gurrington, who, dying at the age of 160 years, left by his last marriage a son nine years old, whose eldest brother was 108, is certainly a myth. Gurrington is not a Norwegian name, and careful inquiry in Norway has failed to elicit any authentic source for this marvellous tale. The greatest age attained by a Norwegian was that of Anders Jakobsen Drakenberg, a roving soldier and sailor, who died at Aarhus, Denmark, in 1772, at the age of 134, having been born in 1638. In this case there are undoubted records of both his birth and death.

There is a gruesome chapter on the entomology of the grave. In the teeming myriads of bacteria and insect life attending putrefaction, the writer attempts to see a recrudescence of life and, singularly enough, finds in this a reason for denouncing cremation. There are other portions of the book which are whimsical and decadent. A leaning to the occult and a curious credulity as to the juggling of alchemy and artificial creation of homunculi are displayed by a writer who scornfully rejects, as unworthy of his intelligence, the mysteries of revealed religion. He is, however, apparently inclined to favor with his approval the remedy of King David for senility (First Book of Kings, Chapter 1). It is difficult to understand how this book has been taken seriously in France and has run through fourteenth editions in rapid succession.

The Thirteenth Greatest of Centuries. By JAMES J. WALSH, M. D., Ph. D., LL. D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine, etc. Second Edition. With Emendations and an Appendix. New York: Catholic Summer School Press, 1909. Pp. xvii-488.

We are glad to see a second edition of Dr. Walsh's interesting book. The subject is a very fascinating one, and was originally taken up by the author as a series of lectures in a Catholic summer school. It is Dr. Walsh's intention to demonstrate that instead of being a dark age the thirteenth century was in reality great in art and literature, science and handicraft, education and social life, law and medicine, commerce and inventions; while the nations were well guided by great rulers, politically and spiritually. How far the author has succeeded the reader must judge for himself. Dr. Walsh gives us a full review of the century. He speaks of universities and preparatory schools, postgraduate work at the universities, the students and their lives, architecture, arts and crafts; painting and bookwriting; libraries and literature, both of the world and of the church; poetry and prose; the drama; organized charity and hospitals; justice and legal development; democracy; Christian socialism, and nationality; great explorers and the foundation of geography; and the beginnings of modern commerce. Among the men to whom he calls special attention as representatives of the century are St. Francis Aquinas, Dante, and Louis IX, king of France.

In the appendix Dr. Walsh mentions on page 450

the eighteenth as the lowest of centuries. Could not this be the title of a new book from our author's pen? It would certainly be interesting reading and worthy of the labors of our genial writer.

Festschrift vid Tuberkuloskonferensen. I. Stockholm, 1909. Utgiven af Svenska Nationalföreningen mot Tuberkulos. Pp. 136.

In the beginning of 1904 was founded in Sweden a national society for the fight against tuberculosis. The year closed with 1,200 members, while the year 1908 brought the membership up to 22,000, quite a large number if it is taken into consideration that Sweden has only about 5,400,000 inhabitants. The aim of the society is to enlighten the people on the tuberculosis question and to teach hygiene, prophylaxis, and treatment. To do this a museum for tuberculosis was started in Stockholm, and lectures were held all over Sweden during four years. But the society intends not only to attack the white plague theoretically, but also practically, and for this purpose sanatoria have been founded, new hospitals have been opened, new wards have been added to old hospitals, and homes for children have been built.

The report before us gives great credit to the society and to the country. We hope Sweden will continue in its work, which places it in the foremost rank of the civilized nations' fight against tuberculosis.

Hauttuberkulose (Lupus vulgaris, etc.) einschliesslich Tuberkulide und Lupus erythematodes. Von Dr. S. JESSNER. Würzburg: A. Stuber, 1909. Pp. 76.

Dr. Jessner has become a well known writer. His booklets are practical, and when completed the series will form a good dermatological textbook. The present essay, part 21 of Volume III, treats of tuberculosis of the skin. The author speaks of military tuberculosis of the skin, tuberculous ulcers, fungous tuberculous disease, lupus vulgaris, tuberculosis verrucosa, scrofuloderma, tuberculides, and lupus erythematodes.

As with all of Dr. Jessner's books, it is practical, going into full detail of the therapeutics. We thus find many good descriptions which will make the book, written by a practitioner, readily acceptable by the practitioner.

Exercise in Education and Medicine. By R. TAIT McKENZIE, B. A., M. D., Professor of Physical Education and Director of the Department, University of Pennsylvania, etc. With 346 Illustrations. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 406 (Price, \$3.50.)

We are very glad to see this book. The physicians of Europe, especially of France, Germany, and Sweden, have made a specialty in the treatment of certain diseases by exercise for a considerable time, and good books have appeared in their languages on this subject. But there are very few works in the English tongue. The author rightly remarks in his preface that "exercise and massage have been used as remedial agencies since the days of Æsculapius, but definite instruction in their use has seldom been given to medical students."

The book is divided into two parts, Exercise in Education (thirteen chapters) and Exercise in Medicine (eleven chapters). From the headings of these two parts an idea can be gained of the contents of

the book. Among the subjects of the chapters in Part I we find massage and passive motions (Chapter III); exercise by apparatus (Chapter IV); the German, Swedish, and Japanese systems of gymnastics (Chapters V, VI, and VII); age, sex, and occupation (Chapter VIII); physical education and play grounds in schools, colleges, and universities (Chapters IX, X, and XI); physical education of the blind, deaf mutes, and mental and moral defectives (Chapters XII, XIII, and XIV). Part II takes up special exercises as applied in medicine: Flat foot (Chapter XV); round back, stooped and uneven shoulders (Chapter XVI); scoliosis (Chapters XVII and XVIII); diseases of the circulation (Chapters XIX and XX); obesity and other disorders of nutrition (Chapters XXI and XXII); nervous diseases (Chapter XXIII); and tabes dorsalis (Chapter XXIV). The author treats his subject very thoroughly, and the book can be well recommended to every practitioner; in fact, none should be without it.

Mind and Its Disorders. A Textbook for Students and Practitioners. By W. H. B. STODDART, M. D., F. R. C. P., Assistant Physician to Bethlehem Royal Hospital. With Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xiv-488. (Price, \$4.00.)

The author of this book has been successful beyond the common in presenting a succinct account of our present knowledge of mental disorders. For many years he has made the nature of nervous phenomena associated with mental disorders a matter of study, especially in the clinic. Many have attempted the same thing, but often without disclosing any great aptitude for the task. The mental equipment of Dr. Stoddart, however, as revealed by his book, is of a distinctly superior order. Both in power of analysis and in constructive ability he looms large in comparison with the tribe of writers on psychological subjects whose pompous nebulosity on the one hand and whose triteness on the other impose a distressful burden on the types.

The author has divided his work into three parts, the first dealing with normal psychology, the second with the psychology of the insane, while the third is devoted to the detailed discussion of mental disorders. At the end of the book, moreover, are two appendices, dealing with the methods of staining the nervous system and with the cytological examinations of the cerebrospinal fluid. "It has been," Dr. Stoddart avows, "my endeavor to induce the reader to think neurologically of mental processes." In consonance with this purpose, we find that he has given at the very inception of his task a condensed statement of the neurone theory and a scheme of the nervous system. Upon this follows an illuminating discussion of sensation and consciousness; perception and ideation; the various classes of ideas and their associations; the physical basis of emotions, passions, moods, and temperaments; different modes of action—reflex, instinctive, voluntary, and automatic; attention—its laws and varieties; fatigue and sleep; and so to the sentiments, language, and the ego.

In our opinion the author is at his best in this introductory division of his subject, for there is something ineffably stimulating in his thought and in his

manner; in truth, a sort of necromancy of exposition possible to those only who before setting pen to paper have thought their subject through. For convincing illustration consult the author's outgivings on perception and ideation (pages 26 *et seq.*) as well as subsequent paragraphs on amnesia and paramnesia (pages 120 to 126).

The classification of mental disorders adopted in the third section is in the main that of Kraepelin, although for purposes of simplification a few minor changes of nomenclature have been adopted. Throughout this portion of the work the same psychological aptitude and the same powers of lucid exposition are everywhere discernible.

Concise yet fluent, compact yet without shallowness, Dr. Stoddart's account of the disorders of the mind is, in our opinion, difficult to rival.

Neurasthenia. By GILBERT BALLET, professeur agrégé à la Faculté de Médecine de Paris, médecin de l'Hôtel Dieu, président de la Société de neurologie. Translated from the Third French Edition by P. Campbell Smith, M. D. Illustrated with Seven Pictures. New York: Paul Hoeber, 1909. Pp. xxviii-408. (Price, \$2.)

The abuse of the word "neurasthenia" is so notorious that Dr. Ballet deserves commendation for endeavoring to circumscribe its use within something like rational limits. By showing very explicitly what it is not, he is quite successful, we think, in showing what it is—as successful, indeed, as most observers could hope to be in a field where ultimate pathology is conspicuous by its absence.

Dr. Ballet has divided his book into seven parts. The first deals with the definition and nature of neurasthenia, the second and fourth with its causes, the third with the clinical forms of the affection, the fifth with prophylaxis, and the sixth and seventh with treatment. Each of these parts is adequately subdivided so that a rapid look into any one of them is greatly facilitated. Like so many of his countrymen, Dr. Ballet is endowed with fine gifts of lucid expression, gifts that are in no small degree the offspring of spontaneous, logical thinking. To Dr. Smith thanks are due for turning this interesting and helpful brochure into good idiomatic English.

Clinical Lectures on Neurasthenia. By THOMAS DIXON SAVILL, M. D., Lond., Physician to the West End Hospital for Diseases of the Nervous System, London, etc. Fourth Edition. London: Henry J. Glaiser; New York: William Wood & Co., 1908. Pp. xv-226.

Lectures on Hysteria and Allied Vasomotor Conditions. By THOMAS DIXON SAVILL, M. D., Lond., Physician to the West End Hospital for Diseases of the Nervous System, etc. New York: William Wood & Co.; London: Henry J. Glaiser, 1909. Pp. xiii-262. (Price, \$2.50.)

Dr. Savill's lectures are now well known to the profession, especially those dealing with neurasthenia, a fourth edition of which has now been printed. Clothed in a style at once simple, forceful, and direct, it is easy to account for their vogue among physicians, who, harried by the manifold cares of practice, are grateful to an author who carries the mind forward with a minimum of stress.

It is unfortunate that there should exist among writers on neurology such a disparity of views as to what should be included under the name "neurasthenia." Twenty years of analysis and sifting have been followed by unmistakable advances in classi-

fication and management, but much still remains to be done. At times Dr. Savill seems to us to have included too much; at others, his subdivision strikes one as being a bit overdone; on the whole his treatment is distinctly favorable to orderly assimilation.

The same qualities that distinguish his lectures on neurasthenia are discernible in those dealing with *hysteria*. To treat convincingly, as Dr. Savill has done, of an affection so protean; to expound plausibly a theory of causation that, if inadequate in ultimate proof, at least serves to rationalize the symptoms—these, moreover, finding their expression in a style singularly free from nebulosity—to do this, we repeat, is to entitle the author to both gratitude and praise.

Manual of the Diseases of the Eye. For Students and General Practitioners. By CHARLES H. MAY, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, etc. Sixth Edition, Revised. With 362 Original Illustrations, Including 22 Plates, with 62 Colored Figures. New York: William Wood & Co., 1909. Pp. vi-391. (Price, \$2.)

A textbook which has passed through five editions in a comparatively short space of time, and which has been translated into practically every modern language, no longer requires a critical review. May's handbook is one of the best of the smaller guides and the smallest of the best guides, and this largely explains its popularity. The clear, succinct, and yet sufficiently ample text, the excellent and copious illustrations, of which there are no fewer than 362, including sixty-two colored figures, further add to its value. The work has become a standard and is the choice, both of faculty and students, in many medical schools at home and abroad.

A Textbook of Experimental Psychology. By CHARLES S. MYERS, Lecturer in Experimental Psychology in the University of Cambridge, Professor of Psychology in King's College University of London. With 66 Figures and Diagrams. New York: Longmans, Green, & Co., 1909. Pp. xvi-432.

That the cleavage sometimes assumed to exist between general and experimental psychology is largely fanciful sufficiently appears when we bear in mind that a knowledge of the elements of the first is essential to the rational prosecution of the second; while acquaintance with the physiologically important structures of the nervous system is an indispensable prerequisite to the understanding of either. To speak, therefore, of experimental psychology as the "new" psychology is clearly to misstate its function, which, while clarifying, is in the main supplementary to the general science of mental operations. Moreover, it must not be forgotten that in the study and interpretation of sensation, at least experimental psychology and physiological psychology are absolutely beholden to each other. The like, however, cannot be said of comparison, memory, and mental work, in regard to which experimental psychology has already achieved important discoveries. Here physiological basis is lacking.

Much attention has been devoted by the author to sensation, his experience having taught him that in this field lies the best training for the beginner. This fact leads him to fear that he may not have treated with adequate fulness the experimentation

pertaining to the higher faculties. We have not found it so, his chapter on memory, for instance, being in our opinions one of the best.

Exigencies of space will not permit of a discussion of the elaborate methods invoked by experimental psychology. These have been treated in great detail by Dr. Myers, who has, moreover, greatly enhanced the value of his book by the addition of a series of practical exercises. An elaborate table of contents, supplemented by an index, helps to ready reference. Those who are interested in the comparatively young science of experimental psychology—and they are many—will find this volume a guide both illuminating and practical. In gathering the material, much of it widely distributed and some of it practically inaccessible to the general reader, Dr. Myers is entitled to gratitude.

MEDICOLITERARY NOTES

Admiration of very fat women seems to indicate an uneducated taste; savages usually demand corpulent spouses. Some of our older readers may remember the popularity of the unwieldy British blondes in our earlier days of musical shows; the pendulum has swung so far in the opposite direction that the type of chorus girl now in demand is of the pocket Venus variety known as the broiler. Probably our taste has been formed by education in physiology and hygiene. Neither overfed nor underfed women are likely to become mothers. The Roman matrons abhorred a bulky bust; we note in Terence: *Nostræ virgines—si bono habitu sunt, matres pugiles esse aiunt et cibum deducunt*; if our girls are of full habit, their "mammæ" call them prize-fighters and cut down their food.

The latest baritone to visit our benighted shores gives out the following to our amiable newspapers:

To be able to understand the motives, the feelings, the emotions of another human being is in itself a gift that is given to the few. . . . You must be able to give that understanding out, in other words, to express it intelligently to an audience; that is art. You must be able to put yourself into the same frame of mind, the same train of thought as was the poet when he wrote the words. Then when you have put yourself under his skin, so to speak, you are able to understand the words in their every import, you take upon yourself the psychology of the poet; and you are, in a sense, his other self. . . .

Having given some study both to voice production and to the artistic expression of emotion—which has its conventional methods like other arts—we can find only one possible exclamation. It is a word of highly rodent connotations and would disfigure this dignified column, if set forth in cold type. Art is simulation, and to be perfect demands the exclusion of emotion. Does the artist drop tears into his colors? The mad scene of Lucia would be entertaining indeed if the soprano had the *globus hystericus* or other still more unpleasant symptoms of real madness. Were the librettist and composer both also mad when they devised this wonderful scene?

The largest scrapheap in the world, according to *American Industries*, for October, is in San Francisco, a relic of the earthquake and fire. It would be surpassed if all save the latest editions of medical books were gathered together.

NEW PUBLICATIONS.

von Krehl, L.—J. v. Merings Lehrbuch der inneren Medizin. Bearbeitet von Prof. Dr. D. Gerhard, Basel; Prof. Dr. Gumprecht, Weimar; Prof. Dr. His, Berlin; Prof. Dr. Kraus, Berlin. Sechste, teilweise umgearbeitete Auflage. Mit 6 Tafeln und etwa 250 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 14 M.)

Strasburger, J.—Einführung in die Hydro- und Thermotherapie. Mit 46 Abbildungen im Text. Jena: Gustav Fischer, 1909. (Price, 5 M.)

Strasburger, E.; Jost, L.; Schenck, Heinrich; Karsten, George.—Lehrbuch der Botanik für Hochschulen. Zehte, umgearbeitete Auflage. Mit 782 zum Teil farbigten Abbildungen. Jena: Gustav Fischer, 1909. (Price, 8 M.)

Lejars, Félix.—Traité de chirurgie d'urgence. Sixième édition, entièrement refondue. Avec 994 figures dans le texte et 20 planches hors texte. Paris: Masson et cie, 1909. Pp. viii-1185. (Price, 30 fr.)

Jeanseme, E.—Précis de pathologie exotique. Avec 160 figures dans le texte et 2 planches hors texte en couleurs. Cartonné, toile souple. Paris: Masson et cie, 1909. Pp. xii-809. (Price, 12 fr.)

Prenant, A.; Bouin, P.; et Maillard, L.—Traité d'Histologie. Tome I: Cytologie générale et spéciale. Avec 791 figures dans le texte dont 172 en plusieurs couleurs. Paris: Masson et cie, 1909. Pp. xxiv-977. (Price, 50 fr.)

Martinet, A.; Mougeot, A.; Desfosse, P.; Durey, L.; Ducrocquet, C.; Delherm, L.; Domini, H.—Les Agents physiques usuels. Climatotherapie, hydrotherapie, crénotherapie, thermotherapie, methode de Bier, kinesiotherapie, electrotherapie, et radiotherapie. Avec 170 figures dans le texte et 3 planches hors texte. Paris: Masson et cie, 1909. Pp. xv-633. (Price, 8 fr.)

Lacassagne, A., et Martin, Etienne.—Précis de médecine légale. Deuxième édition, entièrement revue. Avec 112 figures dans le texte, et 2 planches hors texte, en couleurs. Cartonné, toile souple. Paris: Masson et cie, 1909. Pp. xxiv-865. (Price, 10 fr.)

Boraduc, Bernard, Binet, Cottet, Piotot, Sersiron, Simon, et Tardif.—Clinique hydrologique. Bibliothèque de thérapeutique clinique. Paris: Masson et cie, 1909. Pp. x-636. (Price, 7 fr.)

Poirier, Paul, et Baumgartner, Amédée.—Précis de dissection. Deuxième édition, revue et augmentée. Avec 241 figures dans le texte. Cartonné, toile souple. Paris: Masson et cie, 1909. Pp. xxiii-360. (Price, 8 fr.)

Calot, F.—L'Orthopédie indispensable aux praticiens. Deuxième édition, revue et augmentée. Avec 855 figures originales dans le texte. Cartonné toile. Paris: Masson et cie, 1909. Pp. 742. (Price, 16 fr.)

Ribemont-Dessaignes, A.—Iconographie obstétricale. Publication qui comprendra dix fascicules. Fascicule III, comprenant 12 planches en couleurs. Paris: Masson et cie, 1909. Pp. 50. (Price, 12 fr.)

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending October 29, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
California—Gen. rel.	Aug. 25-31	1	2
Connecticut—Bridgeport.	Sept. 26-Oct. 2	1	
Georgia—Macon.	Oct. 24-8	3	
Illinois—Chicago.	Oct. 7-9	1	
Indiana—Allen County.	Aug. 13-17	28	
Indiana—St. Joseph County.	Aug. 13-17	1	
Massachusetts—Boston.	Oct. 9-16	1	
Montana—Butte.	Oct. 1-14	12	
New York—Rundell.	Oct. 9-11	1	
North Carolina—Nine counties.	Aug. 9-11	1	
Ohio—Dayton.	Oct. 10-16	37	
Ohio—Springfield.	Oct. 9-16	9	
Washington—Seattle.	Aug. 1-31	6	
<i>Smallpox—Foreign.</i>			
Austria—Bohemia.	Sept. 26-Oct. 2	2	
Brazil—Bahia.	Aug. 28-Sept. 24	43	28
Egypt—Cairo.	Sept. 10-16	1	2
France—Paris.	Sept. 29-Oct. 2	1	

Places.	Date.	Cases.	Deaths.
Italy—Bologna.	Aug. 23-31	11	5
Malta—Valletta.	Sept. 1-18	1	1
Mexico—Mexico.	Oct. 9	1	3
Portugal—Lisbon.	Sept. 12-Oct. 2	3	
Russia—Riga.	Sept. 27-Oct. 2	3	
Russia—St. Petersburg.	Sept. 1-25	24	11
Siam—Bangkok.	June 1-30	2	2
Spain—Barcelona.	Sept. 28-Oct. 4	3	
Spain—Hirova.	Aug. 23-31	2	2
Spain—Vigo.	Sept. 26-Oct. 2	3	1
<i>Cholera—Foreign.</i>			
China—Amoy.	Aug. 20-Sept. 4	17	
China—Hankow.	Sept. 5-11	5	
China—Shanghai.	Sept. 5-11	1	Present
China—Soochow.	Aug. 28	3	2
India—Bombay.	Sept. 15-20	1	
India—Calcutta.	Sept. 15-20	6	
India—Rangoon.	Sept. 5-11	3	
Korea—Seoul.	To Sept. 25	400	
Manchuria—Peking.	Sept. 5-8	18	14
Netherlands—Lopik.	Oct. 2	1	
Netherlands—Hilversum.	Oct. 2	1	
Philippines—Samar.	Sept. 28-29	20	13
Philippines—Islands—Davao.	Sept. 1-10	304	248
Samoa—Dunbar.	Aug. 1-2	6	6
<i>Yellow Fever—Foreign.</i>			
Brazil—Bahia.	Aug. 28-Sept. 17	6	3
<i>Plague—Foreign.</i>			
Brazil—Bahia.	Aug. 26-Sept. 24	11	8
China—Amoy.	Aug. 26-Sept. 4	47	
India—General.	Sept. 5-11	2,040	2,040
India—Calcutta.	Sept. 5-11	1	
India—Rangoon.	Sept. 5-11	1	
Japan—Kobe.	Sept. 1-10	2	2
Manchuria—Peking.	Aug. 9-12	3	2

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending October 27, 1909:

AMESSE, J. W., Passed Assistant Surgeon. Granted two months' leave of absence from November 1, 1909.

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Marietta and Philadelphia, Pa., and New York, N. Y., upon special temporary duty.

BAILEY, C. A., Acting Assistant Surgeon. Granted three days' leave of absence from October 19, 1909.

CARTER, H. R., Surgeon. Directed to proceed to Fort Wayne, Ind., upon special temporary duty.

FOSTER, M. H., Passed Assistant Surgeon. Granted fifteen days' leave of absence en route home.

HASSELLTINE, H. E., Assistant Surgeon. Granted seven days' leave of absence from October 25, 1909, under paragraph 191, Service Regulations.

JACKSON, JAMES M., Jr., Acting Assistant Surgeon. Granted twenty days' leave of absence from November 8, 1909.

LONG, J. D., Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty, stopping en route at Columbia S. C.

LUMSDEN, L. L., Passed Assistant Surgeon. Detailed to represent the Service at the Annual Conference of Sanitary Officers of the State of New York, to be held in Rochester, N. Y., November 10 to 12, 1909.

MIRANDA, R. U. LANGE, Acting Assistant Surgeon. Granted one month's leave of absence from October 8, 1909, without pay.

NYDEGER, J. A., Surgeon. Leave of absence granted for one month and seven days from September 10, 1909, amended to read one month and five days from September 10, 1909.

PARKER, H. B., Passed Assistant Surgeon. Granted three days' leave of absence from October 20, 1909, on account of sickness.

SIMPSON, FRENCH, Assistant Surgeon. Relieved from duty on the Revenue Cutter *Perry*, and directed to proceed to San Francisco, Cal., and report to Surgeon Rupert Blue for duty.

SPOHN, A. E., Acting Assistant Surgeon. Leave of absence granted for two months from September 1, 1909, without pay, amended to read one month from September 1, 1909, without pay.

SPRAGUE, E. K., Surgeon. Leave of absence granted for sixteen days from October 8, 1909, amended to read seven days from October 8, 1909.

THOMPSON, W. R. P., Acting Assistant Surgeon. Granted ten days' leave of absence from November 1, 1909.
WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from October 22, 1909, on account of sickness.
WOLLENBERG, R. A. C., Assistant Surgeon. Directed to report to the medical officer in temporary charge, at Detroit, Michigan, for temporary duty.

Board Continued.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., November 8, 1909, for the purpose of making a physical examination of two officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon C. W. Vogel, chairman; Passed Assistant Surgeon G. L. Collins, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 30, 1909:

COFFIN, H. L., First Lieutenant, Medical Reserve Corps. Relieved from active duty in the service of the United States, November 9, 1909.

DELANEY, M. A., Captain, Medical Corps. Ordered to report for examination for promotion at Washington, D. C.

DEWITT, WALLACE, Captain, Medical Corps. Granted an extension of one month, twenty days to leave of absence.

DUNCAN, W. A., Captain, Medical Corps. Ordered to the Walter Reed Army General Hospital, Washington, D. C., for observation and treatment.

HARRIS, J. R., Captain, Medical Corps. Granted leave of absence for one month.

KOYLE, F. T., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, upon arrival at station in the United States.

LEMMON, ROBERT, First Lieutenant, Medical Reserve Corps. Ordered to sail for Philippine service January 5, 1910, instead of November 5, 1909.

PHALEN, J. M., Captain, Medical Corps. Granted leave of absence for two months, when relieved from duty in the Philippines.

SHERWOOD, J. W., First Lieutenant, Medical Reserve Corps. Ordered from Fort Williams, Me., to Fort McKinley, Me., for temporary duty.

VAN HORN, J. B., First Lieutenant, Medical Reserve Corps. Ordered to active duty and will proceed to Fort Mackenzie, Wyo., for duty.

VAN KIRK, H. H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for seven days.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 30, 1909:

BEYER, H. G., Medical Inspector. Ordered to duty at the Naval Medical School, Washington, D. C.

BYRNES, J. C., Medical Inspector. Ordered to command the Naval Hospital, Naval Station, Narragansett Bay, R. I.

DYKES, J. R., Passed Assistant Surgeon. Detached from the *Mayflower* and, when discharged from the Naval Hospital, New York, N. Y., ordered to the Naval Medical School Hospital, Washington, D. C., for duty.

GLASS, C. T., Passed Assistant Surgeon. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the *Mayflower*.

HORN, W. S., Passed Assistant Surgeon. Detached from the *Philadelphia* and granted sick leave for three months.

RIGGS, C. E., Surgeon. Ordered to the Naval Academy.

The following have been commissioned passed assistant surgeons in the Medical Corps of the United States Navy: Haynes, J. P., from April 16, 1909; Kuder, W. S., from March 24, 1909; Allen, J. B., from July 14, 1908; Raison, T. W., from June 1, 1909; Randall, R. C., from November 24, 1908; Reed, T. W., from September 21, 1909; Strite, C. E., from September 27, 1909; Wain, G. K., from March 2, 1909.

Births, Marriages, and Deaths.

Born

ROBINOVITZ.—In Brooklyn, N. Y., on Saturday, October 23d, to Dr. Samuel Robinovitz and Mrs. Robinovitz, a daughter.

Married.

BOYD-SNEE—CLINTON.—In Chicago, on Monday, October 18th, Dr. Henry Boyd-Snee and Miss Frances Clinton.

HALL—GANTZ.—In Vincennes, Ind., on Thursday, October 21st, Dr. Silas Hall and Mrs. Anna A. Gantz.

KITCHEN—ROBERTS.—In Escanaba, Michigan, on Saturday, October 23d, Dr. A. S. Kitchen and Miss Ethel Roberts.

PRATT—THOMPSON.—In Andover, Massachusetts, on Saturday, October 23d, Dr. Joseph Henry Pratt, of Boston, and Miss Rosamond Means Thomson.

STOLOFF—ROTHSTEIN.—In New York, on Sunday, October 17th, Dr. Benjamin Stolloff, of Brooklyn, and Miss Emma Rothstein.

WOOD—BEN OHIEL.—In Ann Arbor, Michigan, on Wednesday, October 20th, Dr. Charles Edwin Wood and Miss Lily Ben Ohiel.

Died.

ADAMS.—In Chicago, on Tuesday, October 12th, Dr. O. G. W. Adams, aged sixty-seven years.

BOOTH.—In Los Angeles, California, on Thursday, October 21st, Dr. James Pinckney Booth, aged sixty-two years.

BOYKIN.—In Chicago, on Friday, October 22d, Dr. Thomas Boykin, formerly of Baltimore, aged eighty-three years.

BRUCK.—In Newark, New Jersey, on Monday, October 18th, Dr. Max Bruck, aged thirty-six years.

CAMJUS.—In New York, on Thursday, October 28th, Dr. Josiah Camjus, aged ninety years.

CORLISS.—In Portageville, Missouri, on Wednesday, October 20th, Dr. J. E. Corliss, aged forty-five years.

EATON.—In Milford, Massachusetts, on Thursday, October 21st, Dr. John M. Eaton, aged seventy-seven years.

ELLIOTT.—In Livingston, Staten Island, New York, on Tuesday, October 26th, Dr. Samuel R. Elliott, aged seventy-three years.

ENGERT.—In Rochester, New York, on Thursday, October 21st, Dr. George A. Engert, aged forty-two years.

HEMSTREET.—In Canastota, New York, on Saturday, October 23d, Dr. Hiram Hemstreet, aged eighty-six years.

JORDAN.—In Newbern, Virginia, on Tuesday, October 19th, Dr. James B. Jordan.

KAHN.—In Coronado, California, on Monday, October 18th, Dr. S. S. Kahn, of San Francisco, aged fifty-four years.

KIDDER.—In Malden, Massachusetts, on Wednesday, October 27th, Medical Director Benjamin Harrison Kidder, United States Navy, retired.

LOFTUS.—In Escanaba, Michigan, on Wednesday, October 20th, Dr. Harry H. Loftus, aged twenty-eight years.

MCCALLUM.—In Toronto, Canada, on Monday, October 25th, Dr. C. E. McCallum, of Midland, Mich.

MAXEDON.—In Bay St. Louis, Mississippi, on Saturday, October 23d, Dr. Oscar Maxedon, of Vincennes, Indiana.

OLDS.—In Baltimore, Maryland, on Thursday, October 21st, Dr. Lyman Condit Olds, aged eighty years.

PALMER.—In Buffalo, on Saturday, October 23d, Dr. Elmore Palmer, aged seventy years.

PARKER.—In Kansas City, Missouri, on Sunday, October 17th, Dr. P. B. Parker.

PERRY.—In Prentice, Wisconsin, on Wednesday, October 16th, Dr. Dane Perry, aged fifty-three years.

RASBACH.—In Mohawk, New York, on Wednesday, October 20th, Dr. George Peter Rasbach, aged fifty-six years.

SCOBEE.—In Kankakee, Illinois, on Monday, October 25th, Dr. W. E. Scobee, aged sixty-seven years.

SMITH.—In Oreahville, Ohio, on Saturday, October 16th, Dr. Roger Burton Smith, aged thirty-seven years.

STEEDMAN.—In Louisville, Kentucky, on Thursday, October 21st, Dr. William Cooke Steedman, aged forty-six years.

STUBBS.—In Merion, Pennsylvania, on Friday, October 22d, Dr. George Eastman Stubbs, aged sixty-nine years.

YOUNG.—In Haverhill, Massachusetts, on Wednesday, October 27th, Dr. L. J. Young, aged fifty-nine years.

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WHOLE No. 1615.

Original Communications.

HISTORICAL SKETCH OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

By FREDERICK P. HENRY, A. M., M. D.,
Philadelphia,

Honorary Librarian of the College of Physicians.

SUCCESSIVE HOMES OF THE COLLEGE.

The request for this sketch having doubtless been suggested by the removal to its magnificent building on Twenty-second street, it seems to the writer most appropriate to begin with an account of the successive homes of the College of Physicians of Philadelphia. For the first four years of its existence the college held its meetings in the University Building on the West side of Fourth Street below Arch. This was originally constructed in 1740 as a meeting house for the congregation of the celebrated preacher, George Whitefield. In 1749, through the influence of Benjamin Franklin, it was purchased and converted into an academy with the condition of partitioning off and reserving a room for itinerant preachers. The academy became famous. In 1765 the title was changed by charter to the College Academy and Charitable School of Philadelphia, and in 1791 it was incorporated as the University of Pennsylvania. In the academy building the college held its meetings until December 10, 1791, at which date it rented a room in the Hall of the American Philosophical Society on Fifth Street below Chestnut for three years and a half at a rental of thirty pounds for the entire period. Here the college continued to hold its meetings for more than fifty-three years.

The third abode of the college was a room rented from the Mercantile Library Company at the southeast corner of Fifth and Library Streets. For this, an annual rent of \$175, including attendance and heating, was paid and, to render this possible, the entrance fee was increased to \$15 and the annual contribution to \$5. Beginning with the occupancy of this room the minutes of the Proceedings are headed "Hall of the College," August 5, 1845."

The fourth home of the college was the Picture House, so called because it was expressly constructed for the exhibition of Benjamin West's famous picture of Christ healing the sick. It was in the grounds of the Pennsylvania Hospital on Spruce Street, midway between Eighth and Ninth Streets, and was leased by the college for the sum of \$250 a year. The first meeting in the Picture House was held on July 4, 1854.¹

For about nine years the college continued to meet in the Picture House. In the meantime a building fund committee had been started and was so successful in its efforts to obtain contributions that it was able to announce at the meeting of January 4, 1860, that a lot had been purchased on the northeast corner of Thirteenth and Locust Streets for \$10,867.93. On this site a two story building was erected,² and the college met in its own hall for the first time in March, 1863. This is the home

which the college has been obliged to abandon and no amount of luxury or magnificence can efface the memories with which it is associated. There are very few living fellows who signed the Constitution in the Picture House more than forty-five years ago.³ The present generation of fellows, with these exceptions, knows nothing except by

hearsay of any other home than the ugly red brick edifice at Thirteenth and Locust Streets, and although they might be loath to admit it, the writer is convinced that a subconscious affection for the old hall was the principal reason for the delay and vacillation of the decision to leave it.

The present home of the college on Twenty-second Street is said by those who can speak from personal knowledge to be the finest building of its kind in the world. It is 108 ft. by 150 ft., and the lot it occupies is considerably larger, 130 ft. by 184 ft. It is therefore abundantly supplied with light and air. The style of architecture is English of about the end of the seventeenth century. The material is dark red brick, laid Flemish bond, with basement, cornices, pilasters, and other trimmings

¹In 1893, the Picture House was torn down to make room for the new memorial wards.

²A third story was added in 1886.

³There is one still living whose fellowship dates from 1852 when the college held its meetings in the Mercantile Library building.



FIG. 1.—The University of Pennsylvania in 1787, the first meeting place of the College of Physicians of Philadelphia.

of Indiana limestone.* It is absolutely fireproof, and every convenience in the way of heating, ventilation, lighting, telephone communication, vacuum cleaning, electric lifts, pneumatic tubes, etc. are, as a matter of course, installed. The largest room which is intended solely for the meetings of the college, occupies a large section of the front of the second story and has a seating capacity of five hundred. It is appropriately called the Weir Mitchell Room in honor of the man to whose efforts the possession of the property is largely due and who, since his election in 1856, has been untiring in his devotion to the college, whose fame it shares and whom in honoring it therefore honors itself. *Quem nemo non parum amat etiam qui plus amare non potest.*

There are two other good sized lecture rooms, one of which may be divided into two by massive folding doors. The journal room and the reading room on the north and south sides of the building, respectively, and running parallel occupy the same amount of floor space, 60 ft. by 33 ft., but the reading room has much the higher ceiling, 25 ft., that of the journal room being but 14 ft. to permit of a mezzanine floor above it. The Weir Mitchell room was furnished by subscriptions from fellows of the college. The reading room is called the Ashhurst Room, in memory of the late Dr. John Ashhurst, Jr. and was furnished by Dr. Richard H. Harte. The periodical room is called the Norris Room in memory of the late Dr. William F. Norris, and was furnished by Mr. Charles Norris, Dr. George W. Norris, Mr. William Felix Norris, and Dr. George E. de Schweinitz. The north lecture room on the first floor is the Cadwalader Room in memory of Dr. Thomas Cadwalader, and was furnished by Mrs. Weir Mitchell. The south lecture room on the first floor is the Thomson Room, in memory of the late Dr. William Thomson, and was furnished by members of his family. The committee room on the ground floor known as the Gross Library was furnished by the family of the late Dr. S. D. Gross and Dr. J. Ewing Mears.

Of the quarters allotted to the Mütter Museum nothing more need be said than that the committee in charge of that department of the college is thoroughly satisfied with them.

The book stacks are in the rear of the building and have space for 300,000 books with ample room for extension, so that the youngest fellow of the college need not anticipate the discomfort and expense of another removal during his lifetime.

A feature of the new building is a number of small rooms for special research in which the student may have absolute privacy and be practically the owner of the room during the period of his investigation.

This is but the barest outline of the interior of the new building, the beauty of which beggars any descriptive powers at the writer's command.

ORIGIN AND FOUNDERS OF THE COLLEGE.

The official birthday of the college is January 2, 1787, that being the date of the first minutes of its proceedings. It is clearly evident, however, from

the inaugural address of Dr. John Redman, the first president, that at least two meetings had been held before that time. The period of incubation is even longer than this statement would seem to indicate for, in 1783, suggestions for the founding of an American College of Physicians are to be found in the correspondence of Dr. Samuel Powell Griffiths, of Philadelphia, and Dr. John Coakley Lettsom, of London.

The founders of the college were composed of twelve senior and an indefinite number of junior fellows, of which the former were alone eligible to office. The ranks of the seniors were to be recruited from the juniors who, therefore, formed a kind of waiting list and were obliged to run the gauntlet of two elections before being accorded the privileges of senior fellowship. This distinction between seniors and juniors was short lived, although there is no record in the original minutes of the college, of its abolition. In the Charter, Constitution, and By-laws of the College of Physicians of Philadelphia, printed in 1790 by Zachariah Poulson, Article 1 reads: "The college shall consist of fellows and associates."

When the college was founded there was, in addition to the twelve senior fellows, an equal number of junior fellows, and the names of these founders are inscribed on a marble tablet in one of the corridors of the new building. Of the original twelve senior members five were graduates of the University of Edinburgh, one of the University of Leyden, and one of the University of Rheims, while at least three others had continued their studies in Europe before settling in America. They were evidently men of decidedly superior standing both as physicians and citizens.

FUNCTIONS OF THE COLLEGE.

The functions of the college may be, to a great extent, negatively defined by the statement that it is not a teaching institution and has no power to confer degrees. The title "college" in the ordinary, modern acceptance of the word is therefore a misnomer and somewhat misleading, as proved by the frequent requests for a circular or catalogue. It is a *collection* (college) of physicians who hold monthly meetings at which papers on medical, surgical, and allied topics are discussed and, for the most part, subsequently published in the annual volume of *Transactions*. The first part of volume I of the *Transactions* was published in 1791. During the yellow fever epidemic of 1798 a pamphlet entitled *Proceedings of the College of Physicians Relative to the Prevention of the Introduction and Spreading of Contagious Diseases* was issued and another, in 1800, entitled *Facts and Observations Relative to the Nature and Origin of the Pestilential Fever which prevailed in this City in 1793, 1797, and 1798*. No further *Transactions* were published until November, 1841, from which date they have been published continuously. Between 1857 and 1874 they were published in the *American Journal of the Medical Sciences*, the College being supplied with an adequate number of separate copies. Since 1874 they have been issued independently.

* *American Architect*, December 9, 1903.

It has been more than once proposed by fellows who, it is scarcely necessary to say, are not members of the library committee, to discontinue the publication of the *Transactions*. Such proposals are not unwelcome to the committee in question for they afford an opportunity of proving the immense value of the *Transactions* as a medium of exchange apart from their intrinsic scientific value. Through the *Transactions* exchanges have been effected with the principal Universities of Europe of which the theses form one of the most interesting and important features of the library.

In the early period of its history the college took a prominent part in the discussion of matters relating to the public health. It was consulted by the

self evident that, through its numbers alone, this is the representative body of the medical profession in Philadelphia. Again, most of the fellows of the college are members of the County Society, and when a subject involving public action is brought before the college it will generally be found that it has already been discussed by the County Society and referred to its standing Committee on Public Policy and Legislation. There are other societies also, such as the Medicolegal Society and the Medical Jurisprudence Society, which make a specialty, so to speak, of discussing matters of public policy. It is but natural, therefore, that the subjects in question should have been relegated to or usurped by, the last mentioned bodies, and it is



FIG. 2.—The College of Physicians of Philadelphia; the new building dedicated November 10, 1909.

Legislature in 1789 concerning the prevention of the spread of infectious diseases. It addressed the mayor on the same subject in 1793, and in the year 1799 there were various interchanges of communication between the governor and the college on the subject of epidemic diseases. These are but a few of numerous examples which are necessarily omitted. Of late years, however, there has been a growing disinclination to take an active official part in public affairs and, at the present time, the policy of the college is to confine itself almost exclusively to its scientific business. This is readily and naturally explained. In the early days of the institution it was the representative body of the medical profession in Pennsylvania, and its gradual withdrawal from matters of public policy may be observed to be coincident with the rise and progress of the Philadelphia County Medical Society which to-day has a membership of more than twelve hundred. It is

equally natural that, in the process of evolution, the College of Physicians should have been converted into a strictly scientific body. It is a consummation which, in the opinion of the writer, would have been devoutly wished by its founders.

THE LIBRARY.

Instead of including the library under a separate heading, it might, with perhaps equal propriety, have been described as one of the functions of the college. The maintenance, administration and extension of the library are certainly to be ranked among its chief activities. The library, however, is too important, too independent, to be described as a mere function. Without it the college would never have attained its position as one of the learned societies of the world, nor Philadelphia its rank as a centre of medical research and instruction. The library has stimulated and even compelled progress.

It was to meet its imperative demands that the present hall was constructed.

This important collection, ranking among the first in the world, had its origin in twenty-four volumes presented by Dr. John Morgan in 1788. In November of the following year the president was authorized to expend fifty pounds for the purchase of books. Notwithstanding the interest in the library as evidenced by gifts of books and money, its growth for many years was remarkably slow. On June 7, 1836, the library committee reported that the library contained 291 volumes and some unbound pamphlets. From that time until 1843 very few volumes were added, and the library was "rarely if ever used." The purchase of the library of Dr. Otto in 1844 and the gift of more than 900 volumes by Dr. Thomas F. Betton in 1836 increased the number of books to about four thousand. In 1862 certain fellows of the college presented 192 volumes of French theses. The most important event in the history of the library was the gift of 2,500 volumes by Dr. Samuel Lewis in 1864. These books which were the origin of the Lewis Library had been carefully selected by Dr. Lewis who was an accomplished scholar and an ardent lover of books. For about twenty-five years he devoted the greater portion of his time to his library which, at the date of his death in 1890, contained more than 11,000 volumes. The choicest treasures of the library of the College of Physicians are to be found in the Lewis collection.

It is impossible in this article to mention all the names of those who have enriched the library by their gifts of books and money. It must suffice to refer to certain epoch making events. In 1884, the Samuel D. Gross Library, composed of 5,128 volumes, was presented as a permanent deposit. During the same year the library of the late Dr. H. Lenox Hodge was deposited and subsequently presented by his son. In 1896, a Library Endowment Fund was created which, in 1900, had reached the sum of fifty thousand dollars. In the same year the library received 6,963 theses and inaugural dissertations and exchanged publications with six foreign universities. These results were accomplished chiefly through the efforts of the then president of the college, Dr. W. W. Keen. In 1900 and 1901 the library received large and valuable collections of books from the estates of Dr. J. M. Da Costa and Dr. John Ashhurst, Jr. In April, 1901, the valuable collection of the late Dr. J. Stockton Hough was purchased. This was accomplished in large part by the aid of generous subscriptions from Dr. George Fales Baker, Dr. S. Weir Mitchell, and Dr. John K. Mitchell. From the standpoint of the bibliophile this is the most important addition that has ever been made to the library. In 1908, exchanges with the Faculté de Médecine de Paris were effected through the efforts of Dr. Keen and Dr. Osler on the one side, and Dr. A. J. Magnin and Dr. Louis Landouzy on the other. Through generous subscriptions by fellows of the college the files of Paris theses have been completed from 1882 to 1907—more than 850 volumes.

The report of the honorary librarian for the year ending November 1, 1900, contains the following facts and figures:

Number of volumes in the library.....81,018
Number of unbound reports and transactions, 8,202
Number of unbound theses and dissertations, 23,711
Number of unbound pamphlets.....7,213

Included in the number of volumes reported are 2,627 known as reserves, consisting of second copies of some of the more important periodical publications.

The library receives at the present time by purchase, in exchange, or as gifts from editors and publishers, 950 periodical publications including transactions and reports, and exchanges publications with twenty-two European universities and with the faculties of medicine of Brussels, Buenos Ayres, Nancy, Paris, Rio de Janeiro, and Toulouse.

Nothing, thus far, has been said concerning the quality of books in the library of the College of Physicians and it is scarcely necessary to do so as the collection is well known to medical bibliophiles throughout the world. Suffice it to say that at the present time the library contains 146 incunabula (fifteenth century books) some of which are among the rarest of these rarities. There are numerous other books, not incunabula, but equally rare and valuable of which the 1628 Harvey, *de Motu cordis et sanguinis* is, perhaps, the most conspicuous example. An important feature of the library is its collection of prints, photographs, busts, paintings, and curios of all kinds, but none without a special medical interest. The busts and portraits which were crowded together "in most admired disorder" in the old building are now displayed to the best advantage in spacious, well lighted corridors and on the walls of lofty rooms.

The income of the library is in part derived from the interest of the following funds: Henrietta Rush Fales Baker Fund, Luther S. Bent Fund, William T. Carter Fund, John D. Griscom Fund, William F. Jenks Fund, Oliver A. Judson Fund, William V. and John M. Keating Fund, William W. Keen Fund, Library Endowment Fund, Weir Mitchell Fund, Elizabeth K. Newcomet Fund, William F. Norris Fund, Philadelphia Medical Society Fund, Lewis Rodman Fund, John F. Weightman Fund, Caspar Wistar Fund. In addition the college votes an annual appropriation of varying amount, in accordance with the estimated needs of the library; and, finally, the surplus earnings of the *Directory for Nurses* are devoted to its uses.

This account of the library, incomplete, as of necessity it is, would be much more so if the names of its principal benefactors were omitted. They are either already inscribed, or are to be inscribed, on tablets of which one contains the names of those who have subscribed \$10,000 or more; the other, the names of those who have subscribed at least \$5,000 and not more than ten. The first class of donors are known as eminent benefactors; the second as benefactors. The list is as follows: Eminent Benefactors: Andrew Carnegie, Frederick W. Vanderbilt, William W. Frazier, Clement B. Newbold, William H. Dunwoody, S. Weir Mitchell, Mrs. Frederick C. Penfield. Benefactors: Clement A. Griscom, George Woodward, George C. Thomas, Charles C. Harrison, William W. Keen, George Fales Baker, Eckley B. Cox, Miss Eliza Otto Caspar Wistar (bequest of Esther F. Wistar)

Lewis Rodman (gift of Mrs. Rodman), William F. Jenks, Mrs. William T. Carter, Jacob M. Da Costa.

THE MUSEUM.

The Museum was instituted in 1849 by motion of Dr. Isaac Parrish. In 1863, it was united with the collection of Dr. Thomas Dent Mütter, since which time it is commonly known as the Mütter Museum. The reason for this title is that the Mütter Museum is a trust under the management of the committee on the Mütter Museum and, since this committee has charge of the entire museum, its name has naturally been applied to the whole collection.

It was in a letter dated May 20, 1856, that Dr. Mütter offered his pathological museum to the college under certain stipulations which gave rise to considerable delay in its acceptance. One of these was the gift of \$30,000 on condition of the erection of a fireproof building; Dr. Mütter being unwilling to deposit his collection in any other. The officers of the college finally signed the agreement on January 8, 1850, and the fireproof building at the corner of Thirteenth and Locust Streets, the fifth home of the college, was completed in March, 1863.

In 1886, a spacious third story was added and in it the museum was placed. The cost of this addition was, in part, paid for by accumulated interest of the Mütter Fund.

The museum, with its wealth of specimens, of which the Hyrtle and Politzer collections are, perhaps, the best known, is an important feature of the college and a valuable adjunct to the regular courses in pathological anatomy in the medical schools.

The name of Mütter is, however, better known to the world at large through the lectureship which he founded, than through his museum. By the terms of Dr. Mütter's bequest, it was agreed that a lecturer should be appointed by the college, every three years, to deliver an annual course of not less than ten lectures on some subject connected with surgical pathology, the annual stipend of the lecturer being two hundred dollars. It has been found impossible to live up to this agreement and, with the sanction of the college, only one lecture is annually delivered at the present time. Some of the most distinguished surgeons in the United States have delivered a course of Mütter Lectures.

Many events of great interest and importance have been necessarily omitted in this bare outline of the history of the college. Among them is the celebration of its centennial anniversary on January 3, 1887. With the volume of *Transactions* for that year, generally known as the centennial volume, is bound a history of the college from its foundation, by the late Dr. W. S. W. Ruschenberger. This minute and interesting record is indispensable to every student of the college history and the writer takes this opportunity of acknowledging his indebtedness to it.

The following is a list of the presidents of the college since its institution.

John Redman, 1786; William Shippen, Jr., 1805; Adam Kuhn, 1808; Thomas Parke, 1818; Thomas C. James, 1835; Thomas T. Hewson, 1835; George B. Wood, 1848; W. S. W. Ruschenberger, 1879;

Alfred Stillé, 1883; Samuel Lewis, 1884; J. M. Da Costa, 1884; S. Weir Mitchell, 1886; D. Hayes Agnew, 1889; S. Weir Mitchell, 1892; J. M. Da Costa, 1895; John Ashhurst, Jr., 1898; W. W. Keen, 1900; H. C. Wood, 1902; A. V. Meigs, 1904; James Tyson, 1907.

114 SOUTH EIGHTEENTH STREET.

SOME NEW FIELDS AND METHODS IN PSYCHOLOGY.*

BY FREDERICK PETERSON, M. D.
New York.

Until the developments of the last few years psychology as ordinarily studied has always seemed to me a barren field of work. The subject itself should be infinitely inviting, since it deals with things that are highest among the phenomena presented to us in the outside world as well as in ourselves. I am sorry to say that the academic psychologists have made the subject of normal psychology very unattractive, and their volumes devoted to statistics of reaction times, the tridimensional theory of feeling, and researches with the plethysmograph, ergograph, sphymograph, etc., to determine effects of mind upon body, while compendia of dry facts of some ultimate value, are to me without charm. It is only recently that psychologists have begun to learn that real discoveries were to be made in normal psychology by a study of abnormal psychology, just as our greatest studies in physiology of the brain and viscera have been based upon studies of pathological variations of normal functions.

The general practitioner is brought into touch with morbid psychology much more frequently than he thinks, and it seems to me that more attention will be paid to this subject in the future than has ever been done in the past. He meets with few cases of insanity, to be sure, but hysteria, neurasthenia, and psychasthenia are common enough in general practice, and these conditions are much more often psychogenic than physical in origin. The general practitioner is prone to treat these cases objectively, to search for some physical tangible cause, and not finding it in eyes or nose or ears or throat or thyroid gland or stomach or colon or liver or uterus or ovaries, to fall back upon some other physical prop like autointoxication, which affords at least a basis for objective therapeutics, even if the real condition is as obscure under the new name as before.

This has been true for at least twenty-three centuries as a casual perusal of the works of Hippocrates will show, for medical art was well developed and material at that day, so material that a Thracian physician told Socrates (Plato's *Charmides*) that the Greek doctors were quite right as far as they went, but that the reason why the cure of so many diseases was unknown to the physicians of Hellas was because they considered a part and not the whole, that they separated the body from the mind.

The reason for this material organic therapy is plain, for it is quite true that the vast majority of

*Read at New York Clinical Society, October 22, 1909.

The paper was followed by a practical demonstration of the use of the mirror galvanometer of Deprez-d'Arsonval as a measurer of the emotions as discovered by Feré and Tarchanoff, rediscovered by Engineer Müller, and practically applied by the author and Dr. Jung and others in the study of emotional complexes in normal individuals, psychoneurotic persons, the insane, and criminals.

disorders, which often threaten life and are always the cause of death, are organic, physical and not mental. The mind is little concerned in most of these conditions, while the body is everything. In the course of our social evolution therefore it was natural that the most important objective phenomena in medical practice should take precedence over the functional, the obscure, the psychogenic.

Under morbid psychology I have just ranged insanity, hysteria, neurasthenia, and psychasthenia as conditions more or less frequently encountered by general practitioners, and in which we must treat both body and mind, and especially mind. To these should be added nervous children, who may later develop mental troubles, eccentric personalities tainted by morbid heredity, and a vast number of individuals that we call dis-equilibrates. There is a large catalogue of deliria, too, that needs much study and investigation, mental disorders in connection with drug habits, alcoholism, fevers, pneumonia, cerebral hæmorrhages and thromboses, tumors of the brain, and the like. All this amplifies the domain of morbid psychology, and I am by no means sure that the physician is not better equipped for the treatment of every kind of disease whether organic or functional if he considers the mind as well as the body in every case in his practice. This he has unconsciously done no doubt for ages, but I urge the conscious application of the principles of mental therapeutics to a greater degree than has been practised heretofore.

I just used the word "unconsciously" in quite a natural manner, as all of us do every day in reference to some of our expressions or actions, often with embarrassment or apology. But the word suggests a fascinating domain in psychology, viz., the unconscious, the coconscious, the subconscious, or the subliminal consciousness as it is variously called. I regret that I cannot be as brief as that Harvard professor, who recently, in a chapter on the subconscious, said that he could sum it up in three words—"there is none." Perhaps his quarrel is with the name. Surely the *facts* which the name sufficiently covers are patent enough to all of us. Of course we do not know anything about consciousness. We cannot tell what it is or how it operates in any terms of science. It takes possession of us a few hours each day, of some of us, not all, and some individuals seem to get along without it at times, without in any great degree abrogating their will, memory, instinct, intellect, or emotions. To such functioning of mind—outside of real consciousness—so familiar to all of us in absent mindedness, reverie, dreams, somnambulism, hypnotic states, epileptic automatism, etc., we rightly give the name subconsciousness, meaning thereby conscious action *under* full consciousness. The fact is too that the subconscious is vastly more important to us than the conscious, for in the subconscious lie all the elements that make up our personality, not only the treasury of all our individual experiences through the course of years, but all our ancestral trends, desires, tendencies, wills, ambitions, controls, inhibitions, fears, in fact the latent spirit of the race of mankind. The subconscious is altogether too large to be dismissed with three words of negation.

It is in this field that of late much that is new and

brilliant has been discovered. Psychology begins to read like a romance.

For instance, each man's vocabulary, be it the three hundred words of the sailor or the ten thousand words of a Shakespeare, or the average fifteen hundred to two thousand words belonging to us, is related to all that subconscious material. A word has a magic power in it to summon from the vaults of memory all sorts of apparitions. Each word has an emotional value, some more than others, because all of our deepest experiences are associated with the words we know.

So when I propound an apparently empty word to you and you quickly answer me with a word, I may not only obtain an association from your memory storehouse, but I may strike some emotional complex in you that will be shown in a slow response to the test word by retarded reaction time. This is the word association method of Jung, a method that is employed for the discovery of secrets in the criminal, or painful and disease producing emotional complexes in patients suffering from various psychogenic disorders. In making this test just ordinary, everyday words are used, since these are the especial words related to an ordinary individual's experiences, and a stopwatch is used to measure the reaction time. An emotional complex is so apt to have many words associated with it that there is an inrush of many words to the stimulus word, and the mind pauses for a choice; hence the retarded reaction time. Having gone over the list once with the stopwatch, we go over the same list of words again to see how well the first associations are remembered. The inrush of words is responsible for faulty memory here, and where there are emotional complexes, these reproductions are apt to be false, some new word being associated the second time.

Thus, a patient was given a series of unimportant words that had no significance whatever to the investigator, and among them the following had three or four times as long reaction time as the others, so that it was clear that an emotional complex lay behind them: Water—deep—5 seconds; ship—sink—3.4 seconds; lake—water—4 seconds; swim—can swim—3.8 seconds.

Psychoanalysis showed that the patient had recently been depressed and had determined to commit suicide by drowning.

The mention of psychoanalysis leads me to say something of the technique of this method as carried out by Freud who first developed it. The patient lies quietly on a sofa in order to be tranquil and avoid physical or other distraction. The physician sits at his head and may at times place his hand upon upon the patient's forehead, a physical stimulus which often assists the patient in concentrating his mind upon the matter in hand. The matter in hand may be and often is some emotional complex buried too deeply in the mind to be readily reproduced in consciousness, some emotional experience having a causal relation to a psychoneurosis. Perhaps the word association method has already been used, and clues are afforded by that for interrogation. The patient is urged to talk freely and frankly about his symptoms and their origin. The memory is found to be often at fault, and he is requested to tell everything that comes into his mind by free

association, even if painful or embarrassing. We may utter some significant word, known to be a clue, and ask him what thought occurs to him in connection with the word. We also may ask him to tell us his dreams and from these, which come from the subconscious, we also draw material for our purpose.

The object of such psychoanalysis is twofold. In the first place we uncover the details of some psychic trauma which is usually at the basis of all hysterical manifestations and of many psychoneurotic conditions such as obsessions, phobias, and the like, and may be the origin of some type of insanity like dementia præcox. In the second place it is a therapeutic procedure and the analysis generally cures the patient.

This requires amplification. There is a psychological mechanism associated with all painful unendurable emotions. Either the emotion is reacted to adequately at the time as in all normal grief or it is intentionally suppressed. The intentional suppression is helped by the wish and struggle to forget. If you receive an insult and knock a man down, this is an example of an adequate, a satisfactory reaction to a disagreeable emotion. If you are obliged to pocket the insult, which, by the way, is a very good expression for the mechanism in question, it will rankle indefinitely, perhaps for years, in your bosom, suppressed, possibly forgotten, but liable at any time to light up by sudden association of place or face or word. Suppose a child is assaulted, a young woman jilted on the eve of marriage, a young man overhears some jeering remark concerning himself—these are psychic traumata which without adequate reaction may become suppressed emotional complexes acting like a parasitic body on the psyche, drawing all sorts of associations to itself, and finally by a process of conversion may react upon the physical organism, inducing hysterical pains, anæsthesias, palsies, and the like. If by psychoanalysis we are able to reawaken the old painful memories and discuss them with full circumstance and detail with free play of the emotions the hysterical or other neurotic symptoms disappear. This *abreaction* or reacting off has for ages been taken advantage of by the confessional of the Catholic Church, those wise fathers long ago recognizing the psychological fact that a secret remorse, pain, or grief unburdened to another lifts the load from the penitent and suffering.

I think it was Schopenhauer who said insanity is a long dream and a dream is brief insanity. There is, in fact, more than a superficial resemblance between dreams and insanity, so much so that psychiatrists the world over are devoting themselves to the study of dreams as a part of their clinical and scientific work. There is indeed no phenomenon that presents itself in dreams that we may not observe among the inmates of an asylum ward. There are in both a prominence of visual and auditory hallucinations, a tendency to the reproduction of old experiences, the imaginary fulfilment of wishes and desires, baroque associations, chaotic flight of ideas, incoherence, disorientation, weakened judgment, and division of personality.

Sometimes insanity first manifests itself in dreams, though the mind is still normal by day. In

alcoholism dreams sometimes foreshadow the characteristic alcoholic delusions (of infidelity, etc.) and dreams may be the equivalents of epileptic seizures. Sometimes in patients just recovered from insanity who are normal by day, there is a nightly recurrence of insane delirium in sleep, a species of nocturnal insanity. A terrible dream may usher in insanity, which then concerns itself with the material created by the dream. Dreams at times induce the imperative ideas and impulses of psychasthenia. Thus in a way we may look upon insanity, in itself a pathological condition, as a summation of periodically recurring normal dreams, as a kind of reduction of consciousness, such as exists in the dream state.

Freud has written a fascinating book on the *Divination of Dreams*. I can only tell you briefly what his views are. In the first place dreams always seem to be the fulfillment of some wish or desire. In children this is invariably true, as you will find by a little investigation. The child receives in dreams the delights that he longs for. When a dream is recorded and examined we have before us a curious piece of conglomerate, often uniting materials from the days of childhood with experiences of yesterday, full of absurd distortions of events and words, transformations, allegories, and symbols. There is nothing accidental in the arrangement, and by psychoanalysis of the person having the dream one determines the origin of every patch in the crazy-quilt, and by investigation one discovers the wish at the foundation which is directly or indirectly fulfilled by the dream. Freud has been much criticized because in his opinion it is usually a sexual idea which is the *fons et origo* of these dreams as well as of hysteria and other psychoneuroses. He is, perhaps, extreme in this opinion but we might grant him half, since, roughly speaking fifty per cent. of the trends, wishes, desires, that inspire our activities are for the perpetuation of the species and fifty per cent. for self preservation.

Freud is responsible, too, for two delightful brochures, one on the *Psychology of Wit* and the other on the *Psychopathology of Everyday Life*. When one has mastered the latter he becomes a sort of psychic Sherlock Holmes, and spends much of his time in detecting and unravelling the purposes of the subconscious in his friends who absent mindedly say "yes" when they mean "no," or whistle some melody in tune with subconscious ideas, or show a prejudice which can be traced to some old unpleasant emotion, or forget a name or word associated with a disagreeable person or effect. For there are determination and law at the bottom of all this. Nothing goes on haphazard in the soul. Thoughts and names of persons and things are intentionally suppressed from consciousness, forgotten, when they are unpleasant or painful, which is a normal psychological mechanism advantageous to the organism.

Since ideas, whether conscious or subconscious, tend to action it is not surprising that the subconscious trend of thoughts often reveals itself in movements of the face, fingers, hands, feet, or in attitudes. Hence the psychic Sherlock Holmes will often interpret what the subconscious of his friends is thinking about from the symbolical movements and attitudes shown by them.

I regret that I have but just touched the surface of things in telling you about this new psychology, but in a paper of this kind which must necessarily be brief I thought it wiser to simply indicate the general directions we are now taking without going

fore belongs to Keetley whose description of it antedates my first operation.

However, if two persons undertake a similar task independently of each other, one can assume *a priori* that the methods by which they attain their end will not be identical. And, true enough, when I looked up Keetley's publication, I found that our methods differed not only in a number of details but even in some essential points. They really represent two different methods of accomplishing a similar object, and as I believe that my technique, although perhaps somewhat more difficult, ensures more perfect results, I feel impelled to publish it.

The operation is performed in the following manner: The testicle is exposed through an incision over the inguinal canal (Fig. 1). The aponeurosis of the external oblique muscle is split to the same extent as in the operation for inguinal hernia, for without a sufficient exposure of the inguinal canal it is not possible to dissect out the cord in that exact manner which a proper performance of the operation necessitates. Now, testicle and cord are freed from all their coats. As

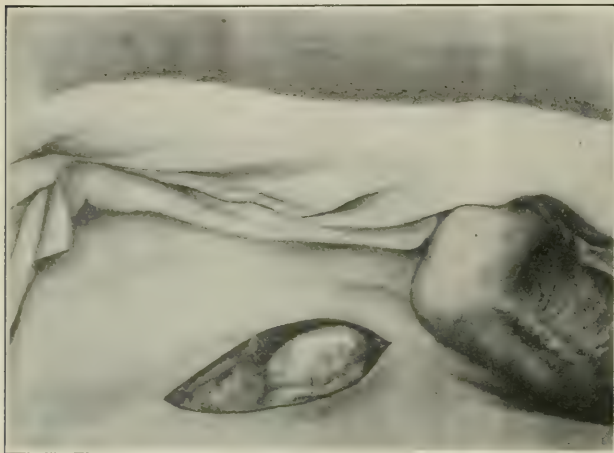


FIG. 1.—The testicle is exposed through an incision over the inguinal canal.

too deeply into the rather puzzling details of psychological mechanisms each of which might well take hours of explication and illustration.

20 WEST FIFTIETH STREET.

THE TECHNIQUE OF ORCHEOPENY.*

BY FRANZ TOREK, A. M., M. D.,
New York,

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In 1905 Keetley published a method of operating for undescended testicle, the essential features of which consisted in bringing the testicle out through an incision in the scrotum, anchoring it to the fascia of the thigh, and uniting the scrotal wound margins with those in the thigh. Without knowing of Keetley's operation I have for the last three and a half years been treating cases of nondescended testicle by attaching the testicle to the fascia of the thigh and have repeatedly presented my cases before different medical societies, always being under the impression that I was the originator of the method. Only recently my attention was called to the fact that Keetley had described a similar method. The credit of having given us this new method there-

fore belongs to Keetley whose description of it antedates my first operation. However, if two persons undertake a similar task independently of each other, one can assume *a priori* that the methods by which they attain their end will not be identical. And, true enough, when I looked up Keetley's publication, I found that our methods differed not only in a number of details but even in some essential points. They really represent two different methods of accomplishing a similar object, and as I believe that my technique, although perhaps somewhat more difficult, ensures more perfect results, I feel impelled to publish it.

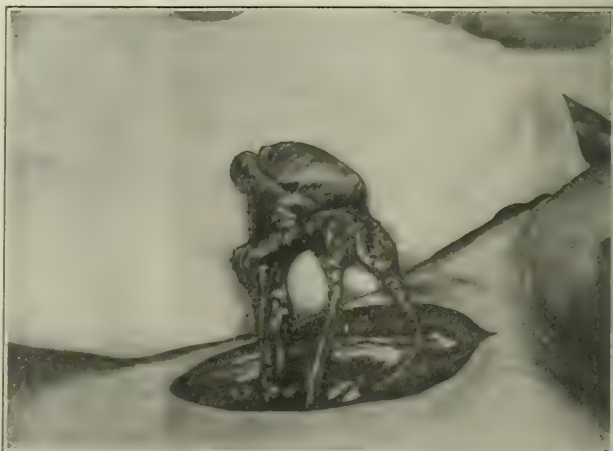


FIG. 2.—The cord has been dissected out; the gubernaculum and all connective tissue have been removed. The vas deferens lies below, the artery and veins farther up.

*Read at the New York Academy of Medicine, before the Section on Gynecology and Obstetrics, October 20, 1909.

ens and the bloodvessels, and these should be separated from all surrounding connective tissue to a point high up behind the abdominal parietes. Fig. 2 shows the cord dissected out; the vas deferens lies below, the artery and veins farther up. They are seen to be separate, because the connective tissue which otherwise unites them into one strand has been removed. If these structures are dissected to a point as high up as I have mentioned and are laid absolutely bare, so that no connective tissue remains attached, the testicle can be pulled down far enough. Should any vessel exceptionally prevent the organ from being drawn down, it may be divided, for we know that, even if all vessels are divided except those accompanying the vas deferens, the testicle still retains its vitality. I myself have never been compelled to sacrifice them but have always succeeded by carefully dissecting them out to a point high up behind the abdominal wall. In this dissection my operation differs from Keetley's in an important point. Keetley recommends dividing the cremaster as high up as possible and turning it down in order to attach the cremaster, and not the testicle itself, to the fascia of the thigh, a procedure which I consider to be less good, although it is doubtless easier. Keetley admits that in some of his cases the final result showed the testicle to be situated in the pubic region, an unfavorable place, as it could easily be injured there. In my operation, with direct attachment of the testicle to the fascia, this never occurs; the organ is always found to hang normally in the scrotum.

The next step is to make an incision in the thigh

to expose the fascia lata. The site for this incision is determined by taking the testicle out of the inguinal wound and drawing it down gently. The point at which it touches the thigh is chosen for the incision. The direction of the incision which I em-

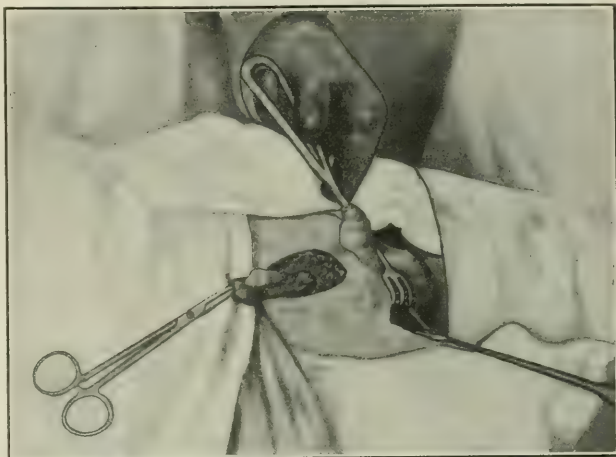


FIG. 3.—Incision down to the fascia lata of the thigh from in front backward and slightly downward, the direction of Kocher's normal incision.

ploy is from in front backward and slightly downward, thus coinciding with the natural lines of the skin, in accordance with Kocher's principle of normal incisions (Figs. 3 and 4). Keetley makes a longitudinal incision, parallel with the axis of the thigh. The wound in his operation therefore has an anterior and a posterior lip, while in mine it has an upper and a lower lip. Comparing these two incisions, one may say that in my operation, at a later stage of it, when the scrotum is sewed to the thigh, the suture of the deeper lip of the scrotal

wound to the upper lip of the thigh wound is probably somewhat more difficult than the suture of the corresponding posterior lips in Keetley's operation. On the other hand, however, in my operation the apposition of scrotum and thigh is a more natural one, the tension being slight; and, as the incision is transverse, the tension is evenly balanced throughout the whole suture.

A pocket is now made by gently digging with the finger from the lower end of the inguinal wound through the loose connective tissue to the bottom of the scrotum. Here the pocket is opened by an incision which must correspond in length and direction precisely with that in the thigh, in order that the cut edges may be united evenly, without tension and without folds. The testicle may now be drawn down through the newly formed



FIG. 4.—A canal has been made from the inguinal wound to the bottom of the scrotum, and the testicle has been drawn out through an incision in the scrotum.

canal and be made to emerge from the scrotal wound (Fig. 4). Or it may be left above until one is ready to suture it to the fascia. In that case, however, the canal should be kept open by inserting an instrument or a strip of gauze through it; for

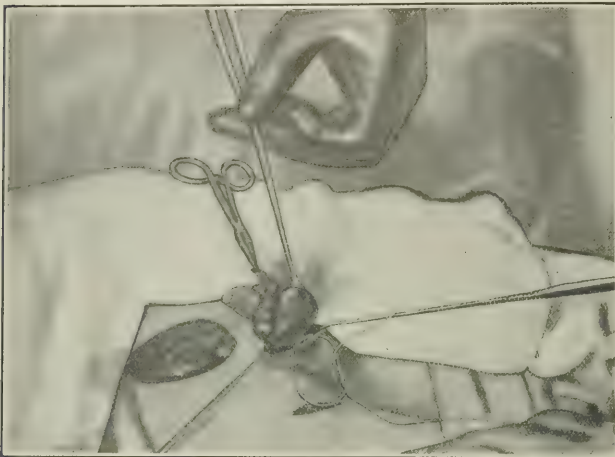


FIG. 5.—Application of suture between posterior edge of scrotal wound and upper edge of thigh wound. The suture should embrace but little of the skin, more of the raw surface. The knot is placed on the skin surface.

it would be awkward to have to dig the canal anew, after one lip of the scrotal wound has been sutured to the corresponding edge of the wound in the thigh, as that manipulation might loosen the suture. The pictures represent the former method; but I have often employed the latter, in fact, I prefer it, because the testicle being left above, is out of the way during the next step of the operation, the union of the upper edge of the thigh wound to the corresponding edge of the scrotal wound.

This step is the most difficult one in the whole procedure, if indeed one can speak of difficulty at all. The position of the flaps that are to be united is such as to render the suture less easy than usual. Ordinarily, edges that are to be united are turned toward each other; here they are turned from each other (Fig. 5). Furthermore, in suturing, we usually have the skin surface above and the raw surface beneath. Here, however, when the upper edge of the thigh wound and the corresponding edge of the scrotal wound are approximated, we face the raw surface, while the skin side is turned away from us (Fig. 6). If, therefore, we desire to place the knots of our suture on the skin in the customary manner, we must carry the suture from below upward, in-

stead of from above downward. If one only comprehends this principle, the difficulty is really very slight. The space for tying the knots is indeed rather limited. The relation of the points of entry and exit for the needle should be such that on the skin the stitch hole is much closer to the edge than on the raw side. The object of this is to prevent the skin from turning in, which the skin of the scrotum particularly tends to do. Were it permitted to turn in, there would, of course, be no union wherever it is inverted. It is of importance to observe these little details in taking the suture, for, after it is placed, it is impossible to correct a faulty adaptation of the edges; the sutures must be applied properly from the start. Fig. 5 shows that the knot is placed on the skin side of the flap. Fig. 6 represents this step of the operation completed. The entire posterior lip of the scrotal wound has been united with the corresponding edge of the thigh wound. In this picture it is at once apparent that the knots lying on the skin surface which is now concealed, are no longer accessible and cannot be removed, excepting the two end

sutures. Therefore catgut is employed for this row of sutures. If one prefers to use a nonabsorbable suture material a subcuticular suture of silkworm gut or fine silver wire may be selected; the suture would then be removed by pulling at it from one angle of the wound.

The next step is fastening the testicle to the fascia of the thigh. From three to five sutures of chromicized catgut are inserted, the number depending

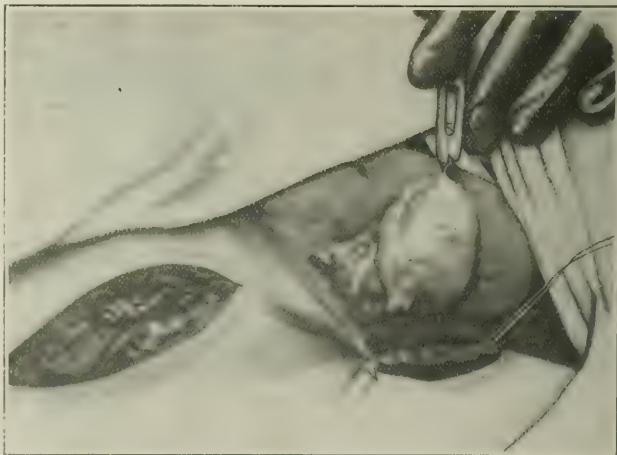


FIG. 6.—The entire posterior lip of the scrotal wound is united with the upper edge of the thigh wound.

upon the size of the organ. Enough of the tunica albuginea must be caught in the sutures to give a good hold. All sutures are inserted before any are tied, for, if one were tied, it would be impossible to insert the next one. The relative position of the stitch holes in the fascia must correspond as nearly as possible with those in the testicle, as otherwise, through uneven traction, the tissue might be injured. The position of the femoral vein must also be ascertained, to avoid injuring it. Fig. 7 shows five sutures passed through testicle and fascia before tying them. As I have already mentioned, Keetley proceeds in an entirely different manner, as he turns down the cremaster which he has divided high up, and sews the muscle to the fascia. His operation is therefore not a true orchepexy, but an anchoring of the testicle by means of its cremaster. I have already stated why I do not consider that method a good one.

Although up to the present time I have always employed chromicized catgut to fasten the testicle, there is no good objection against the use of a nonabsorbable material, such as silk. For, in the first place, the testicle is later to be separated again; and the sutures could then be removed. In the second place, one cannot at all be sure that the chromic catgut will be absorbed. In some of these cases I have found the chromicized catgut unchanged on loosening the testicle five or six months later. In this connection I might mention that in another case, a secondary operation after a laparotomy, I

found unchanged chromicized catgut, absolutely aseptic, which had been introduced eighteen months before. The absorbability of chromicized catgut, therefore, cannot be relied upon. I would warn, however, against the use of plain catgut, as the

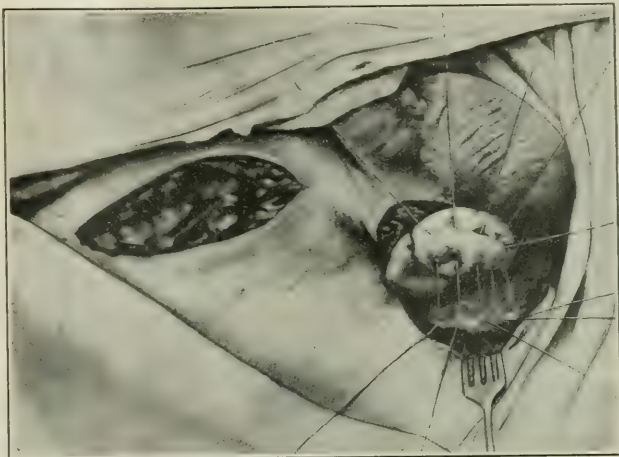


FIG. 7.—Sutures are inserted to unite testicle and fascia

short time up to its absorption would not suffice to attach the testicle firmly.

When the sutures between testicle and fascia have been tied, we then sew the anterior lip of the scrotal wound to the lower edge of the thigh wound. This suture is simple; but one must remember the tendency of the scrotal skin to turn in and must counteract it.

The testicle is now completely covered by skin (Fig. 8), and we turn our attention again to the inguinal wound. This is closed in three layers, as in Bassini's operation for hernia, only with the difference that the cord is not displaced, unless the simultaneous presence of a hernia renders this procedure desirable. In that case the deep suture, that uniting Poupart's ligament with the internal oblique and transversalis muscles and their tendon, is performed before the testicle is brought down through the scrotum, right after the step illustrated in Fig. 2. In all other cases the cord is allowed to come down in the shortest and most direct way. Fig. 8 shows three sutures passed through the internal oblique and transversalis above and through Poupart's ligament below. The union of these structures makes the closure of the first layer. The aponeurosis of the external oblique is shown in the picture as being

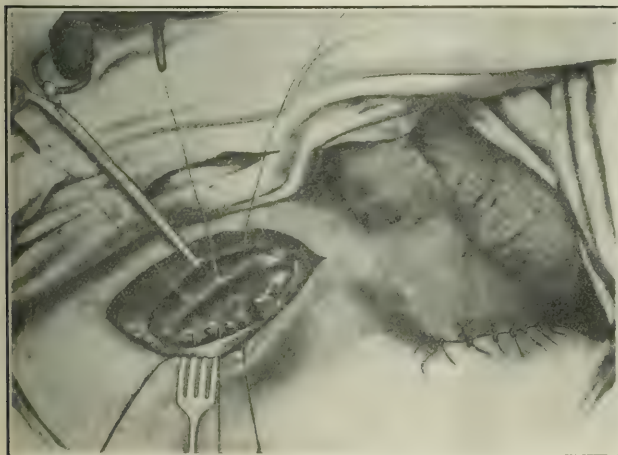


FIG. 8.—The testicle has been attached to the fascia and the skin closed over it. In the inguinal wound sutures have been passed through the internal oblique and transversalis above and Poupart's ligament below. The aponeurosis of the external oblique is held back, above by a clamp, below by a retractor which partly conceals it.

held back, the upper edge by a clamp, the lower by a retractor which partly conceals it. The suture of this aponeurosis forms the second layer. Finally the skin is sutured.

The operation is now completed (Fig. 9). With



FIG. 9.—The operation is completed. A strip of gauze lies in the canal of skin between scrotum and thigh; it serves as a dressing for the deep suture.

the aid of a dressing forceps a small strip of gauze is drawn carefully through the canal of skin between scrotum and thigh. It serves as a dressing for the deep suture.

A large dressing is then applied covering the entire scrotum and the abdominal wound. This is changed after about six days, when all skin sutures are removed, except the hidden, inaccessible row of stitches between scrotum and thigh. It will be remembered that catgut was used there to obviate the necessity of removing them. If a subcutaneous suture was inserted, it is removed at the same time in the customary manner. The patient remains in bed about ten days.

After three to six months the testicle is detached carefully, the scrotal wound closed over it, and the wound in the thigh is also closed.

Fig. 10 shows the completed operation in the case of a boy with bilateral retention of the testicle. The patient's left testicle had been brought down half a year before; it was released directly before beginning the operation on the right testicle. In the illustration one can see the left inguinal scar and the sutures in the left half of the scrotum; the suture of the left thigh wound is almost completely concealed behind the scrotum.

In cases of bilateral retention only one testicle is brought down at a time, as in those cases the scrotum is rudimentary and could not be fastened to both thighs without considerable tension; the good outcome of the operation would therefore be endangered. The first testicle is detached at the time of operating on the second testicle. Figs. 3 and 10 represent a case of this nature.

The success has been perfect in all cases. In one patient, shortly after his discharge from the hospital, a large St. Bernard dog ran up to the patient and jumped with full force against the attached testicle, causing a sharp pain of short duration. He was examined by his physician, who reported to me that the testicle had been torn off and had slipped up again. On the same day that I was told the story, I had to present one of my cases of orchepexy before this Section of the Academy, and on that occasion I reported faithfully upon the supposed bad result of which that physician had informed me. At a subsequent examination, however, I found the testicle safely anchored at its place, only it was completely covered by the skin of the thigh, so that the doctor who had doubtless palpated only the scrotal skin, had gained the impression that the organ was missing. I have since had a similar experience with another patient who returned to me after the operation and expressed his fear that the testicle had "dissolved," as he could not find it in the scrotum.

The condition was exactly the same as in the

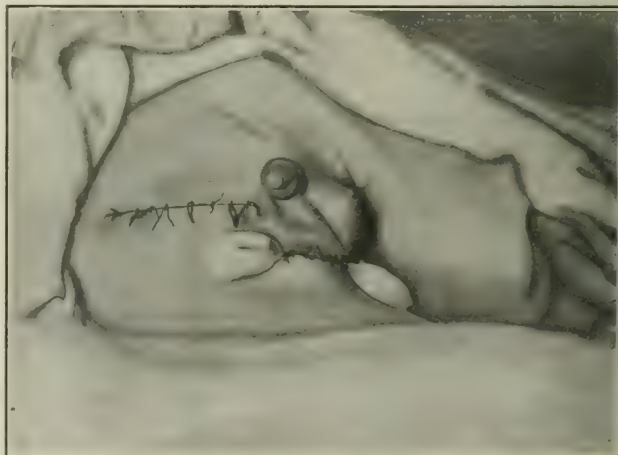


FIG. 10.—The completed operation in a case of bilateral retention of the testicle. The left testicle, which had been brought down at a previous operation, was liberated from the thigh at the beginning of the operation on the right testicle, and the wounds were sutured. One can see the left inguinal scar and the sutures in the left half of the scrotum; the suture of the wound of the left thigh is almost completely hidden. Compare also Fig. 3 from the same case, where the suture of the left thigh at the operation is also seen.

case just described; the testicle was concealed in its pocket in the thigh.

In the description of this operation I have laid some stress on exactness in suturing, as I consider this to be an important factor toward insuring primary healing without local irritation. In none of my cases has there been the slightest reaction in a stitch canal. In all cases, after the final operation, the testicle was in its normal position at the bottom of the scrotum, and in all cases it has gained in size. The results, therefore, can be designated as perfect. Although the technique is somewhat more difficult than in other procedures, our efforts are amply recompensed by the completeness of our success.

CENTRAL DISLOCATIONS OF THE FEMUR WITH FRACTURE OF THE ACETABULUM.*

By ALBERT E. HALSTEAD, M. D.,
Chicago.

By central dislocation of the femur is meant fracture of the acetabulum with dislocation of the head of the femur into the pelvic cavity. In the litera-

ture Cooper gives an account of a case admitted to the St. Thomas Hospital, which had the appearance of a dislocation backward of the head of the femur. The patient dying on the fourth day after the injury, a fracture of the os innominatum with a dislocation of the head of the femur into the pelvis was found. Since the first case was recorded up to the present time, about fifty cases in all have been reported by various authors. One of the most complete résumés of this subject that has been published has been made by Arregger in the *Deutsche Zeitschrift für Chirurgie*, lxxi. He collected from the literature twenty-three cases, adding one personal observation. Other contributions upon this subject worthy of note have been presented by Wilms, Warner, and Vacquez. Recently, June, 1909, in the *Bulletin of the Northwestern University Medical School*, Schroeder, of Chicago, has reviewed the subject, collecting forty-six cases from the literature, and adding three new cases observed by himself. The small number of cases thus far reported, fifty in all, including one not yet published but reported at the Chicago Surgical Society by Fuller, together with the fact that but a



FIG. 1.



FIG. 2.

These photographs were taken ten weeks after the accident.

ture most of the cases of this character are reported under the head of fractures of the acetabulum. The malposition of the head of the femur is considered only incidentally. From my point of view, the presence of the femoral head in the pelvic cavity is the most important element in these injuries, therefore I adopt the German nomenclature and will discuss this condition under the title of central dislocation of the head of the femur.

This history of these injuries dates from 1778, when Henrik Callisen described the post mortem findings in a case of severe crushing injury to the pelvis.

In his clinical lectures, published in 1821, Sir Ast-

ley Cooper gives an account of a case admitted to the St. Thomas Hospital, which had the appearance of a dislocation backward of the head of the femur. The patient dying on the fourth day after the injury, a fracture of the os innominatum with a dislocation of the head of the femur into the pelvis was found. Since the first case was recorded up to the present time, about fifty cases in all have been reported by various authors. One of the most complete résumés of this subject that has been published has been made by Arregger in the *Deutsche Zeitschrift für Chirurgie*, lxxi. He collected from the literature twenty-three cases, adding one personal observation. Other contributions upon this subject worthy of note have been presented by Wilms, Warner, and Vacquez. Recently, June, 1909, in the *Bulletin of the Northwestern University Medical School*, Schroeder, of Chicago, has reviewed the subject, collecting forty-six cases from the literature, and adding three new cases observed by himself. The small number of cases thus far reported, fifty in all, including one not yet published but reported at the Chicago Surgical Society by Fuller, together with the fact that but a

relatively small proportion are recognized during life, and the consideration of the high mortality associated with this injury offers a justification of the presentation of the following case:

CASE.—W. McA.—Male, aged forty-three; American. Entered the Cook County Hospital on March 18, 1909.

History: About six hours before admission to the hospital he fell down a flight of stairs when under the influence of liquor, striking on the right hip and right arm. After falling, he attempted to rise, but could not on account of intense pain in the right hip. His right arm was also useless.

Examination at the hospital showed him still under the influence of alcohol. Pupils were equal and reacted normally to light. Right forearm was swollen and presented the typical deformity of Colles's fracture. The right leg could be moved, but with great difficulty, because of the excessive pain and rigidity, and fixation of the muscles about the hip

*Read before the Des Moines Valley Medical Association, at Ottumwa, June 17, 1909.

joint. The right trochanteric region was flattened, the foot slightly rotated inward, and the leg adducted. Upon manipulation of the right lower extremity, the movements of the head of the femur were found limited in all directions, adduction and abduction being practically impossible; rotation to a slight degree was possible; the right trochanter swinging through a smaller arc than the left. There was great pain, caused by pressure over the trochanter. On measuring from the anterior superior spine to the inner malleolus, the right leg was found three quarters of an inch shorter than the left. The right trochanter projected half an inch above Nelaton's line. From the most prominent part of the right trochanter from the middle of the symphysis pubis, the right side was found to measure six and a quarter inches, the left six and three quarter inches. Rectal examination revealed the head of the right femur projecting through the acetabulum into the pelvis.

Diagnosis: Fracture of the acetabulum, with a central dislocation of the femur into the pelvis. Colles's fracture of the right forearm. X ray proved the clinical findings correct.

On April 5th, under ether anæsthesia, an attempt to reduce the dislocation was successful. The reduction was accomplished by manipulations similar to those employed in reducing a posterior dislocation of the head of the femur. Flexion of the leg upon the thigh, flexion of the thigh upon the abdomen, internal rotation, and finally circumduction

Measurements from the anterior superior spine to the inner condyle of the femur were the same on both sides. Because of the flexion and slight ankylosis of the right knee, comparison of the measurements from the anterior superior spines to the malleoli could not be made.

The distance from the trochanter to the middle of the symphysis pubis was slightly less ($\frac{1}{8}$ inch) on the right side than on the left. This could be accounted for in the atrophy of the muscles in this region.

At the present time, June 1st, the patient walks without crutches, and is free from pain.

Mechanism. Fractures of the acetabulum with dislocation of the head of the femur generally result from indirect violence, the force being applied to the trochanter while the leg is in a slightly adducted position. In most of the cases reported the patient had fallen, in some only an insignificant distance, striking upon the hip. The same damage may be done the acetabulum by striking a blow upon the trochanter, the body of the patient remaining stationary. An example of this mechanism is seen in the case of Peters (*American Medical Times*, 1861),



FIG. 1



FIG. 2

These photographs were taken ten weeks after the accident.

outward, with extension. The head of the bone could easily be removed from the pelvis as could be ascertained by digital examination through the rectum, while the movements described were in progress. If released, it would return and present through the acetabulum. By maintaining extension and abduction, it could be held outside of the pelvis. In this position, under powerful extension, a plaster cast was applied from the lower costal border to the toes on both sides. The legs were held in abduction by means of a brace placed between the knees, which was included in the plaster cast. After two weeks the cast was removed from the uninjured leg.

On May 10th, the entire cast was removed and massage of the injured side was begun. Passive and active movements of the hip were instituted a few days later.

On May 20th, examination revealed the following: Right knee somewhat ankylosed from effects of plaster dressing. Right hip, there was still some flatter over the trochanter. Movements in all directions could be made, but not to a normal degree. The thigh could be flexed to an angle of sixty degrees; outward rotation almost to the maximum was possible. Internal rotation very much hindered. Adduction limited. Abduction to about one half the normal distance could be obtained.

when a piece of rock, dislodged by a blast, was hurled violently against a laborer, knocking him down and causing a fracture of the acetabulum. In some cases it would seem that force applied to the feet or knees, such as occurs in falls when the individual strikes upon the feet or knees, may result in fracture of the acetabulum, although fracture of the neck of the femur is much more common. A case of this kind is cited by Kronlein. A girl fell from a distance of twenty feet, striking upon her feet. Both femoral heads were driven through the acetabulum. The mechanism of this class of cases is the same that is employed in forcing the head of a hammer on the handle by striking the opposite end of the handle against a resisting body.

Pathology. In addition to fractures of the acetabulum, there are frequently found extensive fractures involving other parts of the bony pelvic wall. The most common of these have been fractures of

the rami of the pubis or ischium, with or without separation of the symphysis. Hæmatoma, superficial over the trochanteric region or deep, involving the various intermuscular spaces, or within the pelvis and subperitoneal, are common. Laceration of the iliac vessels with a rapidly forming hæmatoma and death from hæmorrhage has been noted.

Graessner (*Deutsche Zeitschrift für Chirurgie*, lxxiv) reports from Bardenhauer's clinic a case of a window polisher who fell a distance of two metres, striking upon the hip. After being brought to the clinic in a state of collapse, a rapidly forming hæmatoma in the region of Poupert's ligament caused Graessner to cut down upon the bleeding vessel, which he found to be the external iliac vein. This vessel was ligated and the hæmorrhage controlled. The patient died shortly after completion of the operation. Autopsy showed that a spicule of bone from the fractured acetabulum had torn the external iliac vein. Death was caused by the hæmorrhage. In like manner, injury to the bladder may occur. Vacquez reports a case where death due to sepsis resulted from puncture of the bladder by a detached fragment of bone. Injury to the nerves of the pelvis from pressure or from laceration may occur, causing paresis or paralysis, or pain in the region supplied by these nerves. The intestine may be perforated by a fragment of bone or may suffer from compression between the head of the femur, and the pelvic wall, or between two fragments of the fractured bone. Infections following associated external wounds, or resulting from perforation of the bladder or intestine, chiefly when a large hæmatoma exists, constitute the most dangerous complication of fracture of the acetabulum. In a number of the cases reported this has been the cause of death.

Diagnosis. In the vast majority of the cases reported before the advent of the x ray as a diagnostic procedure, the exact nature of the bone lesion was not recognized *intra vitam*. In those in which the dislocation was found during life the diagnosis was mostly made after exposing the parts in the course of an operation made for the control of hæmorrhage or for relief of suppuration which followed the injury.

A number of the cases were thought to be posterior or supracondyloid dislocations of the hip, or fractures of the neck of the femur. As soon as the x ray came into general use as a routine part of the examination of all traumatic bone or joint lesions, the number of these cases reported suddenly became noticeably larger, and the prognosis has relatively improved within the same period. The explanation of this apparent improvement in the prognosis is evident. In the period of time represented by the first twenty-five cases reported nearly all were found at autopsy. Those cases in patients who lived were not recognized as central dislocation, but were mostly considered fractures of the neck of the femur.

The signs of a central dislocation of the femur are usually positive, and if the possibility of this accident is borne in mind the diagnosis will be made in all cases.

The following signs are to be looked for:

1. History of a fall or a blow on the hip. The force is usually very great, but an insignificant fall or blow may, under proper conditions, cause frac-

ture of the acetabulum, when attempt at standing may further damage the part by pushing the head of the bone through the acetabulum, or by forcing the fragments inward, without the head passing through the pelvic wall.

2. Loss of function of the leg on the injured side. This is complete when the head is found in the pelvis. Movements of all kind are limited, some—particularly rotation—impossible.

3. Flattening over the trochanteric region, with a flaccid condition of the tensor fasciæ latæ.

4. Shortening, though not great, is present in most cases. The amount depends upon the position of the femur. It is rarely more than an inch, and frequently not more than one half inch.

5. Slight external rotation has been noted in the majority of the cases. In some there was no rota-



FIG. 5.—X ray picture of the acetabulum

tion, and in a few inner rotation. Rotation inward was noted in the case here reported.

6. Shortening of the distance from the inner border of the major trochanter to the midline of the symphysis pubis. This is always to be found and constitutes with the flattened aspect of the hip evidence that should direct us to the *only* positive sign, which is the presence of the head of the bone in the pelvis. This can always be determined by rectal examination.

The x ray should be employed to confirm the diagnosis.

Treatment. In many cases dislocation of the head of the femur into the pelvis is associated with other lesions that speedily bring about a fatal termination. Fracture of the skull, rupture of the bladder or intestine, may render the prognosis hopeless from the beginning. In every case an effort should be made

by careful examination to determine whether or not these complications exist, in order that prompt surgical interference may be instituted.

In uncomplicated cases an effort should be made to dislodge the head of the femur. When it is not wedged tightly between the fragments of the fractured acetabulum, this can usually be accomplished. No definite rule can be applied to all cases. Schroeder recommends adduction, using a padded piece of wood between the thighs as a fulcrum. In my case, by flexion with circumduction and extension, the head was dislodged without great difficulty.

Where, for the reasons given, the head cannot be dislodged, resection of the neck with removal of the head is indicated. It should be remembered that manipulations may be the cause of a hæmorrhage or a perforation of the bladder or intestine by forcing a spiculum of bone through these organs. In the cases where the head is pushed into the pelvis, but retaining the acetabular wall, in front of it, a fairly good result may be expected from immobilization and extension of the extremities.

103 STATE STREET.

TREATMENT OF APPENDICULAR COLLECTIONS OF PUS.

By WILLIAM L. HARRIS, M. D.,
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The principle on which sane surgery is based, namely, that the surgeon is only nature's assistant, is simple and comprehensive and beyond dispute. We remove obstructions, stimulate functions, and clear the way for the ever present reparative forces of Nature. A human organism was meant to be constantly at grips with other organisms which work for its undoing. It is, therefore, prepared to resist poison and parasite and to defend itself against its numberless invisible enemies. In fact, health is but the surplus of its resisting force, as illness is its deficit.

This universally recognized principle may never be forgotten by the surgeon. In vain his dissection, his reconstruction, his skill, or his devotion, if, when his work is done or doing, he does not come in contact with that mysterious reconstructive force which we call life, and which, once his efforts have provoked it, assumes charge of the situation, and paves the way to what we call recovery. This thought, provocative of humility it is true, should save the surgeon from the Scylla and Charybdis of the operating table, that is, from doing too much or too little for his patient. He does too much, who, coming upon conditions of disease, fancies that the only remedy possible lies in his knife, forgetting that the vital force which built up that body to this day is only dormant, ready to spring forth into activity once the leash is withdrawn. He does too little who, in the presence of an extremity, fears to do all he can to enable the prostrate life force to resume its unimpeded sway. Perhaps in no class of cases is a surgeon of limited experience more inclined to do too much or too little than in that large class in which

pus is discovered in the abdomen. There is the well meaning but pottering practitioner, who, once he has located the source of trouble, and discovered that drainage is indicated, lays his drains without nicely determining why, then continually disturbs them, irritates his incision, and, when Nature, after weeks of unnecessary struggle, finally prevails over him and the pus, calmly claims the credit for his surgical skill. On the other hand, there is the man who does not dare to do the things his judgment directs him to do. His patient's condition will not admit of the operation that is clearly indicated, and he hesitates to attempt the only one which will palliate the present crisis, and enable him to await a more favorable moment, and, fearing to take a chance, he exchanges the rôle of physician for that of spectator, and the patient dies. Both types, familiar enough to those who are familiar with actual surgery, forget that the surgeon is merely Nature's assistant.

The story, recently revived, of the late General de Gallifet, who, wounded on a Mexican battle field by a cannon ball which had exposed his intestines, calmly, on coming to consciousness, bundled them up and hobbled to safety, to be known forever afterward as the man with the silver stomach, may, in its exaggeration, be a bit of Gallic humor; but, it none the less represents a possibility which none will be more inclined to credit, than the man who has studied and observed the ways of abdominal surgery. Still, the conscientious operator never neglects his technique. Anatomy is an open book for any man to read. We all read it, or are supposed to; some of us do not, but many a man who knows his anatomy is a poor surgeon. He may lack nerve but he surely lacks technique. In abdominal surgery especially, a man's hands are his eyes. This is nevertheless true when he is making a diagnosis. How difficult a diagnosis may at times be, any surgeon will admit who has tried to differentiate the symptoms of a suppurative appendicitis and those of a suppurative cholecystitis when the abdominal walls are extremely rigid, and the case has been brought under observation only when the disease was far advanced. Yet, it is all important in such cases, to save time, and to know where to make the incision, whether over the appendix, or over the gallbladder.

I have found repeatedly that firm pressure made alternately over McBurney's point, and over a point below the tip of the ninth rib, as the patient is going under ether, is always of value, because, as the action of the anæsthetic advances, the pain reflexes remain longer over the region involved.

My experience has led me to attach so much importance to just such little "tricks of the trade" as this, that I submit without apology the following pages as leaves from a surgeon's journal. One who has not explored the abdomen or made it his business to be constantly on the defensive against pus, may criticise the minutæ into which I enter, but, as the conclusions are the fruit of years of experimentation and have often helped me in my practice, I put them at the disposal of others for whatever they are worth. I could have wished for greater leisure to arrange these observations in more orderly fashion.

ion, but my readers, if readers I have, will know better how to appraise their value when stated in the abrupt language of a "demonstration."

Incisions.—For making an incision for opening into an intraabdominal collection of pus, the operator should begin above the mass, and follow a line drawn through its centre. In the case of the gall-bladder it is better made almost straight up and down; in the case of the appendix, an oblique incision downward and inward serves best the purpose of drainage. In any case it is desirable to get into the abdominal cavity with the scalpel blade only. After cutting through skin and superficial fascia, the fibres of the external oblique should be divided, and if near the rectus muscle, its sheath is divided and its belly drawn toward the median line where it may be held by means of a light retractor. You thus expose the posterior wall of the sheath which you go through, being careful to avoid injuring the deep epigastric vessels and their branches. If one follows this method, it will be a good plan to catch the cut edges of the peritonæum and transversalis fascia in the jaws of hæmostatic forceps and draw these tissues up over the incised surfaces of the wound. If the blade of the retractor is kept well within the abdominal cavity, the epigastric vessels will not be bruised or torn, but if they are injured, the injury should be sought out and repaired at once, even if it takes time to do it. When looking for the ruptured ends of the epigastric vessels, pull the outer border of the rectus muscle gently upward and inward toward the median line. It is well to bear in mind that below the semilunar fold of Douglas these vessels lie between the peritonæum and the transversalis fascia, but above it they are between the belly of the rectus muscle and the posterior wall of its sheath and are therefore exposed by pulling forward the muscle belly. They are often torn by the careless holding of the retractor, which, at the end of the operation, is frequently found jammed beneath the belly of the rectus muscle just where the epigastric vessels lie. Some operators, to save trouble, cut these vessels and tie them when they are in the way, but a little care on the part of all concerned would make this unnecessary. They must, however, be always kept in mind, especially in sewing up the wound, lest they be punctured by an unusually deep stitch. But if they are punctured there is only one thing to do, namely, to find the rupture and repair it. If you are unsuccessful in checking the hæmorrhage from these vessels, and as they are very friable, it is sometimes exceedingly difficult to pick them up, you may, in nondrainage cases, sew up the peritonæum tight, and in closing the other tissues leave in a drain, which should be removed in twenty-four hours.

Should the mass be just above the outer third of Poupart's ligament the incision will take you through the bellies of the internal oblique and transversalis muscles. A clean incision with the scalpel directly through these muscles, no matter what direction the incision takes, is preferable to the separation of the muscle fibres. The objections to the separation method are many, and to my mind conclusive. First, you require two sets of retractors to keep the incision open. Second, you devitalize their fibres by pulling upon them in this manner.

Third, you have, necessarily, but a small hole to work through, and lastly, in case of infection, you have a difficult wound to care for, and convalescence is slow.

I propose now to describe a treatment of two or three classes of drainage cases, and the methods which I have found to give excellent results. Naturally I lay emphasis upon the postoperative treatment both as regards the care of drains, and the application of dressings. I believe so thoroughly in coaxing Nature to do her work, that, perhaps, I make too much of speedy recovery and the "psychological therapeutics," but there is no question in my mind that we should have more brilliant results in surgery were all our patients gifted with the non-chalance of General de Gallifet.

Suppurative appendicitis with adhesions.—When upon cutting through the uplifted parietal peritonæum the operator finds the presenting parts adherent to it, he should have the patient rolled onto his right side and, with his finger, carefully break up the adhesions on the right or operator's side. After freeing the outer and lower portions of the caput coli, being careful to spare those adhesions toward the median line, pass the finger downward toward Poupart's ligament when pus often flows at once. In case it does not, a large blunt drainage or irrigating tube should be passed deep into the pelvic cavity, and, in the event of no pus being found there, the same tube should be passed up toward the liver, keeping it well to the outer and posterior side of the colon. No pus being found there divide the adhesions toward the median line, when, in many cases, you will find a large swinging mass part of whose contents are pus and a broken down appendix.

In order to get greater freedom of action, it is advisable to isolate such a mass by large strips of moist, crumpled gauze which have been wrung out of a hot saline solution. In introducing them, an assistant pulls up the abdominal wall with a large bladed retractor, using a very considerable amount of force, and pulling with the retractor handle pointing to the ceiling. The operator is at the same time drawing the mass with his left hand in a direction away from the retractor, and into the ditch thus formed, a large embankment of warm, moist gauze is carefully packed. When the mass has been thoroughly surrounded the retractor is withdrawn, and smaller ones may be used to keep the edges of the wound, which are well covered with moist gauze, apart. It is now perfectly safe to explore the mass, and where it feels the hardest is usually the best place to attempt cleavage. This is not a difficult matter and presently you come upon pus, usually a perforated appendix forming part of the retaining wall, and frequently, also, a large faecal concretion free in the cavity. Should the appendix be not readily detected, in a case walled off as I have described, it will be perfectly safe to make a thorough search for it. When found it should be excised tying off its base with a ligature of heavy pedicle silk, which should not be tied too tightly nor cut when tied. Between its two strands is laid a piece of moist gauze, and a third surgeon's knot fastens this immediately over the stump of the appendix. This long piece of gauze is always, in my opinion, the most important of all our drains. The long ends of silk

are fastened to it in such a manner that they may be easily recognized at subsequent dressings. They should not be disturbed before the seventh or eighth day unless, indeed, they slough away earlier. Silk is a more reliable material in such cases than catgut, and, when we leave the ends protruding, we insure



FIG. 1.—Belt ready for lacing.

its final removal, thus overcoming one great objection to its use. About this gauze drain are placed two or three small cigarette drains, and, if the infected cavity is large enough, fluffed up gauze should be gently packed about them. The wound and the adjacent peritonæum is then wiped off with gauze, wrung out in hot saline solution, after which the gauze, walling off the original mass, is carefully removed, again using the broad bladed retractor to pull up the belly wall, to prevent dragging into the wound, intestines or omentum. No gauze should be allowed to intervene between the parietal peritonæum and the opposing surfaces of the mass, the gauze, filling in the cavity left after the removal of pus and appendix, being sufficient to care for any pus which may collect within the first seven or eight hours. This mass of gauze should be of about the same circumference in passing through the incision as when leaving the intraabdominal pus cavity. If it is, no precautionary drainage of the pelvis is necessary. The omentum is now placed in its proper position and all gauze sponges and strips carefully counted before the operator. Through and through approximation sutures should be passed above and below the gauze, taking care to see that the needle, in passing through the peritonæum and fascia, is at least five eighths of an inch from their cut edges. One or more can be passed above and below the gauze drains and tubes, but before they are tied, peritonæum and fascia through which these sutures have been passed are carefully brought together by interrupted sutures of chromic gut, number one or number two.

Interrupted are preferable to continuous sutures, because trouble with one stitch may thus be isolated. To prevent hernial protrusion and to facilitate the approximation of the fascia, I pass immediately above and below the gauze, through fascia only, single stitches of silkworm gut which I do not cut until the eleventh or twelfth day, when their long ends are pulled upon and their loops cut with the point of a sharp bistoury. I never insert dry gauze into the abdomen, because I have remarked that healthy peritonæum, in contact with dry gauze for any length of time, becomes slightly congested and

loses its lustre, thus facilitating the formation of adhesions. Our gauze is always wrung out in warm saline solution before using it in the abdominal cavity.

Free pus without adhesions.—If, on opening up the belly we find a perforated appendix and the abdominal cavity well filled with pus, with, however, few or no adhesions, we must, of course, find and remove the appendix. It is, however, anything but wise to pull out for inspection any considerable portion of the intestines. The sense of touch must be the operator's guide, and, with a mental map of anatomical relations, his fingers can readily find the appendix and bring it to the outside of the belly or as near the incision as possible in the grasp of a pair of ringend sponge holders.

If the appendix has ruptured near its junction with the cæcum, it is not wise to attempt to tie it off, and it is Deaver who taught me, in such cases, to grasp the end of the cæcum between the thumb and forefinger of my left hand, and after cutting clean through the appendix base with scissors, to sew up the wound thus made in the cæcum, as we would a rent in any portion of the gut, finally covering in the primary suture line with peritonæum using fine chromic gut as a suture material throughout this whole procedure. There being few if any adhesions in the case which I am describing, drainage plays a most important part in saving the patient's life. The drains, however, must be introduced both rapidly and skillfully. The operator must put in each drain with a definite purpose, and thus supply free exit for the poisonous material which is being secreted within the peritoneal cavity.

If the pelvic cavity is filled with infected fluid it cannot safely be drained through an incision in the neighborhood of McBurney's point, though many serious cases so treated have, I know, recovered. In order to drain this particular kind of case properly, at least one, possibly two or three incisions should be made in addition to the initial opening.

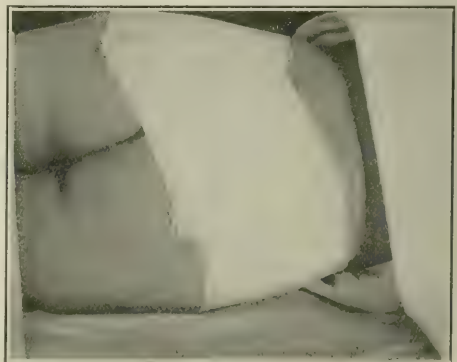


FIG. 2.—Showing crossing of two pieces of steel posteriorly.

Through the initial wound will pass the piece of moist gauze which has been fastened to the stump of the appendix by means of a third knot in the long silk ligature, and perhaps several moist gauze drains and tubes which may have been introduced up toward the right kidney, and down into the right iliac

fossa and the pelvic cavity; and, if the cæcum at the base of the amputated appendix has been found somewhat necrotic, perhaps a goodly quantity of warm mused and moist gauze has been carefully packed in between the outer side of the cæcum and colon and the opposing parietal peritonæum.

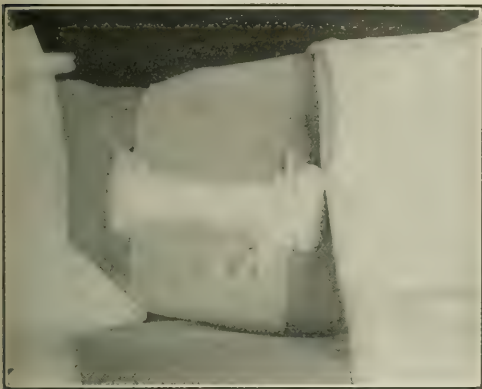


FIG. 3.—Belt laced over dressing

Of the secondary incisions, the most important will be the one made in the median line immediately above the symphysis. Through it we gain access to the region about the rectum and behind the bladder in which, with one or more thin elephant's ear sponges, we sop up any free fluid that we find. The entire pelvic cavity is carefully mopped out with warm moist gauze or marine sponges, and around one or two good sized rubber tubes are laid strips of moist gauze very loosely folded. The lower end of each is freshly cut across so as to furnish a good brush like absorbing surface which is laid upon the floor of the pelvis, and then up and down the wound, strip after strip is thus applied until the whole cavity has been filled with a clean mass of coarse gauze upon which the intestines will lie. Here and there, as you are introducing this drainage, you should place a good sized cigarette drain, and every ten or twelve hours one can be removed. This is a valuable trick as it overcomes one of the objections to the use of gauze drains, viz;—that its capillarity being destroyed, it acts as a plug. When this procedure is finished you have a clean pelvic cavity filled with sufficient moist gauze to soak up any pus which may be formed in the next ten hours. Instead of hanging in a dirty pelvic cavity, the intestines are now resting upon a clean mat of gauze which, in the majority of cases, covers over every spot of pus producing tissue and, by the time pus is again produced in any quantity, adhesions will have been formed, and you are master of the situation. Such liberal drainage makes the patient more comfortable, and it has been frequently remarked by the attendant nurses, that, with large drains, patients have less pain, less distention, and less difficulty in emptying their bowels. Before beginning to close any portion of the incision, and while the patient is still in the Trendelenburg position, pass your hand into the pelvis and see that

no knuckle of gut is caught between any of your gauze drains. The upper portion of this median incision is closed with two or three interrupted through and through sutures of silkworm gut, but before tying them bring peritonæum and fascia together with interrupted sutures of chromic gut. The sutures nearest the drain should be of silkworm gut and should not be removed before the tenth day. This arrangement will, in the majority of cases, protect the chromic gut sutures from infection. You now apply a large wet dressing and a well fitting bandage, and the patient is put into a well warmed bed either in the Fowler position or, if drainage is very extensive, flat upon his belly. Salicylate of eserine is given hypodermically in 1/40 grain doses every two hours, usually for four or five doses, then every four or six hours for the first day, but I often continue giving it, when there is great distension, at two or three hour intervals for thirty-six or forty-eight hours. Morphine sulphate is given freely, if patient is restless, but in very small doses, usually 1/20 grain, never more than 1/16 grain. If two or three doses do not relieve the patient I combine with it 1/200 grain of hyosine hydrobromate which should be given as often as every hour if necessary, but stopped immediately when the patient is comfortable.

I do not pay much attention to nourishment, as the worse the case the more dispensable it is. Water may be given at pleasure either warm or cold. Apollinaris, with a dash of fresh lemon juice, is good in case of nausea; often times a glass of cold lager beer is the most welcome drink you can give. Kumyss, if well made, is excellent.

Cases demanding irrigation.—Where there is extensive distribution of pus, the question of irrigation will always come up sooner or later. There is always a tendency, very natural it is true, to go after



FIG. 4.—Over belt is applied a spica bandage, using an amputation roll.

all the pus, as if Nature were not provided with normal means of absorbing it in certain quantities, and as if our drains were anything but aids to Nature to regain the mastery. As it is unwise to do more than we need, and as we should always remember that both we and the pus are intruders in that abdomen, we may take it as a rule, that a gentle mopping out of the entire cavity is all that is necessary when the intestines are but moderately distended, and the peritonæum but slightly congested,

providing, of course, that we are able to get good drainage of the pelvis and the appendiceal site. An added precaution is to keep the patient three or four days in the extreme Fowler position. In mopping out the abdominal cavity we should proceed very gently, have the gauze quite warm, and wring it out frequently in fresh saline solution, while making sure to rinse our gloved hands frequently. But, when the intestines are covered with lymph, of the consistency and appearance of custard, which may or may not be easily sponged off, when the intestines are well distended, with less than normal lustre, splotted frequently with the color of the Concord grape, when mesenteric and omental tissues are involved and somewhat granular in appearance, when the cæcum, near its junction with the appendix, is indurated, and the pelvis looks as if it had held the thin and dark colored and faecal smelling pus for a considerable time, when, added to this, the patient has a septic appearance, then you find yourself in the presence of a case which calls not only for irrigation, but the most resourceful kind of drainage. An incision for drainage in the median line and perhaps in the two flanks, will be very likely required. After carefully sponging out all the pus you possibly can, irrigate copiously with a hot saline solution. You can pass freely into all portions of the abdomen the large blunt glass irrigator, which should be well supplied with lateral perforations. In beginning this irrigation, the patient's trunk should be well elevated, so that the pelvic cavity may get the first of the washing. At the end of two minutes, the trunk should be lowered for a time, so that the upper portion of the abdominal cavity may get the benefit of the flushing for about one minute. Then mop out the pelvic cavity hurriedly, yet thoroughly using large elephant ear marine sponges, or, as suggested by Kelly, you can attach the irrigator to the afferent tube of an aspirating jar. Quickly put the patient in the Trendelenburg position, fill the pelvis with warm moist gauze in strips, and insert at least one good sized drainage tube, running from the bottom of the pelvis to the median incision. If you wish you can put in two more tubes running from the bottom of the pelvis to each of the incisions in the flanks.

When in serious cases on account of over distention, you experience difficulty in keeping the intestines within the abdomen, and when extensive drainage is called for, the question of emptying the inflated bowels will come up; their condition certainly will interfere with the drains you have introduced, and when the patient has a weak pulse and rapid and shallow respiration, I believe intestinal drainage is called for. This is easily done by introducing with a straight cambric needle an interrupted circular purse string suture immediately opposite the mesenteric attachment of the ileum at a point about ten inches from its junction with the cæcum. Its circumference should be that of a twenty-five cent piece. Through a crucial incision made in its centre a half inch rubber drainage tube should be introduced in such a manner that its free edge projects very slightly beyond the mucous membrane of the ileum, and it should carry in before it the four angular tabs made by the two incisions. By tightening the purse string (which should be of

silk) the intestinal peritoneal covering is brought in close contact with the sides of the tube and the latter is held in proper position by two long sutures passing through tube and gut on opposite sides and which are not cut. After tying them they are passed in pairs through the peritonæum and fascia on each side of the incision in such a way that on being tied together they will hold the perforated gut in an easy position in the region of the gauze drains; a little gauze may be packed about the tube, but this is not necessary if you have been careful about the introduction and tying of the sutures. You now have the intestine drained in the same way as you drain a gallbladder and as the tube intrudes into the lumen of the intestine only about one eighth of an inch, it will be an effective drain and in a short time will be working well providing the intestinal wall is not paralyzed. The tube is carried to a jar attached to the side of the bed. I believe this simple procedure, which perhaps is not original, has been the means of saving several of my desperate cases, and I believe that it should be resorted to more frequently. The relief to the patient after it begins to drain off intestinal contents is great, and the closing up of the false anus later on is a simple matter. Put over the entire abdomen a large dressing, wrung out of warm saline solution, containing twenty per cent. of alcohol, arranging it about the tubes so that they can protrude, and in fastening it on, use gauze amputation rolls instead of bandages, making use of the spica turns about each hip. You can apply this bandage with greater ease and accuracy, if, when doing so, you put between the patient's shoulder blades and beneath his sacrum, inverted wash basins. About this dressing apply a well fitting Scultetus's bandage of seven or eight tails, each one of which should be four inches wide. It should cover in snugly and take in all the body between the symphysis pubis and the ensiform cartilage. This bandage gives excellent support to an over distended abdomen, and no matter what position your patient may assume, he cannot disturb his dressing. Such a case will usually demand the closest attention and give you many an anxious moment. After all, it is only by paying attention to details that you can hope to win out. On the way to the recovery room keep the patient in a semi-perpendicular position and afterward well up in bed. Wash out his stomach with a warm solution of sodium bicarbonate if he vomits. Start the Murphy rectal drip, and if he is restless or in pain, give him small doses of morphine sulphate, gr. 1/16 or 1/20, to which you may add hyosine hydrobromate, gr. 1/200, and repeat it every two or three hours. This combination is almost a specific for vomiting when not due to obstruction. Also give eserine salicylate, gr. 1/40 every two or three hours. If the skin is "leaking" give a hypodermic injection of atropine sulphate and apply cold compresses to face and head. If the stomach is retentive, you can with advantage give small doses of black coffee, and when the patient is very weak, pour it into a small glass funnel fitted with a No. 20 rubber catheter, which after being well oiled, is passed through either nostril through the pharynx and into the œsophagus. It does not enter the stomach, but small quantities of liquid will enter without any trouble. Small

doses of epsom salts may be added to the coffee. Fractional doses of calomel I never use as they have a tendency to encourage vomiting. If the patient's condition is extreme, give normal salt solution under each breast, one pint on each side every two or three hours, and keep on giving it, in smaller quantities, as long as he shows signs of improvement or even holds his own. See that his bladder does not become overdistended. I have known retention with overflow to persist for some hours before its discovery. Such a condition interferes with drainage. Avoid nourishment for some time if the patient is very ill, for it cannot be assimilated and it tends to increase tympanites. Give high enemata for gas, and see that the rectal tube is stiff enough to prevent its doubling up. After giving a gas enema, have an attendant hold a handful of gauze over the anus for some time to assist the patient in retaining it. The occasional use of the rectal tube alone will often cause the expulsion of a quantity of gas. One must look after the drainage tubes and see that they are free. It is well to pour two or three ounces of hot saline solution into them from time to time, and, if the pus is very thick, then even a larger quantity. Turning the patient from side to side at regular intervals is a helpful thing.

I need not say that such elementary details of the nursing of the sick as absolute quiet, the exclusion of friends, and the removal of avoidable annoyances should be insisted upon. There is nothing too small to be neglected. The sponging of the hands and the forearms and face freely with equal parts of alcohol and ice water, the arrangements of the bedding so that, while there is no pressure on the body, the shoulders are covered, and the neck is not inconvenienced by a tight garment; the provision of iced drinks and stimulants in small quantities, the maintenance of the body in a semiupright position with the danger of slipping obviated, all these and a thousand other details must occupy the attention of the surgeon, while he is waiting to see if nature is going to respond to his efforts.

While, naturally as a physician, I make use of anodynes, I always do so cautiously and half unwillingly, and I like better to remove the removable causes of irritation and to provide those simple attentions which soothe as well as cheer. The surgeon should never give up the most forlorn case. If he has had any experience he knows enough to expect anything; to believe even the *de Gallifet* story or that the Grand Llama, who, in Tibet, is said, yearly, to rip open his abdomen before his followers exposing his intestines, and then putting them back again, may do what these simple folks swear they see. At any rate, having done all he can, he need not reproach himself for the result. But the consideration of this case has made me digress from the subject of the post operative treatment of drains. I am no advocate of the early removal of drains that are draining well. Rather would I in most cases leave them undisturbed until the fifth or sixth day. If the gauze seems dry at the end of twenty-four hours one or more of the cigarette drains may be removed. The rubber tubes should be cleaned out, several ounces of hot saline solution may be poured into them every four or six hours, and to keep their diameter at the one half or three quarter inch which they should have, we can insert a long probe cov-

ered with a strip of gauze so as to remove the adhering pus. This is especially useful if the pus is thick. The outer dressing should be changed twice in twenty-four hours. It should be wrung out in a twenty per cent. solution of alcohol and at the same time, it is wise to irrigate the protruding ends of gauze, thus keeping them clean and in good condition. If the quantity of gauze protruding through the wound seems too great it is a good plan to travel along the ends of each wick with a pair of forceps in each hand, and withdraw as much of each drain as comes away easily, this is then cut off with the scissors. The large bunches of gauze strips passing through the incision are calculated to promote adhesions between any presenting knuckles of gut at points on the parietal peritonæum some distances away from the incision thus diminishing in a great measure the possibility of subsequent hernia. If the through and through silkworm gut sutures begin to cut into the skin, at each dressing, a small piece of gauze wet in a fifty per cent. solution of alcohol may be pulled between them and the skin. This procedure can also be adopted if the sutures become loose although the surgeon's knot with which they are tied can be untied and the wound be more firmly approximated as often as it is necessary.

Day by day the loose drains are gradually removed. Those which remain are well cleaned with the irrigation which, for the first few days, is saline solution, after that fifteen to twenty per cent alcohol. So long as any portion of the original drain remains it is unnecessary to replace any that is removed, but a small piece of clean gauze is always tucked between the original drain and the granulating surface of the wound. Tubes should be turned around every day, but should not be shortened before the sixth or seventh day, after which time they can quickly be gotten rid of. I know of no cases where a greater amount of time and painstaking care can be better expended than in these cases. A foul smelling dressing should never be tolerated, but as soon as there is any marked soiling of gauze, a fresh dressing should be applied. In the event of a faecal fistula forming, drains are removed more promptly and irrigation is performed more sparingly. In such cases I always cover the belly with a large piece of gauze wrung out of warm Beck's paste which is an excellent protective of the skin. Cereal diet should be given in place of fluid diet.

The practice of free irrigation of the drainage tract after all drains have been removed, in most cases, retards recovery and does no good. It is better to get the patients out of bed as soon as possible. Wash their wounds morning and night with soap and water, followed by fifty per cent. alcohol, then powder them very lightly with zinc stearate, and apply moist gauze. If there is no distention, I allow all patients in drainage cases to sit up in bed at the end of twenty-four to forty-eight hours. At the end of the third or fourth day I allow them to sit up in a Morris or rocking chair, and they are wheeled out to a sunny porch as soon as possible. But to guard against the dangers which at once suggest themselves as objections to this method, I have devised a system of bandaging, which, while allowing freedom of movement, so effectively encircles the abdominal wall, as to reduce the possibility of hernia to a minimum. Before getting my pa-

tients out of bed, I apply an encircling belt of zinc oxide adhesive plaster which is reinforced at the edges nearest the wound, and at distances from four to six inches, with strips of featherbone, a material used by dressmakers for staying waists. These two pieces encircle the waist obliquely, in such a manner that they cross posteriorly thus permitting their free edges to lie parallel to each other about two inches from either side of the wound. Holes are cut or punched immediately behind the featherbone insert of the edges, and the edges are laced together over a moderately thick dressing which is perfectly moist and divided into two sections one on either side of the wound. This adhesive belt acts as an encircling fascia and no ordinary movements of your patient can in any way interfere with your wound. It is worn with great comfort, and since adopting it I have little or no hesitancy in allowing all abdominal section cases to get out of bed at the end of forty-eight hours. This practice, which was brought to my attention by reading an article on the subject by Dr. Boldt, of New York, has made the convalescence from abdominal operations, once an ordeal from which the bravest might shrink, a period of restful recuperation. Phlebitis is now rarely heard of. The flabby muscle bellies which once required two or three weeks to regain their tone, after the tearing to which they were subjected, are now practically unknown, and it is no uncommon occurrence to see patients after an appendectomy or cholecystostomy sitting up at the table and eating a lunch with a relish after four or five days. Such results as these have made the ministrations of the surgeon a less terrible resort than formerly, while encouraging him to undertake work that once gave him much hesitation. Operations do not mean prolonged absence from business, and the consequent financial losses and mental anxiety.

If there is anything I have endeavored to emphasize in this paper, it is that abdominal surgery meets its most pronounced success by giving minutest attention to details. The drainage that it often demands is heart breaking and wearisome to the man who must have immediate results, but, on the other hand, results will be almost immediate in the average case if the man who wields the knife and lays the drain makes his incision into an abdomen with a firm determination to disturb this human organism no more than he has to, to cut his way cleanly in, not to hack or tear, to do what he has to do as quickly as may be, not forgetting thoroughness. There are some even of the profession who cry "butcher" when a surgeon, in the face of a desperate condition, resorts to desperate means, to give his patient his only desperate chance. But the man who with any sense of responsibility, realizing that perhaps his race with the onrushing forces of death is only a matter of moments, and, therefore, that his only hope is an immediate expulsion of the virus that spells death for his patient, coolly and deliberately and rapidly provides avenues of escape for the pus—that man, I say, is more of a philanthropist and more nearly the ideal physician than the sleek practitioner, who, to save his own record, takes no chance, but pronounces the case hopeless at the start.

532 BROAD STREET.

PITYRIASIS ROSEA WITH PSEUDO VESICLES.

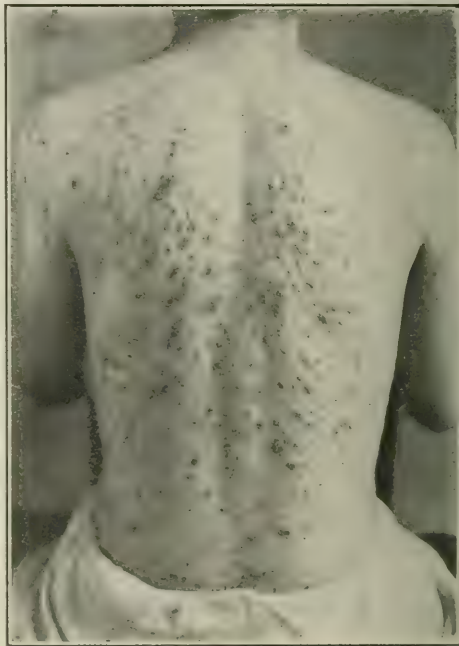
By UDO J. WILE, M. D.

New York,

Chief of Clinic in Dermatology and Syphilis at the Beth Israel Hospital.

Pityriasis rosea, an eruption quite characteristic in its morphology and distribution, offers, as a rule, no great difficulties in diagnosis, either to the dermatologist or to the general practitioner. Atypical cases, of course, are now and then seen where a differential diagnosis between this disease and psoriasis or seborrheic eczema is extremely difficult if not well nigh impossible, but such cases are, in fact, very exceptional.

I recently had the opportunity of studying a case of pityriasis rosea, which, on account of its unusual



Pityriasis rosea with pseudo vesicles.

distribution and morphology and the difficulty of its recognition, seems worthy of the following report.

CASE.—The patient, Miss B. G., presented herself at the Beth Israel Dispensary on July 20, 1909, complaining of a very itchy eruption all over the body. The history elicited the fact that the eruption had begun five days previously on the face, and the day following had spread to the entire body. The itching accompanying the eruption was so intense that for two nights the patient had been robbed of her night's rest.

On examination it was found that the entire body from head to feet, extending even down to the fingers, and excepting only the scalp, was covered with a profuse, distinctly raised, yellowish red, and at first sight seemingly papular eruption. The individual lesions varied in size from a pin-head up to a ten cent piece, and for the most part they were oval or round in shape. Examined closely, the lesions showed very distinct differences in their structure; the

smaller ones were, indeed, papules, but the larger ones having a more distinct yellowish hue seemed to be papules superimposed upon deep seated vesicles. When such were punctured with a needle a drop or two of clear serum could be expressed by firm pressure. As may be seen by the accompanying photograph, in the very large lesions the fluid contents were more superficial and in some instances had ruptured to the surface and in drying had given rise to the crusts and scabs clearly seen in the picture. The mucous membrane of the mouth was entirely normal, but at the anal orifice and within the vulva were numerous small ruptured and unruptured vesicles, not herpetic in outline or character. There was further present a marked general lymphadenitis.

When I first saw this clinical picture my impression was that it was some toxic eruption, and this opinion was shared in by three other dermatologists, who examined the patient at my invitation. The possibility that this might be a case of pityriasis rosea never really entered my mind until the eruption cleared up, although Dr. S. Pollitzer, to whom I showed the patient, suggested that this disease, together with an unusual amount of œdema, might account for the clinical picture. That his surmise was correct is shown by the subsequent history of the patient. The patient was treated with soothing lotions, saline purges, and she was placed on a simple, rational diet. Within twenty-four hours a marked change in the condition had already taken place; the lesions were much flatter and fewer of the vesiclelike elements were to be seen. A few days more brought about the entire disappearance of the latter, and at this time the patient presented the typical picture of an involuting pityriasis rosea, which went on to a complete cure in about five weeks.

I have searched through most of the textbooks on dermatology in German, French, and English, but have not been able to find a record of any case such as is herein described. I believe this case can be regarded as an example of pityriasis rosea in which the œdema was so marked in the deeper layers of the skin that the papules were pushed out, as it were, by the fluid, giving them the appearance of being superimposed upon apparent deep seated vesicles. At the same time the following features distinguish this case further from the ordinary pityriasis rosea: 1, The presence of lesions on the face, hands, forearms, and legs below the knees; 2, the very marked pruritus present; and, 3, the presence of nonherpetic vesicles around the vulva and anus which must, I believe, be considered as part of the clinical picture.

616 MADISON AVENUE.

MEDICAL CHARITY.

By LOUIS H. SCHWARTZ, A. B., M. D.,
New York.

The past two or three years have been unusually hard financially, particularly on the working classes, and those physicians who practise for the most part among the laborers and also work in the dispensaries have had numerous opportunities for studying various phases of the question of medical charity. We have been impressed by the fact that there are two sides to this matter, on the one hand too little is being done so far as helping the deserving, while on the other hand too much aid is extended to those who do not need any. Many times during the winter we are called into the tenements to treat the sick and find cold, bare, rooms lacking even the necessities of life and everywhere signs of the most abject poverty. A great many poor people have a horrible dread of hospitals, and the mere suggestion

of sending one to a hospital will strike terror into the whole family. They regard it as cruel to be prevented from seeing their sick at all times, and furthermore they believe that all sorts of experiments are tried on free patients. Sometimes it is the mother who is sick and if she was removed to a hospital, nobody would be left "to take care of the children and the house." In these cases, what folly to order hot water bags, a bed pan, or other sick room accessory when the family has not the money to buy them! Often the people cannot afford to have the prescription made up. I have frequently in these cases marked prescriptions "Very poor patient," or even gone down to the druggist and asked him to make the charge as low as possible. Some pharmacists have acted very decently on such occasions; many others, however, have charged \$0.35 to \$0.40 for a simple two or three ounce mixture and \$0.30 for a half dozen calomel tablets—this as a special favor to the doctor. War may be hell, but sickness among the poverty stricken is worse. Physicians and nurses, as a rule, are doing their share in these cases by giving their services gratis; yet this is only doing things by halves. To give very poor people who are too sick to go to dispensaries the proper care at home something more is needed.

Here is an opportunity for charitably inclined individuals and philanthropic bodies to do good work. Let stations be established throughout the poorer sections of the city where prescriptions can be filled out properly at nominal fees and where such supplies as fountain syringes, hot water bags, croup kettles, bed pans, invalid chairs, etc., can be kept and loaned out free of charge to poor families, when ordered by the physician. The cost of setting up and maintaining these depots ought not to be great, and I sincerely trust that some such plan will be put into operation, as it will prove to be of the greatest help to the suffering poor.

Unsatisfactory as are our efforts in the home treatment of the needy because of shortcomings, our work in the handling of ambulant cases is even less satisfactory through overactivity. At the dispensaries we treat hundreds of people daily who can well afford to go to a physician's office. At most of the clinics, particularly the large ones, no questions as to the financial condition of the applicant are asked. How many doctors see patients at the dispensaries whom they know to be in circumstances which do not entitle them to free treatment? I know of many physicians who have had this experience and in fact it is rather a common occurrence. Never before have there been such flagrant violations nor so many as in the past couple of years.

What is the cause of this?

1. In the first place, owing to the enormous size of the classes at the clinics, it is stated that they have not the time to inquire into the applicant's condition and therefore no attempt is made to enforce Section 718 of the Criminal Code which makes it a misdemeanor for any person to obtain medical or surgical treatment at any dispensary on false representation. In fact as the well to do patient is not asked any embarrassing questions it is very easy for him or her to go to the dispensary for treatment.

2. Some dispensaries do not want to cut down their attendance. They pride themselves on their

large classes. They are after quantity rather than quality. Yet every doctor knows that all in all a small class is better than a large one. But big figures make a big impression upon trustees.

3. The large dispensaries hold out such inducements that a great many people, though able to pay for treatment, are attracted to the clinic away from the family physician. At the dispensaries they can get x rays, blood examinations, hydrotherapy, mechanical massage, liquid air, electricity, etc., most of which the average New York physician cannot give. Nobody would be in favor of doing away with these diagnostic and therapeutic aids at the dispensaries, but they should be reserved for those who cannot afford to get them privately.

4. Some members of the profession direct their patients to the dispensaries to obtain these treatments or to get a consultation from the professors free. This also would not be objectionable were it restricted to those people who are too poor to afford a consultation. But it certainly is not, and many of these people, thus directed by doctors to the dispensaries, seeing the remarkable facilities there, become regular dispensary customers.

5. Very many patients who employ the general practitioner for ordinary cases, go to the dispensary when they want "specialist" treatment. They have a notion that the family doctor cannot do anything in the specialties, and that to see a specialist privately is something for the very rich only. It is certainly true that general practitioners are, as a rule, sorely deficient in the specialties and that the "specialists" overdo matters both in diagnostic and therapeutic finesse and in the matter of fees.

6. Not a few people who are owners of property and able to pay, have used the cry of hard times as an excuse for getting free medical attendance.

7. Finally, because the dispensaries charge a small fee for medicines, dressings, etc., some people believe that they are not asking charity, inasmuch as they pay for what they get. I have heard this statement made several times. As a matter of fact, the dispensaries ought to be absolutely free—drugs as well as examinations.

Very frequently dispensary patients send some one else for the medicine. You ask, "Why doesn't so-and-so come himself?" They will tell you, "He is working. He hasn't time to come." Or they will ask for double, even four times the regular quantity of medicine in order not to lose any time by coming to the dispensary. Now, in most cases, though not all, where the patient is able to work, he is able to pay for treatment.

These are some of the reasons why the dispensaries are abused. How can we prevent this? How can we manage things so that only the deserving should be cared for in these institutions, for certainly those who supply the funds, and the physicians who give their services, often to the neglect of their private practice, have a right to demand this.

I really believe that the average donor to dispensaries does not know that a large part of his donation goes for the treatment of persons who are in no need of help.

In some cases the remedy is self evident, but what system should be adopted to prevent wholesale frauds? Two plans suggest themselves, either or

both of which should be tried. The first method is this. A patient applying at a dispensary should receive treatment for the day on which he applies. A card should be given him stating that before he can again get treatment he must go to the Department of Public Charities to report and record his case for investigation. It would not be necessary to investigate every case and I believe this work could properly be delegated to the Department of Public Charities and Correction. The district attorney's office should be required to prosecute those who obtain medical or surgical aid under false representations. The mere fact that they must report to the Department of Charities would keep ninety per cent. of the fakirs out.

If for some reason the first scheme could not be put into operation, I suggest that the following be tried. The physicians and donors should get together and form an association for the suppression of dispensary abuses. The association should engage private detectives and locate them in the large clinics. Whenever a physician knows or has good reason to suspect that a patient is violating the law, he should privately call the attention of the detective to the case for investigation. If after investigation the case is found to be fraudulent, the matter should be turned over to an attorney, engaged by the association for prosecution. A few convictions would soon put a stop to the abuse. The cost of putting this plan into operation would be very small—probably not more than \$2.00 per annum a member. With the cooperation of the dispensary authorities, this plan ought to be feasible and effective.

If the dispensary evil could be stopped, and it can if the profession only wakes up to the fact, the amount of money saved annually by these institutions would more than pay for putting into practical operation the proper care of the bedridden, deserving poor at home, as suggested in the earlier part of this paper.

410 EAST EIGHTY-FOURTH STREET.

"NO FREE HYDROCHLORIC ACID IN THE STOMACH."

Remarks on Dr. R. B. Faulkner's Paper.

BY JOHN BALLAGI, M. D.,
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Pathologist, Homestead Hospital.

The strongly worded paper by Dr. R. B. Faulkner with the title *No Free Hydrochloric Acid in the Stomach* (*New York Medical Journal*, lxxxix, p. 1308, June 26, 1900) is very liable to give the reader a distinct shock. No wonder. When one is used to read and hear about free hydrochloric acid in the stomach contents, about the twenty odd ways to identify its presence and quantity there, about its diagnostic and prognostic value, and all at once one has to learn it is a fad or a fraud, and the statements of some of our best known workers in this special field are "vague, contradictory, and confusing"; then the least one can do is to take notice.

So I hoped somebody else—more competent than I am—would take cognizance of the matter and show who is right: Dr. Faulkner, or Ewald, Ric-

gel, Osler, Pepper, and a few others (all "medical men" only and not "expert analysts" though). But nobody has as yet, and I believe statements like Dr. Faulkner's should not remain unanswered. That justifies losing time discussing well known facts.

It is not necessary to add to Dr. Faulkner's numerous citations. We know that our knowledge, not so much of the chemical composition of the gastric juice, but more particularly of the gastric digestion is not complete. That anybody will admit. But we know some *facts* which are very well established. One of those facts is that the normal and the pathological gastric juice contains or may contain at certain times, certain acids. Lactic, butyric, oxalic, acetic, etc., acids, and, first of all, hydrochloric acid *free and combined*, that is, *in or not in combination* with other substances.

Now, Dr. Faulkner flatly denies this. He concedes organic acids but says that mineral acids, in particular free hydrochloric acid does not and cannot exist in the stomach, its presence was never satisfactorily proved and cannot be proved, the tests to prove it being *absolutely worthless*.

Evidently, Dr. Faulkner means by "free hydrochloric acid" a chemically pure, concentrated acid. That is his first mistake. Free hydrochloric acid is a colorless *gas*, not a *liquid*. It draws moisture from the atmosphere very quickly, forming a host of chemical combination (not merely a mixture) with water. Thus, it is no wonder when "free hydrochloric acid is never found in nature," except as a volcanic product. What we call hydrochloric acid is a watery solution (or combination) of it, containing thirty-two per cent. pure hydrochloric acid, consequently not "free" and not concentrated. "Free hydrochloric acid in the stomach" is a misnomer anyhow and means only *not combined with other substances* except water. That is why Jaksch recommended the name "physiologically effective hydrochloric acid," meaning hydrochloric acid not yet consumed by the digestive process. This name would be all right but it is too unwieldy. So it happens that "free hydrochloric acid," although improper, remained in common use as more convenient and too long in usage.

The free hydrochloric acid of the gastric juice is a *weak* watery solution, normally not stronger than 0.10 or 0.20 per cent. About its existence in the stomach there is "no conflict of opinion between chemists and medical writers." I take the first two textbooks of chemistry being at hand. Hinds, professor of chemistry, University of Nashville, writes (*Inorganic Chemistry*, second edition, p. 238, New York, 1905): "It (hydrochloric acid) is a constituent of the gastric juice of vertebrate animals." Later again on page 272: "If largely diluted it may be taken into the stomach without injury." I suppose from 0.10 to 0.20 per cent. is largely diluted. Dr. Leffman, chemist, State Board of Health of Pennsylvania, says (*A Compend of Chemistry*, fourth edition, page 165, Philadelphia, 1895): "Two important constituents are characteristic of it (of the gastric juice), *free* hydrochloric acid and a nitrogenous ferment, pepsin." He gives the strength as 0.25 per cent. Dr. Faulkner may quite boldly dip his finger in a solution of this strength for a

long time. More than that, he may drink a little of it too. It would not hurt him. Did he never prescribe a hydrochloric acid mixture for his patients? If he did, he most probably prescribed a 0.10 or 0.15 per cent. solution. In certain pathological conditions the free hydrochloric acid of the stomach may reach as high as 0.30 or 0.35 per cent. In short, there is no reason why free hydrochloric acid or, if we wish to be correct, a watery solution of physiologically effective hydrochloric acid, could not exist in the stomach. How it is formed there and from what, is irrelevant for the present. But it seems that the greatest part of it is directly secreted by the mucosa gastrica. We know of no reason to contradict this.

Dr. Faulkner would not be convinced of his being on the wrong side before the hydrochloric acid is not "separated" from the stomach contents. Well, that can be done and his wish was fulfilled as long as thirty years ago, the first time by Richet in Paris, upon advice of the famous French chemist Berthelot, by extracting all organic acids with ether and the remaining (and in ether insoluble) hydrochloric acid with water. Merring and Cahn (in 1886) distilled over the volatile acids, extracted with ether the lactic acid and with water the hydrochloric acid. Further, they gave cinchonine to the watery extract and "separated" the hydrochloride of cinchonine thus formed with chloroform. Adding to this silver nitrate (the characteristic reagent of all soluble chlorides), silver chloride resulted. The quantity of silver chloride indicates the amount of pure chlorine, and that the amount of hydrochloric acid. (For particulars see *Deutsches Archiv für klinische Medizin*, xxxix, p. 233, 1886. Again Ljöqvist, in 1889, added barium carbonate to the gastric juice, thus replacing the carbon dioxide with the respective acids of the stomach, forming different barium salts; the hydrochloric acid in particular, barium chloride. After burning the whole mass the soluble barium chloride can be extracted with water out of the ash, the other insoluble salts remaining. The barium chloride of the wash water may be titrated with kalium bichromate, or, after repeated washings and evaporating may be directly weighed, and to the chlorine and the hydrochloric acid estimated.

All these and several other procedures give very accurate results, are not very difficult, and do not require an expert analyst. Any physician with a reasonable practice in laboratory work can execute them. However, for the everyday clinical or private practice they are not suitable, mostly on account of consuming much time. On this account Günzburg, Boas, Riegel, and others recommended the tests with phloroglucin, vanillin, resorcin, Congo red, benzopuerpurin, tropæolin, etc. All color tests.

Now comes Dr. Faulkner and does not allow any place for any color test in scientific chemistry at all. (Incidentally, I should not object to his calling us who believe in color test "rainbow chasers." But I protest against comparing us with Christian Scientists.) His criticisms are very easily disproved.

The same Professor Hinds I cited before divides quantitative chemistry into four branches: gravimetric, volumetric, *colorimetric*, and photometric analysis. He is an expert chemist, not merely a "medical man," so he ought to know if color tests are

worth mentioning. Does Dr. Faulkner not remember his "school days?" What is the classic test, the change of color of the litmus paper if not a color test, applied a hundred times a day in a laboratory? What is the blue coloring of the starch through iodine, the black precipitate (common ink) of iron salts through tannic, the brown color of the boiled diabetic urine with potassium hydroxide, the beautiful green rings in icteric urine by adding nitric acid to it, the Hessler test, the spectral colors, etc.? Are these all worthless?

A few of the color tests are not quite reliable—mostly on account of different color perception ability. But that is no reason to condemn all and say: "A color test is not a chemical analysis." Certainly it is, or at least, a very important part of it. By the color test a chemist (and not a very skilled one) is able to detect (potassium iodide-starch-ferrocyanide process) one part of iron in ten million parts of water, that is, 0.02 of a milligramme in 50 c.c. of water. That is exact enough, I suppose.

Lastly, the doctor presents some chemical experiments of his own, with potassium binoxalate, sodium chloride, lactic acid, tartaric acid in different mixtures. He alleges they all gave the Günsburg reaction. Certainly they do. But if the doctor thinks he may use these experiments for proving his theory then he is mistaken. Oxalic acid as he rightly remarks, decomposes sodium chloride with evolution of hydrochloric acid, but so do other acids. He simply produces free hydrochloric acid by mixing salt and lactic or tartaric acid and heating it. In experiment No. 3 he does not put in any acid, but the potassium binoxalate he uses, being a very unstable preparation, gives off oxalic acid. Result, oxalic acid+salt+hydrochloric acid. Dr. Faulkner involuntarily gives further proof for the correctness of the Günsburg test. Not potassium binoxalate, or the tartaric or lactic acid, or the sodium chloride caused in his experiments the pretty rose red color but the freshly formed hydrochloric acid.

I suggest that the doctor again perform his experiments, but leave out the sodium chloride this time.

438 FIFTH AVENUE.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCI.—What is your experience in the therapeutic use of thyreoid feeding? (Closed October 15, 1909.)

XCII.—What are your views on the open air treatment of pneumonia? (Answers due not later than November 15, 1909.)

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Answers due not later than December 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every

answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question XC has been awarded to Dr. M. P. Ferstler, of Brooklyn, whose article appeared on page 861.

PRIZE QUESTION XC.

THE TREATMENT OF TYPHOID FEVER.

(Continued from page 913.)

Dr. George S. Wolff, of Brooklyn, observes:

Definition: Typhoid fever is an acute infectious fever having an average duration of a month, caused by the *Bacillus typhosus* of Eberth, and characterized by the presence of asthenic, nervous symptoms, a rose rash, intestinal ulceration with a tendency toward hemorrhage, and an enlargement of the spleen and mesenteric glands.

The treatment of this disease may be divided into 1, prophylactic and 2, remedial. The remedial may be subdivided into a, hygiene, b, dietetic, c, hydrotherapeutic, and d, medicinal.

1. **Prophylaxis.** Where typhoid is prevalent or suspected, the disease can be avoided by adhering to the following suggestions: Do not use water or milk unless it has been previously boiled. The water should be boiled no matter for what purpose used, ingestion or cleansing. The ice should come from a pure source. Oysters should not be eaten raw. Flies have been shown to be typhoid carriers, therefore screen all houses carefully.

The doctor and nurses in attendance should be scrupulously clean. The doctor should wear a gown in the typhoid room and before leaving should wash his hands in a one to five thousand solution of bichloride and the nurse likewise. The nurse should carefully disinfect all excreta of a typhoid patient with a one to five hundred acidulated solution of bichloride. All utensils of the sick room, from thermometers to bed pans, should be disinfected. All bed clothes and patient's clothing should be first soaked in a one to twenty solution of carbolic and then be boiled for three hours.

Preventative inoculations have been employed with some degree of success.

2. **The Remedial Treatment.** First and foremost, obtain two competent nurses for day and night service.

(a) **Hygienic.** The sick room should have a southerly exposure preferably, be well ventilated at about 60° F., and admit sunlight. Have a narrow bed and place it in the centre of the room. Remove all unnecessary furniture and drapery.

The mouth of the patient should be cleaned often with soft cotton swabs dipped in a saturated solution of boric acid. The patient's clothing should be made so it can be easily removed when necessary. The patient should not be permitted to make any unnecessary muscular movements.

(b) **Dietetic.** During the disease, and when fever is present, water, milk, and eggs should be the sole diet. Water should be boiled and given at fixed intervals. It helps to dilute the toxins and flushes out the kidneys. Milk is the best food for a typhoid

patient, being better than broths, since the latter are an excellent medium for typhoid germs before being attacked by the digestive fluids. About one and a half quarts of milk should be used daily. For an adult, about four ounces every four hours. It can be seasoned with a pinch of salt. Add lime water if milk nauseates the patient. If curds are found in the stools, peptonized milk can be used. If the patient sickens of the milk, egg albumin water, flavored with orange or lemon juice, is an excellent substitute. No solid food should be given until every trace of temperature has disappeared for at least seven days.

(c) *Hydrotherapeutic.* When the rectal temperature is above 102.5° F. sponging in mild cases with tepid or cold water is excellent. Limb by limb, the back, and then the abdomen is sponged. Fifty per cent. alcohol can be added to the water. This sponging serves two purposes, it lowers the temperature and cleanses the patient. In severe cases, where marked nervous symptoms are prominent, the pack or tubbing may be used. The former is accomplished by wrapping the patient in a sheet wrung out in water, about 65° F., then sprinkling cold water from an ordinary flower pot on the patient, employing intelligent friction at the same time. After the sponging or the wet pack, the patient is immediately dried, wrapped up warmly, and given a glass of hot milk. In my experience, private patients and friends object to the "tubbing" treatment. It can only be done in hospital work.

(d) *Medicinal.* We have no specific medicines for typhoid, a simple case needing practically no medicine. It is the complications of the disease which require medicines. When called to a patient I usually give calomel, grain 1/6, every 15 minutes until six doses have been taken, to be followed by a saline in the morning.

Alcohol should only be used when necessary and not as a routine. If used when indicated and judiciously, it strengthens the patient, reduces temperature, improves digestion, and tones up the patient. When the heart sounds become feeble and there is marked asthenia, alcohol is indicated. Give it in definite doses and at definite times, about one half ounce, repeat after three hours. So long as the alcohol reduces temperature, lowers the pulse rate, and causes a moist tongue and skin, alcohol should be continued.

In tymanites give oil of turpentine stupes, or enemata with a rectal tube, in three minim doses by mouth. Stop milk for a while.

In delirium and restlessness hydrotherapy is excellent. In the first week codeine, gr. ¼, is good; sometimes morphine, gr. ⅓.

Diarrhoea. If less than six stools per day it is salutary. If over, bismuth in large doses or the lead and opium pill may be given.

To overcome constipation order mineral waters or an enema of oil of turpentine, one ounce; castor oil, one ounce, in soapsuds, one pint.

For hæmorrhage order absolute rest; stop baths, while sponging may be done; withhold all food for ten hours. Morphine, grain ¼, hypodermically, one dose. In extreme cases, hypodermoclysis or venous transfusion: a Leiter coil over abdomen and calcium salts are also excellent.

In perforation immediate operation is absolutely essential.

Bed sores. A good nurse prevents them. Remove pressure by pads or rings.

Stimulants are usually not required before the third week. Alcohol, as described; digitalis and strychnine may be used.

Treatment of convalescence. Do not allow any solid food and do not permit patient to leave his bed until the temperature remains normal for seven days. After two weeks, the patient may walk a little. Tonics such as iron, quinine, strychnine sulphate, and cod liver oil may be given.

Dr. W. F. Bopp, of New York, remarks:

Typhoid fever is an acute infectious disease, characterized by swelling of the lymph nodes of the intestine, the mesenteric glands, and the spleen. The infection generally enters the body by swallowing food and drink contaminated by the discharges of previous cases. Characteristics of the disease are: High fever with a proportionately slow and frequently dicrotic pulse, marked wasting, diarrhoea, at times with tympanites, headache, insomnia, and finally in the second and third week apathy and prostration. The disease is self limited and the treatment, as-up to the present we have no specific, must be symptomatic. Yet in no other disease does so much depend on careful and painstaking nursing. The diagnosis is made on the clinical symptoms: The peculiar temperature curve, slow dicrotic pulse, rose spots, enlarged spleen, and diarrhoea, substantiated by a positive Widal reaction and an absence of leucocytosis. A negative Widal reaction by no means rules out typhoid fever, such cases are frequently grouped as paratyphoids. The ophthalmoreaction of Chantemesse as a diagnostic aid is not reliable.

Having made the diagnosis of typhoid fever, the patient is put to bed and isolated. No one should be permitted in the room but nurse and doctor. Careful instructions should be given the nurse that all excretions must be received in easily cleaned vessels and thoroughly disinfected before being emptied into the closet. It is best thoroughly to mix the urine, fæces, and vomitus with chlorinated lime or carbolic acid, and permit them to stand for two hours in covered vessels. After use the vessels are to be thoroughly scalded with boiling soda solution. Sputum should be received on small gauze pieces, the soiled pieces collected in a paper bag and the whole burnt. Handkerchiefs, if used for this purpose, must be boiled before being sent to the laundry. All bed linen, clothing, etc., which is washable, should be soaked for one hour in some disinfecting solution before being washed. Such articles as cannot be washed and boiled should be disinfected by steam or dry heat. Dishes should be boiled in a solution of soda.

The patient, when first seen, is to receive a good dose of calomel, after this initial dose no other purgative is given. The bowel is to be washed out daily with three pints of lukewarm water, care being taken not to have the water under too high a pressure. The rectal tube is contraindicated because of the danger of starting a hæmorrhage or of perforating an ulcer. Dilute hydrochloric acid, gtt. x, in

water is to be administered three times daily. No other medication is necessary, except rarely a dose of antipyrine at night.

In hospital practice, should the temperature rise to 102.5° F. I resort to the full bath; beginning with the water at a temperature of 90° F. and reducing it to 70° F. with the patient in the tub. Should the lips become blue and the patient shiver, the bath must be stopped and whiskey given. In private practice a sponge or sheet bath is much to be preferred.

Too much attention cannot be given to the diet. In mild cases milk diluted with lime or vichy may be used. Buttermilk may at times be substituted to vary the monotony. Should tympanites develop, the milk diet must be discontinued and a diet of thick soups given instead. In all severe cases it is better to start with the soup diet at once, i. e., burnt flour soup, barley, oatmeal, pea, lentil, and farina soups, well cooked and strained. Plenty of fresh, cool water should be given. Permitted are lemonade, orangeade, tea, coffee, cocoa, and water-ice. The patient should be fed at regular intervals, frequently but with limited quantities. I have the impression that there is a distinct tendency to overfeed typhoid patients. If the disease is very severe or the patient is in stupor, food must be given during the night also at regular intervals. Alcohol must be given only in cases of cardiac weakness or as a stimulant after a cold bath. Ten days after the temperature has reached normal, solid food is resumed. The patient is allowed to sit up at the end of the first week of convalescence. Should a relapse occur, the routine treatment is resumed.

In case tympanites develops stop milk in every form and apply oil of turpentine stupes to the abdomen. Should an intestinal hæmorrhage occur, insist on absolute quiet, stop all baths, sponging, etc., give nothing by mouth for twenty-four hours except a little cracked ice and a mixture of opium, gr. ss; lead acetate, gr. ij; and bismuth, gr. x; tannic acid, gr. v, may be substituted instead. In addition apply the Leiter coil or an ice bag to the abdomen. I do not stop the irrigations. Should perforation occur, an immediate laparotomy is indicated. Venous thrombosis is to be treated by an ice bag and rest and support of the affected limb. Later gentle massage and an ichthyl dressing are useful. For heart weakness give alcohol, camphor, digitalis. Pneumonia must be treated in the routine way. Peritonitis, cholelithiasis, pyothorax, etc., must be treated surgically.

Dr. Gustavus Eliot, of New Haven, Conn., writes:

The first requisite to the successful treatment of typhoid fever is a prompt diagnosis. If one believes that an exact diagnosis cannot be made until the patient has been sick for a week, rose spots have been discovered upon the abdomen, and the Widal reaction has been obtained, he at least should not overlook the possibility of the existence of the disease during his first examination of the patient, and if it cannot be excluded, such a treatment should be immediately commenced as would benefit the patient, if he should be suffering from typhoid fever. If, later, it becomes certain that this disease is not present, such treatment will have done the patient no harm. If typhoid fever is recognized, or suspected,

the first and most important factor in the treatment is rest. The patient must immediately be put to bed, and kept there until he is convalescent. He must not be allowed to get out of bed, or to sit up in bed. He must not be allowed to travel, even to go home, if he has been taken sick away from home, unless his life is of less value than the expense of being properly cared for away from home.

His mind must be kept at rest as well as his body. He must not receive callers, either friends or business associates. He must not discuss business affairs, nor read, write, or dictate letters. He must not read newspapers, magazines, or books.

Next to rest of body and mind stands rest of the digestive organs. This cannot be made complete by entirely withholding food, but must be made partial by giving easily digested food at regular intervals. Nature has pointed out a suitable food to fulfil this indication by providing milk as a food for infants. The patient with typhoid fever should take from four to eight ounces of fresh milk every two hours, except when he is asleep at night. If fresh milk seems to disagree, it should be modified by the addition of sodium chloride or lime water, by dilution with water, carbonated water, or by peptonization with extract of pancreas. If other foods are given, the patient's temperature must be watched, and if it increases, they should be withheld. Increasing temperature indicates that the patient's condition is becoming more serious. Declining temperature and pulse indicate that his condition is improving. If the patient's temperature is declining toward normal, and he is taking two quarts of milk every twenty-four hours, there is no danger that he will die of starvation.

Rest and diet are the most important factors in the treatment of typhoid fever. Drugs are of less importance, but often indispensable. No medicinal treatment produces more obviously favorable effects than the so called specific treatment advocated by Roberts Bartholow and James C. Wilson nearly thirty years ago, and used by many physicians since: Give four grains of calomel every other day, until four, five, or six doses have been taken. If hypercatharsis is produced, counteract it with a few powders, each containing ten grains of bismuth subnitrate and one twelfth of a grain of morphine sulphate. If salivation is threatened wash the mouth every hour with a two per cent. solution of potassium chlorate. Also give, every four hours, in a wineglassful of cold water, four drops of a mixture containing one drachm of carbolic acid and three drachms of tincture of iodine. This medication will clear out the alimentary canal, will diminish fermentation and tympanites, will limit congestion and ulceration of the intestinal mucous membrane, and thereby lessen the tendency to diarrhoea and to intestinal hæmorrhage and perforation. It will also reduce the temperature, and consequently lessen or entirely prevent delirium and insomnia, and shorten the duration of the disease.

Should the patient have neglected to avail himself of treatment during the early part of the disease, or should an ineffectual plan of treatment have been adopted, various complications will demand special treatment. Protracted high temperature damages all of the patient's tissues and endangers

his life. Five grain doses of acetphenetidin, repeated every two hours while the temperature is above 102° F., after the first week of treatment, make the patient's condition more tolerable, and do him and his heart less harm, than a continuous temperature of 104° F. Cold sponging affects the temperature slightly, if at all, but has a sedative action upon the nervous system. Placing the patient in a tub of cold or cooled water, is generally impracticable, is usually very disagreeable to him, and rarely accomplishes anything which cannot be effected by easier and more agreeable methods.

If there are insomnia and delirium give fifteen grains of sodium bromide during the day. If this is ineffectual give ten grains of hydrated chloral every half hour at night until the patient sleeps. These drugs, administered with discretion, are less dangerous than protracted insomnia and violent delirium. They are more reliable and not less safe than the numerous newer hypnotics.

Diarrhœa can generally be controlled by bismuth and morphine.

Constipation should be relieved by drachm doses of magnesium sulphate, repeated every two hours.

Intestinal hæmorrhage should be treated by the application of cold to the abdomen, the internal administration or hypodermic injection of ergot, and the hypodermic injection of morphine sulphate.

Intestinal perforation demands repeated hypodermic injections of morphine sulphate. Laparotomy may occasionally be survived under otherwise favorable conditions.

Alcoholic stimulants should not be given unless demanded by cardiac weakness. They may be supplemented, if necessary, by strychnine sulphate.

"Never abandon a case while there is life." (Da Costa.)

(To be concluded.)

Therapeutical Notes.

The Administration of Colchicum in the Treatment of Gout.—In the *Presse médicale* for September 18, 1909, Martinet draws attention to the cumulative effects of colchicum and the uncertain character of the galenical preparations of the plant. He cites the aphorism applied to the use of digitalis: *Ni trop, ni trop peu, ni trop souvent, ni trop longtemps* (not too much, not too little, not too frequently, not too long continued), and indicates that this applies to colchicum as well. The seeds of colchicum possess the greatest activity and this is the only part of the plant that should be employed in the form of powder, extract or tincture. A combination of colchicum and digitalis is sometimes useful, as in the following prescription:

R Hydroalcoholic extract of colchicum, gr. $\frac{1}{4}$;
Extract of digitalis, gr. $\frac{1}{4}$;
Dover's powder;
Sodium benzoate, aa gr. $\frac{3}{4}$;
Castile soap, q. s.

M. ft. pil. No. i.

Sig.: Four to six pills during the day, according to how they are tolerated by the patient.

If the simple ten per cent. tincture of colchicum seed of the *Codex* is given, the single dose should consist of twenty drops, eighty-five drops being

taken daily, or 340 drops during twenty-four hours. The dose should be carefully regulated, and increased to the point of toleration, shown by the appearance of diarrhœic stools, when the medicine is stopped. In cases where the drug is well tolerated the dose is progressively increased, forty to sixty drops being given on the first day, sixty to one hundred drops on the second day, and 100 to 150 drops on the third day, particular attention being paid meanwhile to the action of the bowels. (It is understood, of course, that these doses represent the total amount given during the day in divided portions.) If diarrhœa comes on the medicine is stopped. In the event of the simple tincture being badly tolerated, diarrhœa, etc., setting in, the following combination is prescribed:

R Tincture of aconite (ten per cent.), 3i ;
Tincture of belladonna, ℥xxx ;
Tincture of colchicum seed (ten per cent.), 3i ;
Alcohol, }
Glycerin } 3i ;
Sodium bicarbonate, gr. lxxv;
Syrup of five roots (French Codex), 3i ;
Infusion of ash bark, q. s., ad, 3iv .

M. et Sig.: One tablespoonful twice or three times daily.

In the case of the drug being rejected by the stomach, an enema is to be prescribed of the following composition:

R Tincture of colchicum seed, ℥xv ;
Wine of opium, gtt. x ;
Marshmallow water, 3iiss .

M. ft. enema. Sig.: One or two to be given during twenty-four hours.

The administration of colchicine, which is official in the *Codex*, affords accuracy of dosage and effects. The ordinary maximum single dose is 1/65 of a grain. In acute cases granules or pills containing this dose may be given four to six times daily for the first day of treatment, the daily dose being gradually reduced until on the fourth day of treatment only one to two granules are taken, when the administration of the medicine is stopped for one week.

The action of the colchicum may be reinforced by the combination of such synergetic drugs as squills, bryonia, euonymus, ash, guaiaac, aconite, arnica, sodium benzoate, sodium salicylate, the salts of lithia, etc. The following pill is recommended as a substitute for Lartiques's antigout pill:

R Extract of digitalis;
Extract of squills, aa gr. 1/7;
Extract of colchicum corn, gr. $\frac{1}{8}$;
Extract of colocynth, }
Quinine sulphate, } aa gr. iss.

M. ft. pil. No. i. Sig.: One pill to be given three or six times a day for the first day and two or three times a day on the following days.

A powder resembling the Pistoia powder, of the following composition, may also be given:

R Lithium carbonate, gr. xxx;
Pulverized colchicum corn, 3v ;
Pulverized bryonia root, } aa 3ii ;
Pulverized gentian root, }
Pulverized chamomile flowers, } 3iiss .
Pulverized betony flowers, 3iiss .

Mix and divide in papers of thirty grains each.

Sig.: One powder divided in four cachets is taken with water during the day.

In closing the author emphasizes the necessity of strict surveillance of the patient during the administration of colchicum as cases of poisoning have come under his observation, and that of others.

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NEW YORK, SATURDAY, NOVEMBER 13, 1909.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The dedication of the new building of the Col-
lege of Physicians of Philadelphia, on Wednesday
the 10th, marks an epoch in the history of this ven-
erable and dignified medical society. In the de-
partment of Original Communications in this is-
sue there will be found a paper by the honorary
librarian, Dr. Frederick P. Henry, which gives the
important points in the history of the college.

The exercises at the new building, at Twenty-
second and Ludlow Streets, consisted in the delivery
of the keys to the president of the college by Dr.
William J. Taylor, chairman of the building com-
mittee, followed by short addresses by Dr. John
S. Billings and Dr. Charles L. Dana, of New York;
Dr. Robert M. Fletcher, of Washington; Dr. Regi-
nald H. Fitz, of Boston; and Dr. Frederick P.
Henry, of Philadelphia. Dr. James Tyson, the
president of the college, delivered an oration deal-
ing with the history of the institution.

The following eminent members of the medical
profession were given certificates of associate fel-
lowship: Dr. Archibald B. Macallum, of Toronto;
Dr. Frank Billings, of Chicago; Dr. Charles L.
Dana, of New York; Dr. George W. Crile, of
Cleveland; Dr. Oliver F. Wadsworth, of Boston;

Dr. Edward G. Janeway, of New York; and Dr.
Franklin P. Mall, of Baltimore. In the evening
a banquet was given at the Bellevue-Stratford
Hotel. On Thursday the building was open to the
inspection of the public, and in the evening a re-
ception was given to the fellows, their wives, and
invited guests, at which an address was delivered
by Dr. S. Weir Mitchell.

The new home of the College of Physicians is
in every way a fitting domicile for a scientific body
which represents the high ideals and splendid tra-
ditions that this society has always stood for. Its
magnificent library is housed in a manner befitting
such a valuable possession; its museum has an ade-
quate setting; its meeting rooms are artistic; and
its work rooms are both handsome and convenient.

THE PHYSICIANS OF PHILADELPHIA.

Rarely has there been an occasion so fraught
with interest to the entire medical profession as
the dedication of the new building of the College
of Physicians of Philadelphia, which is described
at some length in our news columns. The com-
pany of men who gathered to do honor to the occa-
sion embraced many whose names are known
throughout the scientific world. From half a dozen
cities came men to receive the honor of associate
fellowship in this, the oldest local organization of
physicians in America. The physician has ever
occupied an important place in the life of Phila-
delphia. As was pointed out by one of the speak-
ers in the dedicatory exercises, the term physician
and surgeon in that city has always stood for
scholar and gentleman. It is here that the physi-
cian has received the highest recognition, and it is
here that he has contributed most to the civic life
of the community. It is not surprising therefore
that this city should be the home of the oldest and
one of the most dignified and most elevated local
organizations of physicians in America.

We regret that the limitations of space and the
exigencies of publication make it impracticable for
us to present a verbatim report of the series of
remarkable addresses made on the occasion of the
dedication on Thursday afternoon. Each of these
was terse but pregnant with thought, polished and
pointed. That profession may well be proud which
can give rise to such an occasion and which can
produce on such an occasion such speakers. Of
the building it would be difficult to say too much
in praise. Simple yet stately and dignified in con-
tour, chaste yet elegant in finish, ample in dimen-
sions, rich in appointments and ideally suited to its
purposes, the hall of the College of Physicians of

Philadelphia will long stand as a monument, not only to the intelligence, the taste, and the altruism of the medical profession, but also to the commanding position which that profession occupies in the city of Philadelphia.

THE FORTIETH ANNIVERSARY OF THE GERMAN HOSPITAL AND DISPENSARY.

The *Deutsche Hospital und Dispensary* will, on Saturday, November 13th, celebrate its fortieth anniversary. Its development can be taken as a true picture of the growth and progress of the Germans in New York. The German Dispensary was founded on January 19, 1857, and opened its doors on May 28th of the same year, at No. 132 Canal Street. From there it moved to Second Avenue, near Eighth Street, and is now situated near the hospital in Seventy-seventh Street. But before 1857 there had existed a German Society of Physicians for the Poor, which, in 1856, consisted of sixty-two members who gave free advice and treatment to the German poor, while the *Deutsche Gesellschaft* paid the drug bills and other expenses. Soon it became evident that neither the dispensary nor the physicians for the poor could answer the purpose, and that what was really needed was a hospital. Consequently the Hospital Society was formed in 1862, and seven years later, on September 13th, the hospital was opened. Then it comprised one building with eighty beds; to-day it takes up a whole city block and provided, in 1908, 78,578 sick days for 5,476 patients, while in the dispensary there were treated at the same time 22,558 patients, who made 75,894 visits. Seventy-one per cent. of the hospital patients received free treatment, and fifteen per cent. paid a nominal fee, which did not cover the expenses, which expenses for a ward patient were in that year \$2.10 a day, and in 1904 \$1.74. The city of New York contributed to the expense, after 1899, sixty cents for medical and eighty cents for surgical patients a day. The ground upon which the buildings were erected was leased from the city for a nominal rental of one dollar a year. But the city presented the property to the hospital in 1906 upon the payment of \$5,000.

This is, in a few words, the history of an institution which has become a blessing to the city, thanks to the untiring efforts of its members, who are always ready to assist by advice, counsel, and financial help. "*Möge das deutsche Hospital fürder sein eine Stätte des Heiles, der Liebe, und der Barmherzigkeit, den Leidenden zum Segen, und den Deutschen der Stadt New York zu Ruhm und Ehre!*"

LEUCOCYTES IN MILK.

Dr. H. C. Campbell, of the Pathological Division of the Bureau of Animal Industry, has recently, in cooperation with the Pennsylvania Live Stock Sanitary Board, made a study of the significance of leucocytes in cows' milk, of their connection with the presence of various bacteria, and of the effect of heat in giving rise to an apparent increase in their number. The account of his investigation is given in the bureau's *Bulletin* No. 117, issued October 18th.

The number of cellular elements contained in milk, says Dr. Campbell, does not usually exceed 500,000 to the cubic centimetre. Apart from the colostrum corpuscles of the first week of lactation and from the frequent epithelial cells derived from the teats of the cow or the hands of the milker, they are practically all leucocytes, which are always present in small numbers in normal milk. In their morphology they correspond to the polymorphonuclear cells of human blood. They cannot be looked upon as pus cells unless they are present in large numbers and associated with pyogenic microorganisms. When they are unusually numerous and associated with such organisms, the inference is that there is an inflammation of the udder, streptococcic mastitis, though some observers contend that they increase in number when milking is carried on until late in the period of gestation.

The demonstration of mastitis by the presence of leucocytes in milk, says Dr. Campbell, would be of very great importance, as it is a well known fact that such an affection cannot always be established by an examination of the udder, especially in its early stages, and there are even instances in which the disease might pass off without giving any clinical evidence of its existence. "However," he adds, "with the technique heretofore employed in the numerical determination of leucocytes, there is too narrow a margin between the leucocytes found in the milk of healthy cows and in that of diseased cows to make the majority of these methods of diagnosis satisfactory and practicable."

Dr. Campbell describes the essential features of the various methods of determining the number of leucocytes in milk, and states that they have all been used by him in his investigation. During the progress of his work, in August, 1908, Russell and Hoffman published in the *American Journal of Public Hygiene* a paper in which they called attention to an apparent increase in the number of leucocytes in milk after its subjection to heat. Campbell confirms their statement and accepts their explanation of the phenomenon, which is as follows: "When milk is heated for ten minutes at 60° C. the creaming power

is greatly diminished. The fat globule clusters are broken down and the butter fat is more or less homogeneously distributed throughout the milk serum. These fat globule aggregations rise steadily to the surface and probably entangle a good many of the cell elements, but with the more homogeneous emulsion of the fat due to the action of the heat the leucocytes are probably not enmeshed and are therefore free to respond to the action of gravity." He regards heating as a useful step in the examination of milk with regard to the estimation of its cellular contents, and he therefore thinks that the accepted standard of 500,000 leucocytes to the cubic centimetre should be raised. The final cooling in the process of pasteurization does not do away with the increase of the apparent number of leucocytes caused by the preliminary heating.

Dr. Campbell has frequently observed that the streptococci which occur with large numbers of leucocytes are in narrow curved chains, and it appears, he says, that pathogenic streptococci are usually of this type. On the other hand, he adds, some forms of lactic acid bacteria may be mistaken for small, short, and thick chains of streptococci occurring coincidentally with large numbers of leucocytes should be regarded seriously and as evidence that the milk is unfit for consumption.

PHILANTHROPY RESENTED.

In the time of the civil war a pamphlet entitled *The New Gospel of Peace* acquired some vogue in the North. In it the Conservatives ("Knsuvvatives") were defined as those who, when they had fallen into hot water, would suffer no man to pluck them out, lest they be scalded. Perhaps some such definition might be applied to the few good souls in the South who at the present time express resentment at Mr. Rockefeller's establishment of a commission to work for the extermination of the hookworm disease.

These supersensitive persons must be very few in number and possessed of little influence, for the people of the South are men and women of sense, and they know that improvement of the health of any part of the country is of benefit to the nation as a whole. They know, moreover, that assistance in sanitation is offered to them from the kindest of motives and without a shadow of imputation. They have some peculiar problems to struggle with, and we feel sure that they will welcome cooperation even if it comes from a distance.

In the task of rooting out such a disease as uncinariasis it will be necessary to spend a good deal of money, and the establishment of a large fund for the purpose is sure to aid powerfully in the undertaking. After all, the people of the South will themselves have to do the greater part of the work, but there is no reason why they should hesitate to recog-

nize the community of interest felt in the North as in no way derogatory to their own section. Such recognition is sure, we believe, to be accorded and the cooperation accepted in the spirit in which it is meant. A sure indication in that direction, we take it, is the attitude of the people of the South toward the work of a general educational board that we all know of.

THE PHYSICAL CONDITION OF STUDENTS.

At one of the larger universities, where medical examinations have been obligatory for the past four years, and where the students compare favorably physically with those of other colleges, the conditions revealed by the examinations justify a plea for thorough medical inspection, not only in the public schools, but in all colleges and private schools. At the college to which we refer, a young girl, for instance, who had believed herself to be perfectly healthy, except that she "got out of breath so easily," was found to have a double mitral lesion with marked aortic regurgitation. This girl was exceedingly anxious to play basket ball and had played for two years in the high school.

In cases where the safety of the other students in the dormitories is involved, as in tuberculous disease, a committee on hygiene and sanitation, composed of medical men, determines whether the students affected shall be allowed to remain in the college. It seems to us that this practical plan might be adopted by other institutions. The department of preventive medicine and hygiene which Harvard Medical School has established this year is a step forward, but the lack of medical inspection at Radcliffe College indicates that practice does not always keep pace with theory at Harvard. Why should not preventive medicine, like charity, begin at home?

Obituary.

GABRIEL GRANT, M. D.,
of New York.

Dr. Grant, a retired practitioner, died on Monday, November 8th, at his home, in New York, aged eighty-three years. He was a native of New Jersey. He was a graduate of the College of Physicians and Surgeons, of New York, of the class of 1851. In the early days of the Panama Railroad he took a conspicuous part in sanitation and hospital organization on the Isthmus of Panama, and in the civil war he served most creditably as a volunteer medical officer of the Federal army, from which he was retired for disability due to a wound received while operating under fire. For his bravery on that occasion Congress voted him a medal of honor. Dr. Grant was a gentleman "of the old school," a genial and lovable man.

THE NEW HALL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The Dedication Gives Occasion for Interesting Exercises—Associate Fellowships Conferred on Nine Distinguished Physicians.

IT was a notable company of men who gathered in Philadelphia on Wednesday and Thursday of this week to celebrate the completion of the new building of the College of Physicians of Philadelphia. New York and Chicago, Washington and Baltimore, and other places sent delegates to convey to this, the oldest local association of physicians in America, congratulations upon having achieved so great a measure of success both professional and material. The building which was for the first time

opened to the members on Thursday is of noble proportions, of chaste but effective design, and both in its exterior plan and interior arrangement admirably suited to the dignified uses for which it is destined. The \$300,000 which the building cost has been expended with taste, with judgment, and with the happiest results. The citizens of Philadelphia, as well as the medical profession, have reason to be



proud of this notable addition to the public buildings of that city. It is provided with a sufficient number of rooms to furnish meeting places not only for medical, but also for allied organizations, so that in the future even more than in the past it may serve as a rallying place for medical interests in general. Its museum will provide suitable accommodations for many valuable specimens hitherto destroyed by private owners for lack of space, and its library with its accommodations for 300,000 volumes will grow even more rapidly than heretofore. Above is the medal struck for the occasion.

THE DEDICATION.

The Fellows of the College of Physicians of Philadelphia, with their invited guests, assembled at the First Unitarian Church, near Twenty-second Street, Philadelphia, on Wednesday, November 10th, at two thirty o'clock, and marched thence to the entrance of the new hall of the college on Twenty-second Street, between Chestnut Street and Market Street. The officers, the senior fellows, and their guests, who led the procession, were clad in academic gowns, embracing a wide range of vivid colors, from the scarlet and olive of McGill and the crimson of Oxford, to the blue of Cambridge and the buff of Columbia. The company made an impressive sight as they moved in stately procession into the marble reception hall of the new building, where Dr. William J. Taylor, secretary of the building committee, presented the keys of the structure to Dr. George E. de Schweinitz, vice president of the college. The dignitaries then ascended the white marble stairway to Weir Mitchell Hall, which occupies almost the entire front of the second story.

Here the president, the senior fellows, and the guests were seated on a raised dais facing an audience which filled the hall to its full capacity, and which included several ladies, among whom was Mrs. Anne Weightman Penfield, one of the most liberal contributors to the building fund.

The ceremonies were opened by the president, Dr. James Tyson, who introduced Dr. John S. Billings as the representative of the New York Public Library.

Dr. BILLINGS said that he was in a position to appreciate the great value of the excellent library of the College of Physicians of Philadelphia, for it represented a complete summary of the science of medicine as it exists to-day. He also congratulated the Public Library of Philadelphia in having at hand such a complete and well ordered medical library, for one of the greatest difficulties which the general librarian had to contend with could be solved by referring the lay men and women interested in sex and heredity to a library like that of the College of Physicians of Philadelphia, where they would be



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DR. JOHN S. BILLINGS.

Delegate from the New York Public Library and from the Carnegie Institution.

given all that they ought to have if not all they wanted. Dr. Billings said that he came also as a delegate from the Carnegie Institution of Washington, which viewed with much gratification the development of such institutions as this. In conclusion he expressed the hope that the institution would grow in value and increase in fame for centuries yet to come.

Dr. CHARLES L. DANA, as the representative of the Academy of Medicine of New York, said he came as a modern messenger Mercury from the high gods of New York to convey greetings and congratulations. His greetings were personal as well as official, for he had had experience of the helpfulness and hospitality of the College of Physicians of Philadelphia. He sketched briefly the origin of the New York Academy of Medicine, which owed its foundation to a suggestion made at a meeting of the Society for the Relief of Widows and Orphans of Medical Men in 1847. He then mentioned several of the valuable contributions to the welfare of the community made by the Academy. The library had grown in thirty-three years from 400 volumes to 80,000, with an average annual addition of 16,000 volumes. The scientific work was carried on in bi-weekly general meetings, and in meetings of the thirteen sections held monthly. He said that in a copy of the *Art of Medicine*, by Galen, printed in the Middle Ages, appeared a statement to the effect that one who wished to learn the whole art of medicine should read this volume, and having read it he would become a logician, a philosopher, a physician, and a wise man. To read the *Art of medicine* now,

one would have to peruse the hundred thousand volumes of the College of Physicians of Philadelphia, and to do this would indeed make him a logician, a philosopher, a physician, and a wise man.

Dr. REGINALD HEBER FITZ, speaking for the Boston Medical Library, gave a brief history of the first Boston medical library, which was founded by Dr. J. C. Warren and Dr. J. C. Jackson in 1803. This was, however, eventually consolidated with the Boston Athenæum in 1836. The present institution grew out of an organization of young men formed for medical observation in the early 70's under the encouragement of Dr. Henry I. Bowditch and owed its substantial success largely to the work of Dr. James Reed Chadwick. He said that the Boston Medical Library and the College of Physicians of Philadelphia met on common ground in that both were seeking nothing for themselves but all for the public welfare.

Dr. WILLIAM S. THAYER, as spokesman for the Medicochirurgical Faculty of Maryland, said that the association which he represented spoke rather as a child than a younger sister, for fully one fourth of its members had received their education in Philadelphia, and the founder of the faculty, John Archer, had received from the College of Medicine of Philadelphia the first medical diploma ever awarded in America. He said that it was a notable fact that nowhere else did the physicians occupy so important a position as in Philadelphia. In this city the term physician and surgeon meant gentleman and scholar. The foundation of the College of Physicians of Philadelphia so early in the history of the community was ample evidence of the culture of the medical men in Philadelphia over one hundred years ago. He said that the influence of the library could not be overlooked. It was next to the Surgeon General's Library the most complete medical library in this country. Through it students and investigators were enabled to familiarize themselves with the investigations carried on by others, and thus not only avoid duplication of work but also avoid needless contention as to the question of priority. Dr. Thayer said that he felt that the library of the College of Physicians of Philadelphia had been an important factor in preventing the development of that medical chauvinism which is so dangerous an enemy to truth. He quoted a statement made by Dr. Benjamin Rush as to the aims of the organization which had been well lived up to. Dr. Rush said that it was hoped it would prove a place where "the timid may be taught to trust and the rash to doubt." The institution had become not only the guardian of the honor of the profession but also of the character of its members. He said that with such a spirit as was shown by the founders and fellows of the College of Physicians of Philadelphia it was not to be wondered at that the medical men should be leaders as well as servants of mankind. In closing he said: "What wonder that out of our body should come a Holmes and a Weir Mitchell."

The President stated with regret that he had received a letter from Dr. Robert Fletcher, of the Library of the Surgeon General's Office, who was prevented from attending by illness. He had sent a brief address, however, which was read by the

secretary, Dr. Thomas R. Neilson. The address consisted of a description of a rare reprint of the *Tabellæ* of Vesalius which had recently been presented to the Surgeon General's Library by Sir John Stirling through the good offices of Dr. William Osler. This reprint, of which 32 copies had been made in 1872, measured twenty by twenty-seven inches, and was printed by Sir William Stirling privately. So far no copy had ever been sold. The son and heir of Sir William Stirling, finding six copies of the edition left, had presented this particular one to the Surgeon General's Library. This was believed to be the only copy in the United States.

Dr. FREDERICK P. HENRY, honorary librarian of the College of Physicians of Philadelphia, next made an address which is printed in full on page 941.

Associate Fellowships Conferred.

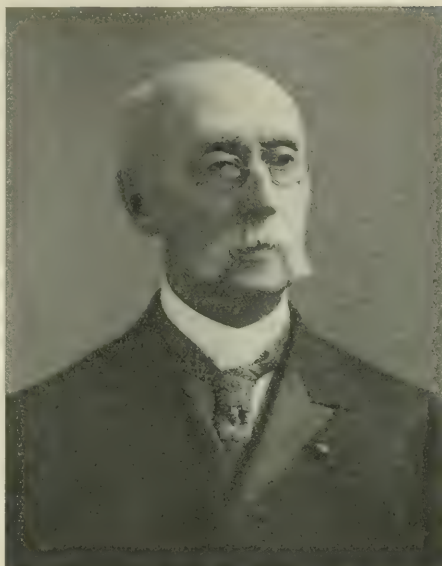
Dr. CHARLES H. FRAZIER, chairman of the Committee of Arrangements, announced that the members and fellows had elected seven associate fellows from among members of the profession outside of Philadelphia, who had been deemed worthy of this special distinction. He then called the roll of these candidates, each of whom was presented by a member of the college in a brief address outlining the special services which had won this distinction.

Dr. ARCHIBALD B. MACALLUM, of Toronto, Canada, was presented by Dr. Albert P. Brubaker, as a physiologist and physiological chemist of the first order. He said that Dr. Macallum's services to the cause of higher education had been acknowledged by honors both here and abroad, and for these services to the cause of medicine and to the cause of education he presented him as a candidate for a certificate of associate fellowship. The president then formally presented to Dr. Macallum the diploma signed by the president, the vice-president, the secretary, and the censors, constituting the candidate an associate fellow of the College of Physicians of Philadelphia.

Dr. OLIVER F. WADSWORTH, professor of ophthalmology, Harvard University, was presented by Dr. George E. de Schweinitz, who said that as a teacher Dr. Wadsworth had been impressive and as a physician he had upheld the honor of his profession, and as an ophthalmologist had conferred benefits alike on his profession and the community by his researches.

Dr. EDWARD G. JANEWAY, of New York, was presented by Dr. James C. Wilson, who eulogized his attainments and his services, characterizing him as a scientific physician, a master clinician, an impressive teacher, and a courteous gentleman.

Dr. CHARLES L. DANA, of New York, was presented by Dr. Charles K. Mills, who said that both by birth and environment Dr. Dana was fitted for a life of usefulness and distinction. Graduated from Dartmouth in 1874 and the College of Physicians and Surgeons in 1877, he entered the profession with the best equipment. His more important contributions to the literature of neurology and psychiatry were named, and attention was directed to the scholarship shown in his addresses and in his translations from Horace and his various literary studies.



DR. ROBERT FLETCHER.

Delegate from the Library of the Surgeon General's Office.

These and his services as a teacher were put forth by Dr. Mills as the wholly adequate ground for presenting the candidate.

Dr. FRANK BILLINGS, of Chicago, was presented by Dr. John H. Musser, who characterized him as an earnest seeker after truth, a successful teacher of young men, and an educator who had done much to uplift the cause of medicine. As a humanitarian Dr. Billings had done service of great value, as president of the State Board of Charities of Illinois. As an idealist and altruist he had been influential in directing the course of the American Medical Association. He concluded by saying: "Dr. Billings, in accepting this honor from the college you will honor it more than it can honor you."

Dr. GEORGE W. CRILE, of Cleveland, was presented by Dr. William L. Rodman, who spoke of the great value of the original work done by him. He said that in the past decennium few men in the profession had been more fertile in blazing new paths. He spoke of the monograph on shock published by Dr. Crile in 1807 as having been immediately accepted as a most valuable contribution and an authoritative exposition of a most intricate subject. For this Dr. Crile had been awarded the Cartwright Prize. Other monographs of great value had followed, which were named by Dr. Rodman, besides numerous contributions to current medical literature. In conclusion Dr. Rodman said that his earnest and distinguished services warranted fully this very great honor.

Dr. FRANKLIN P. MALL, of Johns Hopkins University, was presented by Dr. George A. Piersol. Dr. Piersol said that during the past fifteen years



DR. FREDERICK P. HENRY,

Honorary Librarian of the Library of the College of Physicians of Philadelphia.

there had been wonderful progress in the field of anatomy, and to that progress Dr. Mall had made conspicuous contributions. His work had, however, not been confined to narrow limits, but had been considered with reference to the broader problems of modern medicine.

Greetings from Abroad.

The secretary, Dr. Neilson, announced the receipt of congratulations by cable from the Royal College of Surgeons of Edinburgh and the College of Surgeons of England, and from Dr. William Osler. He read these messages as well as resolutions from the Boston Medical Library, and letters from Dr. J. Chester Norris and Dr. Horatio C. Wood, two fellows who were unable to be present.

The History of the Institution.

Dr. JAMES TYSON, president of the college, then read his dedicatory address, which outlined the history of the institution. Dr. Tyson opened his address with the statement that of the three learned professions, theology, law, and medicine, it was the latter which had been especially characterized by a tendency on the part of its members to unite for mutual improvement. He referred to the foundation of the Royal College of Physicians of London in 1518 as having been evidently in the mind of the projectors of the Philadelphia College of Physicians and Surgeons. He gave the dates of the formation of the older associations of physicians throughout the world, some of which had been formed before and some since the foundation of the Philadelphia institution.

The Medical Society in Boston, founded in 1735, seems to have been the first institution organized by the physicians of the English Colonies in North America, the second being "a weekly society of gentlemen in New York" before whom a paper was read in 1749. The Philadelphia Medical Society, organized in 1765, was the first organization of physicians in that city. In 1768 this became a part of the American Society for Promoting Useful Knowledge, now the American Philosophical Society. The New Jersey Medical Society is the oldest of existing medical organization in the United States, having been founded in 1766. A medical society which existed in New York in 1769 was credited with being the founder of the medical school in Kings College—now Columbia University. This organization seems to have been the precursor of the Medical Society of the State of New York, though its early history is not quite clear. The American Medical Society, founded in Philadelphia in 1773, was composed of undergraduates. The Boston Medical Society was organized in 1780, that of Massachusetts in 1781, and that of New Haven County, Conn., in 1784, these being the only associations of medical men known to exist prior to the organization of the College of Physicians of Philadelphia, on January 2, 1787, which is at present the oldest American medical society in existence which is not a State organization. Dr. Tyson outlined the early history of the efforts to establish a college of physicians by Dr. John Morgan, founder of the Medical School of the College of Physicians, later the University of Pennsylvania. He mentioned the names of many eminent physicians who had taken part in governmental affairs and pointed out the close relation existing between the physicians of Philadelphia and those of Europe through the attendance of American students on European schools. The first meeting of the College of Physicians of Philadelphia was held on January 2, 1787, and the constitution printed on February 1, 1787. Dr. John Redman was the first president, and the list of senior fellows, limited to twelve, including the names of Dr. Benjamin Rush, Dr. William Shippen, jr., Dr. Samuel Duffield, and others less familiar to members of the profession of the present day was given by the speaker. Dr. Tyson reviewed in outline the history of the organization, showing its great value to the community, particularly in the results of its study of the yellow fever which prevailed in Philadelphia from 1793 to 1798. Dr. Tyson also outlined the social history of the college, which was very meagre until lately on account of lack of funds. He referred in detail to the impressive character of the exercises held at the Centennial Anniversary of the institution in 1887, when the completion of the hall at Thirteenth and Locust Streets was also celebrated. Dr. Tyson then gave the recent history of the organization, setting forth the different fields in which it had been active, and closed his address with a review of the history of its library, which now numbered over eighty-one thousand bound volumes and over one hundred thousand unbound volumes and pamphlets, with a library fund amounting to upward of sixty-five thousand dollars.

The proceedings for the afternoon closed with the benediction by the Bishop of Pennsylvania.

THE BANQUET.

Nearly five hundred members and guests of the College participated in an elaborate banquet at the Bellevue-Stratford Hotel on Wednesday evening, while the galleries were filled with ladies as spectators. The room and the tables were decorated with masses of flowers and the scene was both beautiful and impressive.

Dr. G. E. de SCHWEINITZ, who acted as toastmaster, in introducing Dr. S. Weir Mitchell as the first speaker, referred to him as "one who has lightened the lives of those who seemed doomed to a burden of sorrow through mental or bodily suffering."

Dr. MITCHELL said that this was to him "not the time for the gay nonsense of the after dinner hour. There is a solemnity about this occasion which must make itself felt. I have been asked to respond to the toast, 'The Old College and the New.' It might better have been put in the words, 'Our Memories and Our Hopes.' There is a solemnity about this occasion, with its significance in the change from the old home to the new, the old college to the new college, the memories of to-day and the hopes of to-morrow, that I cannot escape and I would not try.

"When I became a fellow of the College of Physicians, in 1856, we met in the little picture house on the grounds of the Pennsylvania Hospital. There is not one man here to-night who was present at this first meeting of mine. All are dead—gone to the reward I am sure is meted out to all physicians. Only I remain. And what a picture it would make if of those departed fellows of this society we could call back a dozen for a ghostly consultation! They would be surprised, alarmed, and perhaps amused. Medicine is the noblest and most revolutionary of all professions. It is forever changing, and changing ever for the better. We try, condemn, and decapitate the thought king of to-day and enthroned the better thought king of to-morrow. * * *

One tablet in our new institution will contain the names of 169 of our members who died on land or sea as surgeons during the great civil war. Some of our fellows have survived the presidency, most of them have passed away to that land where surely all physicians must go. But there remains one who is sorely missed here to-night. Need I name him?—Horatio C. Wood."

He then briefly outlined the history of the college and turning to the audience said: "It is the most stately edifice that the greatest of all professions has anywhere built. It is destined to witness great things. It will endure to see the end of many diseases of which we now think with anticipatory dread. It will endure to witness the passing away of much quackery. Before the close of the century it will witness the conquering of tuberculosis. The prophetic dreams of to-day will become realities to-morrow. Quacks will disappear. The antivivisectionists and the antivaccinationists and all the various antis which now buzz about us will have gone too."

Mr. Andrew Carnegie, whose gift of \$100,000 was an important factor in the completion of the new building, was introduced by Dr. de Schweinitz as "that most generous benefactor of the world, a lover of books, a hater of war, a student of government



DR. JAMES TYSON,
President of the College of Physicians of Philadelphia.

and industry, and a believer in education." Mr. Carnegie said that just before rising the toastmaster had asked whether he was satisfied that the two thousand libraries that he had given and the \$75,000,000 they had cost would yield a satisfactory return, and whether he would pursue the same course as he had in this respect could he live his life over again. To this question he wished to reply emphatically, "Yes." "I have devoted this money to the best use I could make of surplus wealth." He said that there were two persons in the room with whom he had done rather a wholesale business in libraries, one of them, John Thomson, of Philadelphia, had secured thirty libraries for that city; but it was Dr. John Shaw Billings who had walked out of his office with the largest wholesale order for libraries ever placed in the seventy-eight branches for the city of New York. Mr. Carnegie then paid a feeling tribute to Dr. Mitchell, whose acquaintance he first made when he asked him to serve on the Research Committee. That acquaintance had rapidly ripened to admiration and had long since passed from the stage of admiration to that of genuine affection. He wished to congratulate Dr. Mitchell on reaching, on this occasion, the pinnacle of his career. He doubted if any honor could now be bestowed which could eclipse this. In conclusion Mr. Carnegie said: "I know that as long as memory holds seat in my brain I shall remember this in my happier moments as an occasion when I greeted you all and sat beside my friend Dr. S. Weir Mitchell."

Dr. W. W. Keen spoke of the college library and its treasures, describing the contents of the library and extolling the men who had contributed of their learning to its stores.

Mr. Hampton L. Carson spoke of the college and its civic relations, reviewing the work done by physicians in colonial and revolutionary times, lauding particularly the physicians who had contributed so largely to the success of the revolutionary cause.

Dr. A. V. Meigs responded to the toast *The College and Its Traditions*, reviewing the subject in a general way. This closed the formal speech making.

The Final Exercises.

The final exercises in connection with the dedication consisted of an address on Friday evening by Dr. Mitchell followed by a reception.

THE BUILDING.

As will be seen by the illustration of the new building which is printed on page 943 of this issue, the design follows the lines of the English architecture of the Georgian era. The front of the structure covers some 110 feet, and is two stories in height. It reaches back 130 feet and in the rear is six stories high. A broad vestibule leads into a handsome circular hall paved and walled with white marble. Opening into this hall are a nurses' directory, the offices of the institution, the small Gross Library, a dressing room, two auditoriums for public use, one of which will probably accommodate an audience of two hundred and the other probably a hundred and fifty, and the museum, which also extends another story into the basement.

The broad marble stairway leading from the circular hallway divides and leads to a central hall in the second story. From this opens out on one side the reading room with the name "Ashhurst" inscribed above the door, the family of that name having furnished the room. On the eastern side of the hall is the periodical room, above which is inscribed the name "Norris," in honor of that family.

The end of this hall opens into the Weir Mitchell Hall, a room of noble proportions, 73 feet long by 45 feet wide, with a domed skylight and walls paneled in soft gray tones and decorated with oil paintings of distinguished members and officers. On either side of this main auditorium are private rooms intended for the use of members engaged in private research. The offices of the librarian and his assistant are in the rear of this floor. From this floor access is had also to the book stacks, which extend from the basement through to the sixth floor. These stacks are of the most modern construction, being built of cast iron with movable shelves and with glass floors, thus getting the full benefit of all the light. The books are delivered to any desired floor by means of an automatic electric elevator. The assistant librarians in the stack room are communicated with by means of telephones on the different floors. Every detail of the stack room is finished in accordance with the most approved method as regards both accessibility and safety. Only two doors are cut between the stack room and the main building, both of which are fire proof and close automatically in case of fire, thus protecting the library even in case the main building should be destroyed.

News Items.

Changes of Address.—Dr. William Jackson Merrill, 1237 Spruce Street, Philadelphia.

Dr. Faneuil D. Weisse, to 19 Gramercy Park, New York.

The Long Island College has the largest class this year in the history of the institution, the class of 1913 consisting of 122 matriculants, a record enrollment.

The Hospital Saturday and Sunday Association of St. Louis will make its annual collections this year on November 27th and 28th. Last year the collections amounted to \$46,349.88, and all indications point toward larger contributions this year.

The Richmond, Va., Academy of Medicine and Surgery held a regular meeting on Tuesday, November 9th, at 8:30 p. m. The programme included two papers, one by Dr. Charles R. Robins, on *Repair of Recent Laceration of the Perineum*, and the other by Dr. St. George T. Grinnan on *Infant Mortality*.

American Medicinal Plants and Drugs was the subject of a lecture delivered by Dr. John Ury Lloyd, of Cincinnati, Ohio, at the Philadelphia College of Pharmacy, on Thursday, November 4th, at 3:30 p. m. This is the third of a series of special lectures which will be given at the college during the season of 1909-1910.

Syracuse, N. Y., Academy of Medicine.—At a regular meeting of this academy, held on Tuesday evening, November 9th, the following papers were read: *The Chemical Excitants of the Body*, by Dr. F. P. Knowlton; *The Present Conception of the Lymphatic System*, by Dr. H. D. Senior; *Some of the Newer Diagnostic Methods*, by Dr. W. A. Groat. Dr. A. C. Mercer is president of the academy and Dr. G. S. Britten is secretary.

The Medical Society of the Borough of the Bronx.—A stated meeting of this society was held on Wednesday evening, November 10th. Dr. M. S. Kakels read a paper entitled *Early Trephining in Severe Injuries to and Over the Vertex of the Skull*. Dr. John B. Talmadge read a paper on *Atrophic Cirrhosis of the Liver*. Dr. Henry Roth read a paper on *the Pathology and Diagnosis of Cholelithiasis and Diseases of the Biliary System*. Officers for 1910 were nominated.

A New Hospital for the West Side of New York.—At a meeting of the West End Association, held on Monday evening, November 8th, a committee was appointed to consider site and size of a hospital for the west side of the city, with instructions to report at the December meeting of the association. The State Charities Aid Association had requested an opinion from the association as to the location of the hospital and with reference to the establishment of an emergency ambulance station for the benefit of the poor of the west side.

Personal.—Dr. Charles Phelps, who served for thirty-seven years on the board of police surgeons, in New York, was retired on November 5th, at the age of seventy-four years, with an annual pension of \$1,750 for the rest of his life. On November 6th he sailed for Naples for a year's tour of Europe.

Dr. Horace G. Norton, of Trenton, has been elected secretary of the New Jersey State Board of Medical Examiners, to succeed Dr. E. L. B. Godfrey, of Newark, who resigned recently on account of ill health.

The Alumnae Association of the New York Medical College and Hospital for Women will hold its first meeting on Tuesday, November 16th, at 8 p. m. The guest of the evening will be Dr. Sarah J. McNutt, who will read a paper entitled *The Value of Animal Experimentation to Humanity*. Dr. Jennie Baker will present a report of the meeting of the State society, and Dr. Harriet Hale will report on the meeting of the City Federation of Women's Clubs. Undergraduate students are invited to attend at 9 o'clock. Dr. Sophie B. Scheel, of 209 Hancock Street, Brooklyn, is the corresponding secretary of the association.

Model Tenements for Tuberculous Patients.—Plans were filed on November 3d for four model six story tenements, which are to be used for the accommodation of sufferers from tuberculosis. The tenements are to be erected in Avenue A, between Seventy-seventh and Seventy-eighth Streets, at a total cost of \$650,000, by Mrs. William K. Vanderbilt, Sr. Roof gardens, balconies, and other features designed to combat the white plague will make the tenements distinctive. The buildings will accommodate nearly four hundred families, and only moderate rentals will be charged. They will be under the supervision of Dr. Henry L. Shively.

New Building for Brooklyn Board of Health Dedicated.—The corner stone of the new five-story marble office building of the Brooklyn Board of Health, which is almost ready for occupancy, was laid on November 4th and the building dedicated with suitable ceremonies. The cornerstone was laid by Mayor McClellan, and addresses were delivered by Dr. Thomas Darlington, commissioner of Health of New York, and Dr. Joshua Van Cott, president of the Medical Society of the County of Kings. The new building, which occupies the triangle bounded by Flatbush Avenue, Willoughby Street, and Fleet Street, is of white marble. It is an elaborate and imposing structure, and will cost the city approximately \$350,000. It will be ready for occupancy about January 1st.

Scientific Society Meetings in Philadelphia for the Week Ending November 20, 1909:

MONDAY, November 15th.—Medical Society of the Woman's Hospital.

TUESDAY, November 16th.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

WEDNESDAY, November 17th.—Section in Otolaryngology, College of Physicians; Franklin Institute.

THURSDAY, November 18th.—Section in Ophthalmology, College of Physicians; Section meeting, Franklin Institute; Southwark Medical Society; Northeast branch, Philadelphia County Medical Society, Delaware Valley Ophthalmologists' Club.

FRIDAY, November 19th.—American Philosophical Society.

Medical Department of Columbia University to Have a New Hospital.—Columbia University has received from Mr. William D. Sloane a gift of \$150,000, to be used for the erection of a seven story addition to the hospital on Tenth Avenue, at Fifty-ninth Street. It will be occupied by the department of gynecology, which will be correspondingly enlarged. Mr. Sloane several years ago presented the Sloane Maternity Hospital, one of the best equipped of the buildings of the College of Physicians and Surgeons. The new hospital will give the Medical Department of Columbia University the most complete equipment of the kind in the country, and will enable students to receive practical instruction in all phases of the subjects of obstetrics and gynecology in the same building, which has long been the desire of the faculty.

The Alvarenga Prize of the College of Physicians of Philadelphia.—Announcement is made that the next award of this prize, which consists of the income for one year of the bequest of the late Señor Alvarenga, and amounting to about \$180, will be made on July 14, 1910, provided an essay worthy of the prize shall have been received. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be in the hands of the secretary of the college on or before May 1, 1910. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. Dr. Thomas K. Neilson, 122 South Seventeenth Street, Philadelphia, is secretary of the committee.

Thirty Million Dollars for Charity.—Among the bequests included in the will of John Stuart Kennedy, who died in New York on October 31st, leaving an estate valued at about \$60,000,000, of which approximately one half goes to educational, charitable, religious and benevolent institutions, are the following: Presbyterian Hospital, New York, \$2,250,000; United Charities, a corporation of the State of New York, \$1,500,000; Charity Organization Society of the City of New York, \$750,000, for its School of Philanthropy; New York Infirmary for Women and Children, \$200,000; Presbyterian Home for Aged Women, New York, \$100,000; Manhattan Eye and Ear Hospital, \$100,000; New York Orthopedic Dispensary, \$100,000; Home for Incurables, Fordham, N. Y., \$100,000; New York Society for the Relief of the Ruptured and Crippled, \$100,000; Charity Organization Society of the City of New York, \$100,000; Association for Improving the Condition of the Poor, \$100,000; Children's Aid Society, \$100,000; State Charities Aid Association, New York, \$100,000; the Alumnae Association of the Presbyterian Hospital, New York, \$100,000; Bar Harbor, Maine, Medical and Surgical Hospital, \$50,000.

Government Appoints a Commission to Study Pellagra.—A special commission of scientists was appointed on November 4th by the Secretary of the Treasury to make an examination into the causes of pellagra and report on official action necessary to arrest the progress of the disease. The members of the board will visit those States where the disease is prevalent, and cooperate with boards of health and other medical organizations in devising ways and means for preventing the further spread of pellagra. The commission is composed of the following members: Passed Assistant Surgeon John S. Anderson, director of the Hygienic Laboratory, chairman; Surgeon M. J. Rosenau, of the Public Health and Marine Hospital Service; Dr. Reid Hunt, chief of the division of pharmacology, Hygienic Laboratory; Passed Assistant Surgeon Charles H. Lavinder, secretary of the commission; Dr. William A. White, superintendent of the Government Hospital for the Insane; Dr. Nicholas Achucarro, specialist in nervous pathology, Government Hospital for the Insane, and Passed Assistant Surgeon J. D. Long.

The Health of Chicago.—During the week ending October 30, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 162 cases, 19 deaths; scarlet fever, 134 cases, 4 deaths; measles, 65 cases, 0 deaths; whooping cough, 37 cases, 2 deaths; typhoid fever, 36 cases, 5 deaths; smallpox, 2 cases, 0 deaths; tuberculosis, 65 cases, 65 deaths; chickenpox, 39 cases, 0 deaths; puerperal fever, 2 cases, 0 deaths. The deaths from other important causes were: Cancer, 38 deaths; nervous diseases, 10 deaths; heart diseases, 52 deaths; apoplexy, 15 deaths; Bright's disease, 50 deaths; diarrhoeal diseases, under two years of age, 36 deaths; diarrhoeal diseases, over two years of age, 6 deaths. There were 6 suicides, 40 deaths due to accidents, and 5 deaths from manslaughter, making a total of 51 deaths by violence. The total number of deaths during the week was 586, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.74 in a thousand of population. The total infant mortality was 147; 99 under one year of age, and 48 between one and five years of age.

The Medical Association of the Greater City of New York will hold a stated meeting in Du Bois Hall, New York Academy of Medicine, on Monday, November 15th, at 8:30 p. m. The evening will be devoted to a consideration of the question of nurses and nursing. Major Charles Lynch, of the Medical Corps of the United States Army, representing the Surgeon General of the Army, will deliver an address on the Present Status of the United States Army Nurse Corps, and the following papers will be presented: Private Nurses and Nursing, with Recommendations for Their Betterment, by Dr. Thomas E. Satterthwaite; A Successful Experiment in Educating Efficient Nurses for Persons of Moderate Income, by Dr. William C. Stillman, of Albany, N. Y.; An International Educational Standard for Nurses, by Mrs. Hunter Robb, late superintendent of nurses and principal of the training school for nurses at Johns Hopkins University Hospital. The discussion will be opened by Mr. George P. Ludlum, late superintendent of the New York Hospital, and among those who will participate in the discussion are Dr. William Polk, Dr. Charles Jewett, Dr. A. G. Gerster, and Dr. W. Gilman Thompson.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending October 30, 1909, there were 1,258 deaths from all causes reported to the department, 92 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 14.38 for the whole city, and for each of the five boroughs as follows: Manhattan, 14.38; the Bronx, 15.89; Brooklyn, 13.66; Queens, 15.55; and Richmond, 18.06. The total infant mortality was 368; 252 under one year of age, 67 between one and two years of age, and 49 between two and five years of age. Of the total number of deaths of children under five years of age, 84 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 65; pulmonary tuberculosis, 147; diarrhoeal diseases, over five years of age, 92; organic heart diseases, 131; Bright's disease, 89; cancer, 59; pneumonia, 106; bronchopneumonia, 78. There were 17 suicides, 56 deaths due to accidents, and 1 death from homicide, making a total of 74 deaths by violence. There were 137 stillbirths. Seven hundred and sixty-six marriages and 2,223 births were reported during the week.

Cholera in Germany.—It is reported that cholera has broken out in Germany, in the provinces adjoining the Russian frontier. The consular agent at Königsberg has reported to the State Department at Washington twenty-two cases, with seven deaths. Official reports of the cholera cases in Germany show that from July 19th until November 3d thirty-three persons had the disease and twelve of them died. It is reported that the infection was doubtless from raftsmen on the River Menel, and German physicians have been sent to supervise and erect barracks where necessary. Sanitary precautions are being maintained rigorously.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statements of the new cases and deaths reported for the two weeks ending November 6, 1909:

	—October 30—		—November 6—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	435	147	386	140
Diphtheria	262	29	303	29
Measles	115	6	161	8
Scarlet fever	145	8	167	10
Smallpox	1	1	..	..
Varicella	56	..	86	..
Typhoid fever	83	21	76	16
Whooping cough	36	2	32	8
Cerebrospinal meningitis	6	6	1	1
Total	1,138	220	1,212	212

Army Medical Corps Examinations.—The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1910 will be held on January 17, 1910, at points to be hereafter designated. Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before January 3, 1910. Early attention is therefore enjoined upon all intending applicants. There are at present eighty-one vacancies in the Medical Corps of the Army.

A Tuberculosis Preventorium for Children has been established in Lakewood, N. J., in the old Grover Cleveland Cottage. Although formal announcement has just been made that this institution is in successful operation, the plan had its inception last May, and the first patient was received on July 2d. The preitorium was founded to cope with the alarming condition revealed by the reporting of 23,325 new cases of tuberculosis in New York city in 1908, and the fact, recently stated, that there were 40,000 children in the tenement districts who were infected with the disease. The institution will take children in the early stages of the disease and restore them to normal health by open air life, pure food, and wise supervision. Cleveland Cottage at Lakewood, with the surrounding eight acres of pine woods, was given by Mr. Nathan Straus, and substantial voluntary cash donations have been received toward the running expenses. Miss Dorothy Whitney has given \$100,000 to endow a department of practical instruction in carpentering, cobbling, basketry, weaving, etc. In order that the work may be most efficacious by reaching the poorest children, it is planned to maintain the preitorium without charge to parents for either board or carefare, and to assure the permanence of the work the trustees of the institution are seeking an endowment of \$1,000,000. With the assistance of Dr. James Alexander Miller an arrangement has been made with the New York Association of Tuberculosis Clinics for the selection of children, and since July 2d ninety-two children, ranging from four to fourteen years of age, have been received, and all have shown steady improvement. It is hoped that by next summer there will be accommodations for 400 children. Dr. Alfred F. Hess has complete charge of the work, with advice from Dr. Abraham Jacobi, Dr. Hermann M. Biggs, and Dr. S. S. Goldwater.

Gifts and Bequests to Charity.—The will of Mrs. Angeline V. Woodward, who died in Lancaster, Mass., on November 2d, gives \$5,000 to the Clinton Hospital Association and \$1,000 to the Clinton Home for Aged People, and the income from \$1,000 to the Clinton Society for the Relief of Tuberculosis.

By the will of Anna Rinke Brown, who died recently in Philadelphia, the German Hospital will receive \$500; the German Lutheran Orphan Asylum, \$500; the German Home for the Aged, \$500; the Samaritan Shelter, \$50; and the Ladies' Aid Society to the German Hospital, \$100.

At the twenty-fifth anniversary meeting of the Montefiore Home, Broadway and Thirty-eighth street, New York, gifts amounting to \$101,500 were received.

By the will of Miss Elizabeth S. Bangs, who died recently in Boston, the Children's Hospital will receive \$2,500.

Society Meetings for the Coming Week:

MONDAY, November 15th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, November 16th.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, November 17th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medical College Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society.

THURSDAY, November 18th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society (annual); Æsculapian Club, of Buffalo, N. Y.

FRIDAY, November 19th.—New York Academy of Medicine (Section in Orthopedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

The Souchon Museum of Anatomy at Tulane University.—By resolution of the Board of Administrators of the Tulane Educational Fund, the Museum of Anatomy of the Medical Department of Tulane University was named the Souchon Museum of Anatomy, in honor of Dr. Edmund Souchon, professor emeritus of anatomy at the university. This museum occupies a large room, eighty-five by thirty-six feet, in the new Richardson Memorial Building, and is well lighted by means of numerous windows and skylights. A unique feature of the museum is that the preparations stand in large glass jars on tables arranged in rows, instead of being in cases against the wall. All these specimens are real, the dissections having been made after a new method elaborated by Dr. Souchon. There are sixty-seven jars with preparations on osteology, forming a very complete collection, unequalled by any medical school, except Harvard. Next come four hundred large jars containing dissections showing the permanent color of muscles, vessels, nerves, and organs. Of these, two hundred are good and two hundred have to be made over, as it is believed that they can be made very much better by the improved method. The two hundred good ones comprise the articulations, muscles, arteries, veins, lymphatics, nerves, spinal cord, brain, and surgical anatomy; all with permanent color. The other two hundred relate almost entirely to visceral anatomy and will be completed within two or three years. The great value of this museum is to prepare students for the dissecting room and to assist them in making dissections. It will also enable them to review their work in anatomy rapidly. It has been suggested by Dr. Souchon that two or three hours a week should be allotted to the study of the preparations by the students, and that a quiz on these preparations should constitute a part of the examination in anatomy.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 6, 1909.

1. Bacterial Examination of the Stools in Suspected Cancer of the Stomach, By PHILIP KING BROWN.
2. Amœbic Dysentery, By SIDNEY K. SIMON.
3. A Rational and Simple System of Serodiagnosis of Syphilis, By HIDEYO NOGUCHI.
4. Some Studies of the Precipitin Tests for Syphilis, By HENRY S. WIEDER and EDWARD M. L'ENGLE.
5. Serodiagnosis of Syphilis, By WILLIAM LITTERER.
6. Primitive Graphic Signs in Pulmonary Work Based on Phonetic Values, By JOSEPH H. BARACH.
7. The Coming Revision of the United States Pharmacopœia, By TORALD SOLLMANN.
8. Hypertrophic Stenosis of the Pylorus in Infants; Report of Cases Occurring on the Pacific Coast, By STANLEY STILLMAN.
9. Perforated Gastric and Duodenal Ulcers, By JOHN H. GIBBON and FRANCIS T. STEWART.
10. Pellagra, Ancient and Modern, By HOWARD D. KING.

2. **Amœbic Dysentery.**—Simon, in the treatment of amœbic dysentery, speaks of the great value of ipecacuanha. The detailed method of its administration is of the greatest importance, the lack of which stands as explanation in part for the failures reported in some quarters. First of all, the drug should be administered only in pill form, coated to the extent of about an eighth of an inch with phenyl salicylate (salol). The patient must be put to bed for the first two weeks' treatment and his diet restricted to liquids, or, at most, light solids. This absolute rest in bed, with restricted diet, is particularly essential to the details of the plan. Castor oil may be given as an initial purgative, and then each evening, after a three hours' fast, the pills coated with phenyl salicylate are administered. A start may be made with 40 or 60 grains, depending on the length or severity of the infection, but each subsequent evening the dose is reduced 5 grains, until the limit of 10 grains is reached. Following this he has been in the habit of continuing with 10 grains each day for the next two weeks. The use of the drug in this way has appeared to him almost in the light of a specific. Under its influence the stools become diarrhetic, soft, and pulsatious, and the amœbæ seem to vanish almost at once, even though careful search be made for them. Opium is no longer required to prevent nausea or vomiting, if ordinary care is taken to have the pills well coated with phenyl salicylate. Bowel flushes, on which almost exclusive reliance is placed in some quarters, may or may not be employed in connection with the ipecac treatment.

3. **Serodiagnosis of Syphilis.**—Noguchi describes his method of serum diagnosis in syphilis, of which he says that each factor is separable, titrable, definite. The proportional quantity of each factor is adjustable. Complement from guinea pig can be used in fresh as well as dried state; latter is more stable; former is preferable if obtainable. Amboceptor from rabbit is immunized to human corpuscles; can be used in liquid state as well as dried on paper; latter is more stable. Corpuscle suspension can be made from the blood of patient or any

normal individual. Removal of serum by washing corpuscles is preferable but not necessary unless fibrin ferment is present. Patient's serum can be used in fresh, old, or inactivated state, and if necessary serum can be dried on filter paper and examined after an indefinite length of time. Antigen is prepared from normal or syphilitic tissues by alcoholic extraction and subsequent acetone fractionation; it can be made more stable by impregnating filter paper. There is no danger of introducing excess of amboceptor or complement. The quantity of serum to be tested is very small and so adjusted as to avoid oversensitiveness, when inactivated, four to five times the amount should be used. The test, like all the others, requires a trained man, but not a fully equipped laboratory, as is necessary with all the other systems. He does not describe his method but refers to his former publications on the subject.

4. **The Precipitin Tests for Syphilis.**—Wieder and L'Engle speak of the precipitin tests for syphilis. In the taurocholate, glycocholate, taurin, and water experiments, the final result usually obtained was a precipitate, almost invariably flocculent in character; at times, light and diffused through the liquid; at other times, heavy and settled at the bottom of the tube. Sometimes both characters of precipitates were present. The precipitates varied in amount from abundant to moderate or very slight in amount. In most cases the precipitates were tenacious, resisting ready diffusion throughout the liquid, but rising by a spiral movement and showing a marked tendency to remain in the centre of the tube. No amount of agitation would cause these precipitates to dissolve. Other experiments showed a much finer precipitate which did not show the same tenacity and frequently would disappear on agitation. Owing to the character of the lecithin solution, which formed a cloudy emulsion, the observations had to be varied somewhat. The most characteristic change noted was a tendency to separation of the emulsion and central accumulation of the solid particles, while the fluid becomes clear. All stages could be noted from a perfect emulsion with uniform cloudiness to the formation of a dense, compact sediment and perfectly clear supernatant fluid. From their observations they come to the conclusion that with the taurocholate, glycocholate, taurin solution, and the distilled water, a positive reaction consists of a light or heavy, flocculent, tenacious precipitate which does not dissolve on agitation; whereas they consider as positive a lecithin experiment in which the emulsion separates with the formation of dense central clumps and clear or almost clear supernatant fluid. The parasyphilitics gave a very much higher proportion of positive tests. The secondary and tertiary syphilitics and the nonsyphilitics gave an almost equal proportion of positive results, though in all the proportion was but about one third of that in the parasyphilitic cases. As a result of their observations, they believe that none of these tests gives the practitioner a short road to the diagnosis of syphilis. They may be of some scientific interest, especially on account of the high proportion of positive results in parasyphilitics in each set of experiments, but the proportion of positive results in nonsyphilitics is too high to make the test

of value. Of the solution used, taurin seems the best.

9. **Perforated Gastric and Duodenal Ulcers.**—Gibbon and Stewart report twenty-two cases of perforations from gastric and duodenal ulcers. They are convinced that success or failure in the treatment of perforated gastric or duodenal ulcer depends almost entirely on the time which elapses between the perforation and its operative repair. Of the thirteen patients operated upon within seventeen hours, all but one recovered, while the remaining nine, all operated upon after twenty-four hours, died. These figures are striking and significant and, moreover, are in fair accord with those presented by other operators. Occasionally, of course, one may be able to save a patient after one, two, or even three days, but these will usually be cases of subacute perforation. The importance of operating as soon as the early symptoms of perforative peritonitis present themselves is evident, whether or not we are able to make a definite diagnosis of their cause. The abdomen should be opened through the right rectus above the umbilicus, an incision which gives the easiest and widest access to the viscera probably involved. If by chance an incision has been made below the umbilical line it is better to make another one above than to increase the first until the stomach and duodenum can be reached. The first incision should not be closed until the necessity for drainage of the pelvis has been determined by the extent and character of the exudate. If the symptoms have led the operator to make the lower incision and he finds the pelvis filled with exudate and an appendix or a Falloppian tube involved in the inflammatory process, but not in such a condition as to account for the extensive peritonitis, and especially if free gas is present, he should at once turn to the duodenum and stomach and assure himself that a perforation has not occurred. The perforation having been found, it should be rendered as accessible as possible and closed. The method of closure must vary with the character of the ulcer and especially with the degree of induration about the perforation. The next step is the toilet of the patient. The question of irrigation must be determined by the extent and character of the exudate. Drainage is necessary except as occasional cases of early perforation with little and limited extravasation. After treatment varies little from that in any case of peritonitis.

MEDICAL RECORD.

November 6, 1909.

1. Parasitism and Natural Selection, By R. G. ECCLES.
 2. The Acetone Treatment of Inoperable Carcinoma, By D. W. TOVEY.
 3. The Distinctive Diagnosis between Certain Forms of Tertian Malaria and Enterogenic Intoxication, By HARRIS A. HOUGHTON.
 4. Spastic Constipation, A Symptom, By J. N. LeCONTE.
 5. A Case of Mongolian Idiocy, By ALBERT M. HELLMAN.
 6. Nonspecific Uses of Antidiphtheric Serum, By F. M. FERNANDEZ.
2. **Acetone Treatment of Inoperable Carcinoma.**—Tovey reports eight cases, and says that

the acetone treatment is indicated in any inoperable case of cancer of the uterine cervix, or of the surface of the body, in which the breaking down area can be submitted to its action. The treatment should, if possible, be preceded by a thorough scraping out of the ulcerating area under anæsthesia, otherwise the acetone is uselessly spent in hardening dead tissue. The curetted cavity or crater is then carefully dried with gauze sponges and one half to one ounce of acetone is poured into it through a Ferguson or other tubular speculum. For this purpose the pelvis of the patient must be raised as in the Trendelenburg position. The narcosis is now interrupted and the patient left with elevated hips for fifteen to thirty minutes. Next the acetone is permitted to run out through the speculum by lowering the pelvis of the patient, and the cavity is packed with gauze soaked in acetone. The healthy mucosa of the vagina and vulva are cleaned with sterile water and a dry tampon is inserted into the vagina to absorb any excess of acetone. After the preliminary curettage and cauterization the regular treatment requires no further hospital care, is administered twice or three times a week beginning the fifth day after the operation, is done without narcosis, and may be given with the patient in bed or on the examining chair in the office. The pelvis of the patient is raised and the tubular speculum inserted into the cancerous cavity. With progressive diminution of the crater, smaller specula are employed. The speculum is filled with acetone and held by the patient for half an hour and then emptied by lowering the pelvis. Care should be taken to prevent the acetone from running over the vulva or perineum. The normal vagina is not affected by acetone but on the vulvar mucosa and outer skin acetone produces a faint, whitish discoloration and an intense burning sensation which soon disappears and may be immediately relieved by the application of cold water. If petrolatum is applied to the vulva, lower part of the vagina, and the speculum, and after the acetone has run out the cavity is swabbed dry and a cotton tampon coated with petrolatum is introduced into the vagina before the speculum is withdrawn the intense burning sensation is prevented. The tampon is removed by the patient in a few hours. The immediate effect of this simple procedure is to check any bleeding. The surface of the crater becomes covered with a white film. Wherever there has been an extravasation of blood, the discoloration is light brown. There is a marked reduction in the intense odor, the discharge at first becomes watery and soon disappears. With it disappears the former stench, and at the same time hemorrhages fail to recur, and after two or three weeks' treatment a considerable diminution in the extent of the wound cavity is noticeable. This has been confirmed by several observers. The walls of the cavity become smooth and firm so that the finger cannot remove any friable tissue. Occasionally owing to this fact the preliminary curettage may have to be repeated. Because of the checking of the weakening hemorrhage and discharge and the elimination of necrotic tissue and toxins, the general condition of the patient improves rapidly. Sensations of pain caused by the extension of the cancer to adjoining organs or nerve

trunks beyond the reach of the acetone are not relieved; these require, as before, anodynes. However, they require less and can often be relieved by aspirin.

4. Spastic Constipation.—Le Conte observes that laxatives if effective at all in spastic constipation—that is constipation depending upon a spastic contraction of muscular fibres of the intestinal wall, caused by irritation or inflammation, as distinguished from the other forms of chronic constipation, atonic constipation—must be given in large doses, and are here accompanied by considerable pain. If enemata are used, the water at once returns perfectly clear, or if it succeeds in passing the contracted segment, fails to return at all. The stools are generally insufficient in quantity, either hard or puttylike in consistency, pencil sized or ribbon shaped or scybalous, and accompanied by a larger or smaller quantity of mucus. The mucus varies in quantity from day to day, and may coat the surface of the stool as a sort of membrane, may appear like macaroni, the movement may be entirely made of mucus, or the amount of mucus in the faeces may be so scanty as to require grinding in a mortar with water and placing in a black plate for its detection. On physical examination the ascending or descending colon and sigmoid, and sometimes the entire colon, may be palpated, and rolled back and forth under the examining fingers as a hard ropelike structure, quite tender to pressure. On digital examination the rectum is generally empty of faeces, and is felt to contract firmly on the examining finger. In typical cases of atonic and spastic constipation the distinction between the two is easy, but inasmuch as one is often developed upon the other we may meet with transition stages which are confusing. In atonic constipation there is no pain or excessive flatulence, no corded or tender condition of the colon on palpation, but it may often be felt filled with faecal matter; laxatives and enemata are effective in producing a stool. The stool is generally hard and of large calibre, sometimes goose egg shape in rectal constipation, and no mucus is visible, except, perhaps, a shellac varnish appearance on the surface. The subjective and objective symptoms of spastic constipation may simulate those of chronic appendicitis or gallbladder disease if the enterospasm, pain, and tenderness is centralized in the caecum or the right segment of the transverse colon; indeed, these conditions co-exist, not infrequently, in the same patient. Spastic constipation may be continuous for months, or may come on at irregular intervals, the movements between times being atonic in type, and of large calibre, or more frequently they may take on a diarrhoeal character, especially after taking cold, or after gross errors in diet, but always accompanied by mucus. Spastic constipation occupies the centre of the stage in that peculiar malady of neurasthenics, mucous colic, the pathology of which is still a subject of dispute among authorities. From seventy to ninety per cent. of the cases of mucous colic occur in neurasthenic, hypochondriacal, hysterical women, many of whom have a condition of enteroptosis, or some disturbance of the uterus or ovaries.

BRITISH MEDICAL JOURNAL.

October 23, 1909.

1. The Harveian Oration on Experimental Psychology and Hypnotism, By GEORGE H. SAVAGE.
2. A Report on Cancer Research. An Investigation by *in vitro* Methods, By HUGH C. ROSS and CHARLES MACALISTER.
3. The Diagnosis of Malignant Disease by Means of the Antitryptic Index, By HUGH WESLEY BAYLY.
4. An Investigation of Serratus Magnus Infection in Cancer of the Breast, By T. BONHOTE HENDERSON.
5. Cancer in New Zealand, By P. W. HISLOP and P. CLENNELL FENWICK.
6. Rodent Ulcer Treated by Potassium Bichromate, By WILLIAM GEMMILL.
7. Two Cases of Ascites due to Liver Cirrhosis Treated by Operation, By G. GREY TURNER.
8. Two Cases of Primary Carcinoma of the Appendix, By DAVID M. GREIG.

2. Cancer Research.—Ross and Macalister place on record some facts regarding a chemical substance which causes a remarkable train of events when it is absorbed by human lymphocytes in that it promotes, first, excitation of amoeboid movement, then reproduction, and, lastly, death. These events are closely related to each other, and follow in quick succession under the experimental conditions. More than a year ago the fact was noted that there appears actually to exist in the body fluids of persons suffering from carcinomata a substance which causes the first of these events in the chain—namely, the excitation of amoeboid movements. When it is remembered that the excitation of reproduction and death constitute two of the cardinal facts known about cancer—for the cause of cancer, whatever it may be, must be an excitant of cell reproduction, which ultimately leads to the death of the individual—the inference may be drawn that this first event in cancer may be followed by the succeeding ones, reproduction and death, which are produced by the artificial substance under the microscope. Although this chain of events occurs on the slide in the space of a few minutes, it must be borne in mind that the conditions are experimental in the extreme, and must be most harmful to the vitality of the cells. In the body, however, similar events, supposing such to exist, would probably be spread over several generations of cell life in their occurrence, and a much smaller quantity of the exciting agents would be required to bring about the same delayed results. A mixture of methylene blue and astropine excites amoeboid movements in leucocytes. So does the blood of a cancer patient. The same mixture will cause lymphocytes to extrude flagella with a particle of chromatin at their ends; so will the plasma of a cancer patient. They have shown that an extrusion of chromatin also appears to be a phenomenon which occurs in cancer cells, and that cancer cells appear to produce “something” which aggravates the disease. It is possible that this “something” is chromatin, and in support of this theory is the fact that an extract which probably contains chromatin or a derivate of it accelerates the action of the artificial auxetic. The deduction is that this chromatin thrown out by the cancer cells may be the element which, by affecting some other unknown substance, may promote a repetition of the changes which cause the three events in the chain to which they have referred. If chromatin, or a de-

rivative of it, is the "something" which aggravates the disease, in order to produce a chain of events similar to that which has been observed in lymphocytes, it will have to aggravate the action of a substance resembling in effect that contained in the aniline dye which causes first reproduction, and then death. It may also be noted that chromatin is a product of katabolism which, as has been suggested, may predispose to the disease in persons over the age of forty. Such are the hypotheses on which our authors have been working. There is a remarkable difference between the human lymphocytes and other leucocytes. Lymphocytes respond to the auxetic and endeavor to reproduce themselves, whereas leucocytes do not. The zyttoplasmic granules of leucocytes can be stained without harm to the lives of the cells. The smaller granules of the lymphocytes are composed of chromatin, and somatic death occurs when they stain.

6. Rodent Ulcer Treated with Potassium Bichromate.—Gemmil reports such a case in a woman of eighty-two years of age, of two years standing, in which ulcer it was thought impracticable to employ surgical means for its removal on account of extent and position. A ten per cent. aqueous solution of potassium bichromate was painted on the surface of the ulcer night and morning for a few days until a marked inflammatory reaction in the surrounding tissues occurred, the ulcer being protected between times by a piece of lint retained in position by strips of sticking-plaster. The bichromate was then stopped, and a dressing of boracic ointment applied until the surrounding inflammation was allayed. The ulcer then appeared to be in a healthier condition, the floor having been partly destroyed and granulations becoming evident. The process was repeated twice, bichromate being painted on the ulcer night and morning as before, with a similar result, and being followed by the application of boracic ointment. The effect of the potassium bichromate was the production of a sloughing of the unhealthy tissue over the whole floor, which extended also under the rolled edge of the ulcer. Healthy granulation was promoted, and, after the completion of the third series of applications of the bichromate, the epithelium spread rapidly over the ulcer, which healed completely, leaving a somewhat irregularly-pitted scar. From the beginning of the treatment till the ulcer was apparently cured occupied a period of three months. Two weeks later, however, a small part of the margin of the cicatrix began to break down. Two further repetitions of the process were sufficient to cure this, and so far no further recurrences of the condition has taken place.

THE LANCET.
October 23, 1900.

1. Recent Advances in Our Knowledge of Sleeping Sickness. By ARTHUR G. BAGSHAW.
2. Congenital Heart Affections, especially in Relation to the Diagnosis of the Various Malformations. By GEORGE CARPENTER.
3. Chronic Glanders in Man with Reference to an Unusual Type Affecting the Upper Respiratory Tract. By O. L. ADDISON and G. SECOMBE HETT.
4. Two Interesting Bilharzial Conditions. By FRANK COLE MADDEN.

5. A Case of Late Ricketts (?) in a Previously Healthy Child aged Thirteen Years. By F. HERNAMAN-JOHNSON.
6. A Calcified Left Ovarian Dermoid Separated from its Pedicle, Transplanted on to the Right Broad Ligament and Vesical Peritonæum; Removal on the Tenth Day of the Puerperium from a xii para. By FRANCES IVENS.

7. Case of Obliterative Arteritis. By R. ALLAN BENNETT.
8. The Importance of the Early Recognition of Tuberculous Mediastinal Glands in Children. By JOHN ALLAN.

9. A Case of Carcinoma of the Vermiform Appendix. By ALEXANDER MILLS KENNEDY.

1. Sleeping Sickness.—Bagshawe, as director of the Sleeping Sickness Bureau of the Royal Society, gives a very interesting review of our present knowledge of sleeping sickness. Since the year 1903 we have known that *Glossina palpalis* is the transmitter of human trypanosomiasis, but it is only recently that we have acquired accurate knowledge of the conditions of transmission. Kleine, in 1909, showed that after the fly ingests the trypanosome (in this case *brucei*) an interval of eighteen or twenty days occurs, during which it is noninfective, but that after that period it is able to infect susceptible animals. His observations were soon confirmed by Bruce for *Trypanosoma gambiense*, and there is every probability that some flies remain infective for the rest of their lives. Kleine has published figures of what must be regarded as *T. gambiense* in the alimentary tract of flies reared from the pupa, fed at first on animals infected with that trypanosome and afterward on healthy animals. The forms show a marked distinction. He has found parasites in the salivary glands as well, but regards their presence there as accidental rather than as bringing tsetse into line with anopheles. He has obtained no evidence of hereditary or germinal infection. Sir David Bruce and his colleagues have made a very interesting observation: They introduced under the skin of a monkey a tiny drop of fluid from the gut of a fly fed seventy-five days previously on an animal infected with *T. gambiense*. We know that the trypanosomes ingested by the fly undergo some kind of development, but whether a sexual process occurs or there is merely such a multiplication as is seen in cultures, we are at present ignorant. It is found that the trypanosomes are not able at all stages to infect the fly as Todd suggests, the hypothesis that a sexual stage occurs would receive indirect support. There are two other possible means of communicating the disease which have supporters, sexual coitus and blood sucking insects other than the tsetse flies. The members of the Sleeping Sickness Commission in French Congo bring forward evidence in favor of the transmission of sleeping sickness by insects other than *glossina*, especially mosquitoes of the general *mansonia* and *stegomyia*. They regard *Glossina palpalis* as the principal agent of infection, but think that mosquitoes, and probably other biting insects, are "important auxiliaries," conveying infection in each hut from person to person during the night. As to diagnosis the author remarks that it can only be considered as established unless the trypanosome is found in one or other of the body fluids, the blood, the cerebrospinal fluid, the gland secretion. The symptoms are described by the French observa-

tors. The cerebral forms they classify as diffused and circumscribed. The former are manifested by mental and meningeal symptoms, subacute in character. There is loss of the intellectual faculties. In the circumscribed forms there is irritation of the cortex leading to convulsions or paralysis. Both forms are incurable. The medullary or spinal forms are characterized by paraplegia, with some loss of sensation and bladder troubles. These symptoms progress slowly and respond well to treatment. Hodges, in a report about to be published, remarks on the increase of cerebral symptoms in Uganda. "Paralysis, paresis, and epileptiform convulsions," he writes, "which among untreated patients occurred in a small percentage, are now commonly met with, and are often the precursors of sudden death, which itself was very exceptional before the use of organic arsenic. Sudden or rapid death, in fact, generally preceded by cerebral symptoms, would appear now to be almost the rule among such patients who have received full courses of organic arsenic, while the prolonged lethargic state which almost invariably marked the end of untreated patients is either scarcely noticeable or absent." The number of new drugs employed has not been large; it includes arsacetin (the acetyl derivative of arsanic acid), paraarsenophenylglycin, and aminophenylstibinic acid, which corresponds to arsanic acid, with antimony substituted for arsenic in the molecule. Experience has been gained in the use of the older drugs, such as atoxyl or scammon, with or without mercury, orpiment, tartar emetic, etc. (The report on the results with these drugs should be read in the original article, as it can not be well condensed for such a short review as we give here.) Treatment with dyes, as parafuchsin, in combination with the more powerful trypanocides has not had an efficient trial. One factor in treatment, says the author, has perhaps been imperfectly realized—that is, the importance of increasing the resistance of the patient, especially by a generous diet. The members of the French Commission especially have emphasized this, and it is common knowledge that in times of scarcity or famine sleeping sickness becomes epidemic in places where it was previously present in an unobtrusive form. Bödeker, in British East Africa, has treated a few cases with cod liver oil in conjunction with soamin or atoxyl, and has reported favorably on them. Such treatment seems to be very reasonable, and cod liver oil should be tried in a large series of cases. Dr. C. W. Daniels has recently called attention to the importance of increasing the resistance of the host in the protozoal as in the bacterial diseases. Similarly, one must treat any condition which tends to drain the vitality of one's patient—e. g., ankylostomiasis. The preventive measures to be adopted are not the same for all parts of tropical Africa—that is to say, in one region, as Uganda or Rhodesia, it is found possible, and therefore best, to remove all natives from *palpalis* areas and to clear the vegetation in the neighborhood of fords and watering places; in another, as Togoland, neither of these things can be done to a profitable extent, and it is sought to collect all the infected persons into fly free camps; in a third it may be that a system of inspection posts is of value. Even if our preventive

measures fail there are reasons for thinking that nature is slowly working—in Uganda, for instance—to produce a state of toleration in the tissues of the persons infected. How this comes about, whether by an attenuation of the virulence of the trypanosome, by the weeding out of less resistant individuals, or by a combination of these factors, we do not know.

3. **Chronic Glanders in Man.**—Addison and Hett state that in the majority of cases the infection occurs through a wound or abrasion of the skin, but in a certain number the infection appears to be through the mucous membrane of the mouth or nose. Whether a previous lesion is necessary or not is uncertain. The incubation period appears to vary from a few hours to a year, the most usual period being four to seven days. Long periods of freedom from any manifestation are a striking feature of chronic glanders. The variety is marked in the initial stages, and continues throughout the course of the disease. Typhoid fever, septicæmia, pneumonia, and rheumatism are a few only of the diagnoses which have been made at the onset; the initial rash when present has most often been mistaken for that of smallpox. The later manifestations simulate nearly all those of syphilis and tubercle, from gummata to osteomyelitis and meningitis. It is difficult to give the average duration, but a considerable proportion of patients die within four months. There are, however, numerous instances where the patient has lived for two or three years, while there are two recorded cases of six and one of fifteen years' duration. It has been estimated that about 60 per cent. of the chronic patients recover. This figure is certainly in excess of the true one, in view of the fact that many patients are considered cured and lost sight of immediately afterward. Seeing, however, the long periods of latency recorded, it is most likely that a certain percentage relapses. Treatment of any kind has so far seemed to be of little avail. Bonomé reports a case where "improvement" followed injections of mallein, while Gold records the history of two patients whom he considered were cured by mercurial inunction. Possibly some good may result from a vaccine treatment.

LA PRESSE MEDICALE.

September 11, 1909.

1. Congenital Cysts of the Neck.

By A. BROCA and MASSON.

2. Hydatid Cyst of the Thyroid.

By FERRER.

September 15, 1909.

Sciatica Radicularis of Tuberculous Origin.

By LAFFORGUE.

Sciatica Radicularis of Tuberculous Origin.—Lafforgue remarks that the pathogenic causes which may produce sciatica radicularis are many. Among the twelve cases which he found in the literature were two of positive syphilitic origin, five of probable syphilitic, one of gonorrhœic, two of tuberculous, one of pleuritic, and one of undecided ætiology. To these reports he adds one case of sciatica radicularis with tuberculous ætiology. He concludes that sciatica radicularis of tuberculous origin can be of mechanical or compressive origin, or of toxic ætiology.

September 18, 1909.

1. Transient Peripheral Neuritis in Pregnancy.
By E. BONNAIVE and ROSENZWITT.
2. How to Administer Colchicum,
By ALFRED MARTINET.

2. Administration of Colchicum.—See Therapeutical Notes, November 13th, p. 969.

September 22, 1909.

1. Uranalysis in Diagnosis of Incipient Tuberculosis.
By F. MALMEJAC.
2. Apparatus for General Anesthesia with Ethyl Chloride,
By P. ROSENTHAL and A. BERTHELOT.

1. Uranalysis in Diagnosis of Incipient Tuberculosis.—Malmejac has found that the urine of tuberculous patients keeps its acid reaction for some time, between twelve days and three months, while the urine of healthy persons, not taking medicine, retains its acidity not longer than from five to ten days. The acid reaction changes in the three stages of tuberculosis. He thus found that in the first stage it persisted for seventeen days; in the second, for twenty-six days; and in the third for forty days. The uranalysis is carried out with three drops of a 1 in 100 solution phenolphthalein, which is added to 10 c.c. of urine diluted with 50 c.c. of distilled water, in a shallow glass. There are two maladies in which the acid reaction of the urine persists for a longer time, diabetes and typhoid fever. The persistency of the acid reaction in the urine was over ninety-seven per cent. of all the tuberculous patients examined by him.

LA SEMAINE MEDICALE.

September 15, 1909.

- Clinical and Experimental Serum Anaphylaxis.
By WEILL-HALLÉ and H. LEMAIRE.

September 12, 1909.

- Implantation of Vasa Deferentia with Anterior Urethra,
By A. BOARI.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held in St. Louis, October 12, 13, and 14, 1909.

The President, Dr. JOHN A. WITHERSPOON, of Nashville, Tenn., in the Chair.

Addresses of welcome were delivered by Dr. Tinsley Brown, president of the Missouri State Medical Society, and by Dr. Clarence M. Nicholson, president of the St. Louis Medical Society. The response on behalf of the association to these addresses was made by Dr. T. Hunt Stucky, of Louisville, Kentucky.

The Treatment of Peritoneal Infections in the Light of the Protective Nature of Peritonitis.—Dr. CHANNING W. BARRETT, of Chicago, stated that the spreading and absorption of infection was a process dangerous to life, and inflammation was a reaction beneficial to the patient in the presence of infection. He drew the following conclusions in regard to the treatment of peritoneal infections: 1. Peritoneal infection should be prevented by the greatest care in operative work and by the approved use of such means as are best calculated to prevent peritoneal infection from other sources. An infected appendix or one which, by reason of kinking, the

presence of a foreign body, etc., is likely to become infected, should be removed. Pathological conditions of the intestines, gallbladder, uterus, tubes, and ovaries should receive attention. 2. In the presence of existing peritoneal infection an effort should be made to discover its origin and to prevent further infection, if possible. 3. Easily and safely removable sources of infection, such as a badly infected appendix, or in some instances an infected kidney, ovary, or uterus, should be removed. But when this is done during the acute process it should be done, not because the structure is inflamed, but because the source of infection is being thereby entirely or largely removed. 4. All physical activity of the patient, massage, peristalsis, etc., which will tend to distribute infection should be avoided. 5. The development of bacteria in and their distribution through the intestinal tract should be lessened by the removal of gaseous fluid contents by stomach lavage, rectal flushing, and, if necessary, as is sometimes the case, enterostomy during the operation. 6. Whenever and wherever the area of infection can be reached, or whenever the infectious material exists in the general peritoneal cavity that can be drained, drainage should be established. The tendency of infection is to break down its limiting wall and to increase its area, and the damage done depends not only on the virulence of the infection, but on the area involved. The application of this principle to the treatment of appendicular infection is: 1. The removal of troublesome appendices before the acute onset of infection. 2. The removal of the infected appendix before any considerable peritoneal infection takes place. 3. Drainage of localized appendicular abscess with the removal of the appendix, if it is easily found. 4. Drainage of the peritoneal infection with the removal of the diseased appendix, if easily found, if a localized wall has not formed, the absence of wall or weakness of wall making drainage more urgent. 5. Treatment of inflammatory wall as a benign and protective process unless it interferes with the bowels in a mechanical way, when it may have to be disturbed even at the expense of the distributing infection. 6. Rest, general and local, emptying the intestinal tract, dilution of the toxins, and supportive treatment with salt solution should be made use of as indicated, with or without operative treatment.

The Treatment of Tuberculous Peritonitis.—Dr. W. A. BRYAN, of Nashville, called attention to the time prior to the development of peritonitis and to that subsequent to operation. In obscure conditions of the pelvis and right iliac fossa of mild grade, sufficient, however, to annoy the patient and to bring him to consultation, one where no physical signs or symptoms were present sufficient to clear up the aetiology, a diagnosis should not be ventured, and the treatment not begun until tuberculin was used to eliminate the possibility of tuberculosis. If it caused reaction, even then it did not mean that the tuberculous process was acting at one of the two sites named, although a physical examination would enable one to determine with satisfaction on this point by the exclusion of others. By this means the process might be dealt with much earlier on the average and the results be much more satisfactory. His results had been most gratifying in the accidentally discovered cases and in

those where an early operation was done on suspicion of tuberculosis. Surgery was usually accepted by the laity and too often by physicians as an ultimate resort, which, if it did not terminate in death by operation, would surely give complete relief. This was largely true in general work, but not in tuberculous peritonitis. We might excise the primary focus, but we dared not attempt eradication of the infection from the whole cavity. When this primary focus was withdrawn, the individual was not cured, but only placed where a cure might occur. All patients operated upon for tuberculosis should be subsequently treated by physicians.

DR. A. J. OCHSNER, of Chicago, said that after observing thirty-two cases of tuberculosis for a considerable time in order to ascertain the ultimate results, his conclusions were, taking every case of tuberculous peritonitis and treating it as we treated tuberculosis generally after surgical operation for the removal of the primary focus, about fifty per cent. or more would get well and remain well.

DR. J. HENRY CARSTEN, of Detroit, said it was not the tuberculosis itself that killed the patient, whether it was tuberculosis of the lungs or any other part of the body, but it was a mixed infection, and whenever we had a tuberculous condition in the abdomen, involving the tube or appendix, the patient was in danger of having added to that some other infection. If the appendix was the cause of the trouble, it should be removed. If the trouble was in the tubes and there was mixed infection, they ought to be removed. Patients who were operated upon for tuberculosis should be treated after operation like all other tuberculous patients.

DR. H. TUHOLSKE, of St. Louis, stated that, in addition to any surgical work it might be necessary to do in these cases of tuberculous peritonitis, general and supportive treatment should not be neglected.

DR. A. H. CORDIER, of Kansas City, Mo., said there must be something connected with surgery itself that had a marked curative effect in these cases of tuberculous peritonitis.

DR. RICHARD A. BARR, of Nashville, said the primary tuberculous focus should be within the abdomen and removed surgically if we expected to get satisfactory results.

Tuberculous Toxæmia in Surgery.—DR. ALEXANDER C. WIENER, of Chicago, in his paper presented the following therapeutic conclusions: 1. Obstructions of the respiratory organs which curtailed the intake of air were to be removed by the nose and throat surgeon. Too much stress could not be laid on the removal of enlarged tonsils and adenoids by the skilled operator. Other anomalies, such as phimosia, should be remedied. 2. Mechanical treatment should be undertaken to correct all deformities of the skeleton, particularly the spine and chest. Children and adults who began to develop round shoulders, with the subsequent hollows below and above the clavicles, needed urgent treatment. It was harmful to advise the wearing of apparatus for support during the growing period. Braces should be discarded as therapeutic agents in the treatment of deformities of the spine due to rickets. Instead, the treatment should consist of (a) complete mobilization of all the intervertebral and vertebrocostal joints; (b) correction of deform-

ities of the vertebræ and ribs; (c) active and passive exercise of the respiratory muscles, including the diaphragm.

DR. F. M. POTTENGER, of Monrovia, California, said the more we studied the infection in tuberculosis the more we came to the conclusion that infection took place in a great number of people early in life and that most of us went through life with at least quiescent foci of tuberculosis within our bodies. These quiescent foci were not always negative and they did produce symptoms which had not been generally recognized. Toxæmia in young neurasthenic school girls was undoubtedly due to latent foci of tuberculosis, and he had seen a number of such patients get well after treatment for tuberculosis.

Elements of Success in Surgical Work.—DR. A. H. CORDIER, of Kansas City, Mo., in a paper on this subject, drew the following deductions: 1. The field of surgery was a vast one and was best covered by the specialist in some of its departments, the eye and the ear especially. 2. Surgery and medicine should go hand in hand in the treatment of borderline cases; but should be divorced in the strictly surgical or medical cases. 3. The selection of a surgeon for a given case should be from no other standpoint than that of his recognized ability. 4. A surgical operation should be performed as quickly as possible consistently with good and complete technique. 5. All unnecessary and rough handling of important tissues and organs should be avoided. 6. Careful short anæsthesias would help to keep the death rate low. 7. Careful hæmostasis with proper ligature material was an important element in successful surgery. 8. Thorough aseptic technique should be carried out and might be obtained either with or without rubber gloves and a mask. 9. Lawn tennis suits and gloves were only too often the avenues leading to wound infection. 10. Short post-graduate courses instilled false surgical confidence and led to many surgical disasters. 11. Honesty and sincerity should ever be the keynote in deciding as to the advisability of performing any surgical operation. 12. Mental tranquility of the patient was of much importance preceding the performance of some surgical operations.

DR. CARSTENS said no one had a right to practise surgery, and especially abdominal surgery, unless he had been an assistant for at least a year with some first class surgeon in a hospital where he had seen hundreds and hundreds of operations and had witnessed the troubles, trials, and complications that were met with. Educated people found out who were the good surgeons. The general practitioner ought to know who was a good surgeon and ought not to trust everybody to perform operations which were attended with great danger to life.

DR. M. C. MCGANNON, of Nashville, stated that he was not willing to admit that the surgical work of the pioneer was as good as that which was being done to-day. The enthusiasm of youth led many a recent graduate to rush into the field of large surgery where he had better keep out until better trained. But how were we to stop that? It was the duty of this and other societies to adopt such measures as would prevent enthusiastic young men from rushing into a field of work that they could not fill. Many of us had had an opportunity of seeing dis-

asters following the surgical work of inexperienced men.

Dr. BARRETT said that surgery had come to occupy a large place in the world and it was our business as members of the medical profession to see that our surgical work was made just as successful as possible. The time had gone by when a man could plunge into surgical work and kill patients in order to learn how to do surgery. The opportunities for learning surgery now were too great and too cheap to permit of inexperienced men operating, and surgeons were only too willing to train those who wished to become surgeons.

Conditions Simulating Surgical Diseases.—Dr. MCGANNON related some recent experiences and said that it was not often that a surgeon was called upon to reverse a diagnosis of chronic peritonitis in favor of spinal neurosis of traumatic origin, and yet such had been his experience with a case brought to his attention a few months ago. He cited cases of appendicitis that had been on many occasions confounded with pleurisy and pneumonia. Many authors had called attention to the fact that pain associated with pneumonia and pleurisy, especially in children, might, if referred to the abdomen and if right sided, occasion a diagnosis of appendicitis. It had been his fortune to have two such cases referred to him for operation, and in them appendicitis was so closely simulated as to deceive some good practitioners.

Dr. EDWIN WALKER, of Evansville, was reminded of a case where a man had locomotor ataxia and the proposition was made to operate on him for gallstones. The patient afterward fell into the hands of a surgeon who operated for gallstones, but no gallstones were found. This man subsequently died of acute pneumonia and from extension of the ataxia.

Dr. CARSTENS said that two years ago a woman was brought to him with large fibroid tumors. She had been vomiting for three weeks off and on and could not sleep. He ran his finger over the clavicles and over the tibiae, found they were painful, and gave her a quarter of a grain of bichloride of mercury hypodermically every day, and in four or five days she was able to sleep well, the vomiting ceased, and the fibroids proved to have nothing to do with her symptoms. He saw a man who was supposed to have had gallstones. He looked at his tongue, saw a blue line along the edge of it, and said to him, "You are a painter, are you not?" and he replied, "Yes, sir." He told him he was not suffering from gallstones, but from lead poisoning.

Dr. J. RILUS EASTMAN, of Indianapolis, said that the general practitioner and internal medicine man ought to be educated along these lines. He went with two competent physicians in the summer into the country to examine a little girl whose case was diagnosed as appendicitis. A mass had been described as present in the right groin. The little girl was eleven years of age and these physicians considered it a clear case of appendicitis. While he sat at the bedside she took her handkerchief and expectorated profusely, and it proved to be tuberculosis.

Dr. BARR was called to the country a year ago to operate for appendicitis, the operation having been delayed for a number of days. The patient had been

sick for ten days. On examination he decided that his patient did not have appendicitis, but typhoid fever, and was able to persuade the attending physician that he was correct, and no operation was done. He took some of the patient's blood with him, had it examined, had a Widal test made, which proved to be negative.

Dr. WILLIAM B. BURNS, of Memphis, stated that he had seen two or three cases presenting symptoms of appendicitis which were as positive as we usually saw them, but examination of the blood showed the presence of malarial parasites, and hypodermic injections of quinine removed all the symptoms in four hours.

The Surgery of the Gallbladder.—Dr. W. D. HAINES, of Cincinnati, after giving a comprehensive survey of the anatomy and pathology of the stomach, duodenum, and pancreas in connection with the surgery of the gallbladder, said, in reference to cholecystectomy that the first essential was to secure the cystic duct and artery in the grasp of a long hæmostat placed near the junction of the cystic with the hepatic duct. Another hæmostat was placed a short distance before the first, and the cystic duct and vessel were divided. The first hæmostat would control hæmorrhage and the second would serve as a retractor in the succeeding steps of the operation. Incision of the peritonæum for stripping up the gallbladder should be made in the fold where the peritonæum was reflected from the gallbladder to the liver, in order to preserve sufficient tissue to cover the raw surface of the liver. If unusual difficulties presented themselves in ligating the cystic artery, the hæmostat might be left in place for forty-eight hours. The denuded surface of the liver was now covered by peritonæum and a rubber tissue covered drain placed in the bottom of the wound. A large vein sometimes mistaken for the portal was occasionally found crossing the ducts, which, if present, was almost invariably injured in the course of the removal of the gallbladder. It should be clamped, doubly ligated, cut, and the end retracted, as hæmorrhage in the bottom of the wound was difficult to control, caused delay, and added to the shock of operation. In closing the abdomen the peritonæum and posterior sheath of the rectus were included in the first tier by a buttonhole or interrupted suture. Two or three figure of eight silkworm gut sutures should be placed so as to include the muscle, the fascia, and skin, but were not tied until the anterior fascia was closed by continuous catgut.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Diseases of the Nose, Throat, and Ear. By CHARLES HUNTON KNIGHT, A. M., M. D., Professor of Laryngology, Cornell University Medical College; Surgeon, Manhattan Eye, Ear and Throat Hospital, etc.; and W. SOHIER BRYANT, A. M., M. D., Consulting Otolgologist, Manhattan State Hospital, etc. Second Edition, Revised, with 239 Illustrations. Philadelphia: P. Blakiston's Son, & Co., 1909. Pp. xix-631. (Price, \$4.50.)

The second edition of Knight's work appears as a

"triological" manual with a section on diseases of the ear. Additions are found mainly in the chapters on deviated septum and on diseases of the accessory sinuses. The work in its present form is a good working guide for the student, but the practitioner will miss an adequate description of some of the latest methods of examination and treatment. Among these we may mention radiography in accessory sinus disease, direct bronchoscopy, the use of the pharyngoscope, and enucleation of the tonsil. The description of the submucous operation for resection of the septum might well have been given in greater detail. Dr. Bryant's chapters on diseases of the ear form a valuable addition to the work, those on operative technique being particularly instructive. The consideration of intracranial and systemic complications is rather too condensed. The index will bear revising, and it is to be hoped that in a future edition the author's bibliography, appended to each and every chapter, may be dropped.

A Manual of Otolology. By GORHAM BACON, A. B., M. D., Professor of Otolology in the College of Physicians and Surgeons, Columbia University, New York; Aural Surgeon, New York Eye and Ear Infirmary, etc. With an Introductory Chapter by CLARENCE JOHN BLAKE, M. D., Professor of Otolology in Harvard University. Fifth Edition, Revised and Enlarged. With 147 Illustrations and 12 Plates. New York and Philadelphia: Lea & Feiger, 1909. Pp. 508.

The progress of otology in the last few years is mirrored in the last edition of Bacon's excellent little manual. As a student's guide it has been popular from its first appearance. The present, fifth, edition contains much that is new, including chapters on adenoid growths, enlarged tonsils, and diseases of the nasal passages, all of which have an important practical bearing on otological questions, and added detail in the sections on Intracranial complications, the Schwartze-Stacke operation, and diseases of the sound perceiving apparatus. The introductory chapter, by Dr. Blake, is a broad, authoritative, and serious statement of the aims and methods of modern otology and its relations to health and to general medicine.

The Medicochirurgical Series, No. I. The Practice of Anæsthetics. By ROWLAND W. COLLUM, L. R. C. P., Lond., M. R. S. C., Eng., Anæsthetist to St. Mary's Hospital, Paddington, etc. And General Surgical Technique. By H. M. W. GRAY, M. B., C. M., F. R. C. S., Edin., Surgeon and Lecturer on Clinical Surgery, Royal Infirmary, Aberdeen, Edited by James Cantlie, M. A., M. B., C. M., Aberdeen, F. R. C. S., Eng., Surgeon to Seamen's Hospital Society, etc. New York: William Wood & Co., 1909. Pp. xiv+382. (Price, \$3.)

Mr. Cantlie remarks in the preface to this, the first volume of the medicochirurgical series, that it is the intention to treat surgery and medicine conjointly. He says: "Disease, its nature and treatment, appears, in our textbooks, to be specialized to an extent that is neither practical nor scientific. When studying a disease, and considering its course and treatment, we have to consult two, three, or more volumes, by different authors; we are apt to lose sight of the disease as a whole, and to consider its varying and various phases and stages as distinct entities. In the books of the medicochirurgical series the reader will find the medical and surgical aspects of a disease, as well as the medical and surgical treatment, considered as a whole, instead of in

piecemeal fragments in separate volume. Where necessary, a physician and a surgeon cooperate in writing a volume, and together present the medical and the surgical aspects of a disease in a completed picture."

The book before us consists of two parts: The practice of anæsthetics, by Rowland W. Collum; and general surgical technique, by H. M. W. Gray. Both subjects have been treated according to Mr. Cantlie's programme. In the first part, Collum speaks of the chemical properties and impurities; the physiology of anæsthesia; the preparation for administering the anæsthetic; the selection of the anæsthetic, and procedure in special cases; difficulties and dangers; and the after effects and their treatment.

Gray, the author of the second part, has divided his subject into eight chapters: Personal preparation of the surgeon and assistants, the operating department, ligatures and sutures, wound drainage, bandaging (an absolutely too short chapter, giving only illustrations without text, which can only be understood by an expert in bandaging, and not by one who wishes to instruct himself in the subject), the preparation and after treatment of the patient, operations in private houses, and emergency operations (this chapter is entitled part four, although no division appears in the book up to this chapter).

Klinische Mitteilungen aus dem Gebiete der Ohren- und Nasenkrankheiten. Für Studierende und Aerzte. Von Dr. VICTOR LANGE, Kopenhagen. Berlin: S. Karger, 1910. Pp. 126.

In a series of interesting pathological and clinical studies, dedicated to the memory of Schaeffer, the author has taken up, seemingly at random, a number of important practical and theoretical questions. The little book makes interesting reading, and is recommend to those who wish to refresh their knowledge with a general survey of such topics as the adenoid habitus, resonance spaces in speech and song, the adenoid operation, the significance of a normal nasopharynx, and others of similar import.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York, 1907-1908. By Professor EDWIN O. JORDAN, Professor JAMES EWING, Professor DAVID L. EDSALL, Professor ERNEST H. STARLING, Professor GEORGE W. CRILE, Professor JOSEPH JASTROW, Professor OTTO FOLIN, Professor ROSS G. HARRISON, Professor E. A. SCHÄFER, and Professor ALONZO E. TAYLOR. Philadelphia and London: J. B. Lippincott Company, 1909. Pp. 266.

The volume of lectures delivered under the auspices of the Harvey Society of New York during the winter of 1907-'08 contains contributions from Edwin O. Jordan, Ph. D., The Problems of Sanitation; from James Ewing, M. D., Cancer Problems; from David L. Edsall, M. D., The Bearing of Metabolism Studies on Clinical Medicine; from Ernest H. Starling, M. D., F. R. S., F. R. C. P. (Lond.), The Chemical Control of the Body; from George W. Crile, M. D., Surgical Shock; from Joseph Jastrow, Ph. D., On the Trail of the Subconscious; from Otto Folin, Ph. D., Chemical Problems in Hospital Practice; from Ross G. Harrison, Embryonic Transplantation and the Development of the Nervous System; from Professor E. A. Schäfer, Artificial Respiration in Man; and from Alonzo Engel-

bert Taylor, M. D., *The Rôle of Ferment Reversions in Metabolism*. The lectures are all on subjects of present interest and all are well written and readable.

The Fundamental Principles of Chemistry. An Introduction to All Textbooks of Chemistry. By WILLIAM OSTWALD. Authorized Translation by HARRY W. MORSE. New York: Longmans, Green, & Co., 1909. Pp. xii-349.

More than any other work dealing with the fundamental principles of chemistry in their purely theoretical side does the present volume meet a present day need. Of late years the task of examining the concepts of modern scientific knowledge has been pursued with vigor, the chief aim of study having been concerned apparently with the analysis of the several generalizations that are the outcome of an important and justified desire to explain the newer theories of chemistry relating particularly to the discovery of new facts and the statement of new experiences. All of this is postulated in the preface to Ostwald's work, which is rather pretentiously entitled "an introduction to all textbooks of chemistry."

There is, of course, some reason for the subtitle employed by the author; for, as noted in the preface, there has been of late years an extraordinary development of the experimental side of chemistry, which has had the effect of thrusting methodical and practical work into the background.

The physics of chemistry occupies a large portion of the work, this leading up to Arrhenius's theory of electrolytic dissociation and all that is implied thereby. This theory is encountered at nearly every stage of the work and culminates in the closing chapter, on The Ions (p. 331), in which the generalizations propounded earlier in the volume are developed.

We regard this volume as a work of considerable scientific interest, and one that is destined to prove of value as a supplement to modern chemistry teaching, but that it will ever find practical application in the class room we have our doubts. In the domain of chemistry method and practice still claim their own and speculation belongs to another sphere. As an adjunct to methodical instruction in elementary chemistry, this work may, however, take a deserved place.

Protozoology. By GARY N. CALKINS, Ph. D., Professor of Protozoology in Columbia University, New York. Illustrated with 125 Engravings and 4 Colored Plates. New York and Philadelphia: Lea & Febiger, 1909. Pp. ix-349.

This book is of particular interest to medical men because it deals with the parasitic protozoa quite as much as, if not more than, with the free living forms. A book on protozoan parasites by a zoologist has obvious advantages. Prominent among these advantages is that of greater accuracy of nomenclature and classification when the subject is treated from the zoological instead of from the pathological side. A book on bacteriology by a botanist, for example, would no doubt throw much light on some bacteriological problems which are at present obscure.

Professor Calkins has treated the subject in ten chapters. The first is devoted to a discussion of the general organization of the protozoa; the second to a discussion of the physiological activities of the

protozoa; the third to the protoplasmic age of protozoa; the fourth to a discussion of conjugation, maturation, and fertilization; the fifth to a discussion of parasitism; the sixth, the seventh, and the eighth to the pathogenic flagellates; the ninth to the pathogenic hæmosporidia; and the tenth to the pathogenic rhizopoda.

The author accepts the smallpox bodies described by Guarnieri, Councilman, Brinckerhoff, himself, and others under the name of *Cytocytes variolæ*, and the Negri bodies found in the brain of animals dead of rabies, as true protozoan parasites. The latter organism he has named *Neurorhizocytes hydrophobia*. He accepts the spirochætes as protozoan parasites, making them a special order (*Spirochætida*) under the class *Zoomastogofora* and subclass *Lissoflagellata*. On page 217, however, he suggests the name *Spirillochætida* as a family name for these forms and others. On page 231 there is an admirable summary of the points at variance between those who claim the spirochætes as bacteria and those who maintain that they are protozoa. He attacks the position of Nery, MacNeal, and Torrey, who concluded, in 1907, that *herpetomonas*, *crithidia*, and *trypanosoma* were identical. He maintains that on the basis of cultural methods alone there is not sufficient evidence for a positive statement of this kind, and that until the complete life histories of the various forms are worked out synonyms had better be untouched. The important structural characteristic which the undulating membrane represents far outweighs the cultural peculiarities.

He accepts the name *Plasmodium immaculatum* for the æstivoautumnal malarial parasite. We think *Plasmodium falciparum*, which he uses on page 283, the better name. He makes a mistake on page 65, where he says that this organism exhibits quartan and tertian characteristics; the parasite has quotidian and tertian characteristics.

The author attacks the classification of blood inhabiting protozoa suggested by Sambon, in 1906, and adopted by Manson in the second edition of his work on *Tropical Diseases*. He considers that the proper name for the Leishman-Donovan body is *Herpetomonas Donovanii*. He gives a list of seventy known trypanosomes, saprophytic and pathogenic. On pages 204 to 214 there is an excellent discussion of the various bodies that have been described as protozoa in relation to carcinoma. He discards all of these as true protozoa, considering them to be evidences of degeneration of the nuclei of the cells or cell inclusions of leucocytes or blood platelets. He speaks with great confidence of the existence of a protozoan parasite as the cause of yellow fever. While many pathologists are convinced that a protozoan is the cause of that disease, they do not speak with a degree of conviction equal to that of the author. There is a good discussion of the invertebrate hosts and the life cycle of trypanosomes (pages 261 to 267). A short reference is made to the organism described by Mallory, in 1904, in the skin of scarlet fever patients, and named *Cyclasterion scarlatinale*, as well as to the bodies described by Prowazek in cases of trachoma. There is an excellent bibliography occupying twenty-two pages. The illustrations are fine.

MEDICOLITERARY NOTES.

In Caruso's reminiscences in the November *Strand*, the well known tenor tells how common a habit frequent smoking is among singers and how little it apparently hurts the voice. On the other hand, drinking whiskey is known to affect the voice disastrously and instantaneously. The simple reason is that in order to sing to perfection, not only must the health be good, but the nervous system must be at top pitch. Whiskey affects the singer precisely as it affects any one who performs a physical act; it diminishes the output both in quantity and in quality, giving the while to the worker a totally false impression of unusual efficiency.

The title of Robert Hichens's latest novel is *Bella Donna*; it should make readers open their eyes.

The old way of rewarding the hero of romance at the close of his strenuous career was to have him find a gold mine or suddenly discover the long lost will making him heir to the late wealthy squire. Several recent novels, quite up to date, provide the protagonist shortly after his nuptials with the first royalties of his recently successful play. This opens up a vista not to be surpassed of wealth, fame, réclame, and every modern requisite to happiness.

Charles Lamb says in *The Convalescent*: To be sick is to enjoy monarchical prerogatives. Compare the silent tread, and quiet ministry, almost by the eye, by which he is served—with the careless demeanor, the unceremonious goings in and out (slapping of doors, or leaving them open) of the very same attendants, when he is getting a little better—and you will confess, that from the bed of sickness (throne let me rather call it) to the elbow-chair of convalescence, is a fall from dignity, amounting to a despotism.

It is not uninteresting to note that the first physicians of note in Rome, who were Greeks attracted thither by the growing richness of the metropolis, generally opened sanatoria in which baths were given and drugs and medicine sold. Thus we see that the early Romans, like many primitive moderns, insisted on having something tangible for their services and rebelled at paying for mere good advice. Opposed to these regular practitioners were a group of self styled philosophers who insisted that medicine could be studied theoretically and reduced to the principles of dialectics; they corresponded to our Christian Scientists or Emmanuelists.

The serpent, owing to its many unique characteristics, has always been regarded by the ignorant with awe and superstition and has played a great part in the mythology and symbolism of all religions. Æsculapius was represented as attended by various animals, and among these the serpent was almost invariably portrayed. It is not impossible that in the case of Æsculapius the long and sinuous line of one of the tremendous processions early organized in his honor gave rise to a story of his having sent a serpent upon some errand of healing, or of having taken that form himself, as in the legend of his leaving Epidaurus to save Rome after the visit to his shrine of the celebrated delegation conducted by Q. Ogulnius.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of, and deaths from, smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending November 5, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
District of Columbia—Washington, Oct. 17-23.....		1	
Georgia—Macon.....Oct. 9-15.....		2	
Illinois—Chicago.....Oct. 17-23.....		1	
Indiana—Indianapolis.....Oct. 18-24.....		2	
Massachusetts—Boston.....Oct. 17-23.....		2	
N. C.—Columb.—Charlotte.....Oct. 16-22.....		2	1
North Dakota—Henry County.....Aug. 1-31.....		2	
Ohio—Dayton.....Oct. 17-23.....		2	
Texas—San Antonio.....Sept. 30-Oct. 2.....		4	
West Virginia—Wheeling.....Oct. 17-23.....		1	

<i>Smallpox—Foreign.</i>			
Algeria—Algiers.....Sept. 1-30.....		4	
Argentina—Buenos Aires.....Sept. 1-30.....		5	3
Brazil—Amoy.....Sept. 11-26.....		7	1
China—Amoy.....Sept. 5-11.....		1	
Egypt—Alexandria.....Sept. 17-23.....		9	4
Egypt—Cairo.....Sept. 19-23.....		2	
Egypt—Cairo.....Sept. 24-30.....		2	
France—Marseilles.....Sept. 19-25.....		2	
Greece—Athens.....Sept. 19-25.....		2	
Hungary.....Sept. 18-24.....		2	
India—Madras.....Sept. 6-13.....		1	
India—Calcutta.....Oct. 4-10.....		6	
Italy—Genoa.....Oct. 11-17.....		4	1
Mexico—Veracruz.....Sept. 3-9.....		12	2
Portugal—Lisbon.....Sept. 27-Oct. 2.....		7	
Russia—Odessa.....Sept. 27-Oct. 2.....		1	
Russia—Moscow.....Aug. 29-Sept. 4.....		1	
Russia—Warsaw.....July 1-Aug. 31.....		1	8
Spain—Barcelona.....Sept. 1-30.....		3	
Spain—Madrid.....Oct. 2-9.....		2	
Spain—Valencia.....Oct. 2-9.....		2	
Spain—Vigo.....Oct. 2-9.....		Present	
Turkey—Constantinople.....Oct. 4-10.....		Present	
Turkey— Smyrna.....Sept. 29-Oct. 5.....		1	Epidemic

<i>Cholera—Foreign.</i>			
Belgium—Antwerp.....Oct. 21-27.....		8	6
China—Amoy.....Sept. 25.....		26	
China—Hankow.....Sept. 25.....		Present	
China—Shanghai.....Oct. 12-18.....		Present	
Germany—Heydenkrug, district.....Oct. 20.....		1	
Germany—Weichsel Niederrung.....Oct. 16-20.....		8	
Germany—Tilsit.....Oct. 11.....		1	
India—Calcutta.....Sept. 11-18.....		8	
Java—Batavia, district.....Sept. 12-18.....		35	30
Korea—Seoul.....Sept. 21.....		Estimated 100 cases daily	
Manchuria—Dalny.....Sept. 19-25.....		5	7
Netherlands—Battem.....Oct. 1-8.....		4	1
Russia—Riga.....Oct. 2-8.....		16	4
Straits Settlements—Singapore.....Sept. 12-18.....		1	

<i>Yellow Fever—Foreign.</i>			
Brazil—Para.....Sept. 27-Oct. 9.....		9	5
Mexico—Merida.....Oct. 8-14.....		1	

<i>Plague—Foreign.</i>			
Australia—Brisby.....June 4.....		1	
Brazil—Rio de Janeiro.....Sept. 20-26.....		1	1
China—Tientsin.....Sept. 9-22.....		2	2
China—Amoy.....Sept. 8-15.....		2	2
Ecuador—Guayaquil.....Sept. 19-25.....		9	
Hawaii—Hilo, Pepeekeo.....Oct. 4.....		1	
India—Calcutta.....Sept. 13-18.....		9	
Indo-China—Saigon.....Sept. 7-13.....		7	
Mauritius.....Sept. 13-19.....		2	2
Peru—General.....Aug. 28-Sept. 23.....		14	13
Zanzibar.....Oct. 20-26.....		2	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending November 3, 1909:

ALEXANDER, E., Acting Assistant Surgeon. Granted fifteen days' leave of absence from November 4, 1909.

CARMICHAEL, D. A., Surgeon. Granted eighteen days' leave of absence from November 15, 1909.

DEERHAKE, WILLIAM P., Acting Assistant Surgeon.

Granted one day's leave of absence in October, 1909, under paragraph 210, Service Regulations.

ELDRIDGE, M. B., Pharmacist. Granted six days' leave of absence from October 11, 1909.

FOSTER, M. H., Passed Assistant Surgeon. Directed to proceed to Antwerp, Belgium, upon special temporary duty, and upon completion of said duty, report to the medical officer in charge at Naples, Italy, for duty.

FOX, CARROLL, Passed Assistant Surgeon. Relieved from duty on Revenue Cutter *Bear*, and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

GILL, S. G., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from November 9, 1909.

GWYN, M. K., Passed Assistant Surgeon. Granted three days' leave of absence from October 30, 1909, under paragraph 191, Service Regulations.

HOLSENDORF, B. E., Pharmacist. Granted thirty days' leave of absence from November 29, 1909.

HUNT, REID, Chief, Division of Pharmacology, Hygienic Laboratory. Detailed to attend the National Conference on Pellagra to be held in Columbia, S. C., November 3 and 4, 1909.

JAMES, WILLIAM F., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 4, 1909.

ROBERTS, NORMAN, Passed Assistant Surgeon. Granted two days' leave of absence from November 1, 1909, under paragraph 191, Service Regulations.

ROSENAU, MILTON J., Surgeon. Resignation accepted to take effect January 31, 1910, revoked, by direction of the President; granted five months' leave of absence, without pay, from February 1, 1910.

SPANGLER, L. C., Pharmacist. Granted six days' leave of absence from October 18, 1909, under paragraph 210, Service Regulations.

STIMPSON, W. G., Surgeon. Relieved from duty on Revenue Cutter Manning, and directed to proceed to Philadelphia, Pa., and assume charge of the Service, relieving Passed Assistant Surgeon R. H. Creel.

STONER, J. B., Surgeon. Granted ten days' leave of absence from November 2, 1909.

WHITE, J. H., Surgeon. Directed to report at the bureau upon special temporary duty.

WOODWARD, R. M., Surgeon. Granted fourteen days' leave of absence from October 30, 1909, on account of sickness.

Appointment.

Dr. Charles Bell appointed an acting assistant surgeon for duty at Detroit, Mich.

Resignation.

Joseph H. Kastle, Chief, Division of Chemistry, Hygienic Laboratory, resigned, to take effect September 30, 1909.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 6, 1909:

ARCHER, W. M., JR., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail January 5, 1910, for Philippine service.

BARTLETT, C. J., Captain, Medical Corps. Granted leave of absence for three months.

BUSHNELL, G. E., Lieutenant Colonel, Medical Corps. Granted leave of absence for six months on account of sickness.

GRUBBS, R. B., Captain, Medical Corps. Granted an extension of one month to his leave of absence.

HARRIS, H. S. T., Lieutenant Colonel, Medical Corps. Ordered to Hawaiian Islands on November 5th transport, to inspect hygienic and sanitary conditions at Hawaiian posts.

LA GARDE, L. A., Lieutenant Colonel, Medical Corps. Assigned as president of the faculty, Army Medical School.

PHILLIPS, H. F., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail January 5, 1910, for Philippine service.

WILSON, ELSWORTH, First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station, and ordered to San Francisco, Cal., to sail January 5, 1910, for Philippine service.

Navy Intelligence:

Official list of changes in the station and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 6, 1909:

BUTTS, H., Assistant Surgeon. Detached from the Naval Station, Cavite, P. I., and ordered home via the *Suez Canal*.

HARLAN, T., Acting Assistant Surgeon. Ordered to duty with the First Torpedo Flotilla, Pacific Fleet.

HENRY, R. B., Assistant Surgeon. Ordered to the *Rainbow*.

HIGGINS, S. L., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the *Wilmingtton*.

HUFF, E. P., Assistant Surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the *Villalobos*.

KELLEY, H. L., Assistant Surgeon. Detached from the First Torpedo Flotilla on board the *Decatour* and ordered to the Naval Hospital, Canacao, P. I.

KOLTES, F. X., Assistant Surgeon. Detached from the *Wilmingtton* and ordered to the Naval Station, Cavite, P. I.

LEDBETTER, R. E., Surgeon. Ordered to the Naval Station, Cavite, P. I.

LEE, A. E., Assistant Surgeon. Detached from the *Rainbow* and ordered to the *Albatross*.

MCCORMACK, A. M. D., Surgeon. Detached from temporary duty at the works of the General Electric Company, Schenectady, N. Y., and ordered home to await orders; ordered to duty in connection with the fitting out of the *Michigan* and to duty on board that vessel when commissioned.

NOBLE, D. H., Assistant Surgeon. Ordered to the Naval Station, Olongapo, P. I.

SHIFFERT, H. O., Surgeon. Commissioned surgeon from April 1, 1909.

SMITH, H. L., Passed Surgeon. Detached from the *Villalobos* and ordered to the Naval Station, Olongapo, P. I.

WIEBER, F. W. F., Surgeon. Detached from the Naval Station, Cavite, P. I., and ordered home with permission to delay two months *en route*.

Births, Marriages, and Deaths.

Married.

SIMPSON—BALDERSTON.—In Mount Ayr, Iowa, on Friday, October 20th, Dr. William Lively Simpson and Miss Lenora A. Balderston.

Died.

BANKS.—In Raleigh, North Carolina, on Tuesday, October 26th, Dr. Thomas L. Banks.

BATCHELDER.—In New York, on Sunday, October 31st, Dr. Benjamin Batchelder, aged eighty-three years.

BRUCE.—In Easthampton, Massachusetts, on Monday, November 1st, Dr. Frank C. Bruce, aged forty-nine years.

COBB.—In Boston, on Sunday, October 31st, Dr. Charles Henry Cobb, aged sixty-five years.

DOWLING.—In New York, on Saturday, October 30th, Dr. George Butman Dowling, aged forty-three years.

DUCODE.—In Cottonport, Louisiana, on Wednesday, October 27th, Dr. Cleophas Joseph Ducote, aged fifty-nine years.

GORDON.—In Rankin, Pennsylvania, on Wednesday, October 27th, Dr. William H. Gordon, aged forty-five years.

HORNSBY.—In St. Louis, Missouri, on Tuesday, October 26th, Dr. Nicholas L. Hornsby, aged eighty-seven years.

METCALF.—In Brooklyn, N. Y., on Friday, October 29th, Dr. John Trumbull Metcalf, aged ninety years.

MEYER.—In Dubuque, Iowa, on Sunday, October 17th, Dr. Ralph W. Meyer, aged thirty-four years.

NICHOLS.—In Cambridge, Maryland, on Wednesday, October 27th, Dr. Clarence Nichols.

OTT.—In Sayre, Pennsylvania, on Sunday, October 31st, Dr. C. H. Ott, aged forty-eight years.

RIKER.—In Fenton, Michigan, on Sunday, October 31st, Dr. Aaron Riker, aged seventy-eight years.

TERWILLIGER.—In Brooklyn, N. Y., on Sunday, October 31st, Dr. William Gilbert Terwilliger, aged thirty-eight years.

YOUNG.—In Haverhill, Massachusetts, on Wednesday, October 27th, Dr. L. J. Young, aged fifty-nine years.

New York Medical Journal

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WHOLE No. 1616.

Lectures and Addresses.

ADDRESS OF WELCOME

Delivered at the Opening of the New Hall of the College of Physicians of Philadelphia.

By S. WEIR MITCHELL, M. D.,
Philadelphia.

I am honored by the president and fellows of this ancient collegiate society with the duty of making you welcome to the hospitality of our new hall.

Few of you who face me now but have known some of your present hosts in hours of anxiety, in a day of release from fear, or at a time when we were made to feel the bitterness of defeat. You have known us thus as individuals. Here to-night as a society representative of the science and art of medicine we greet you, our guests.

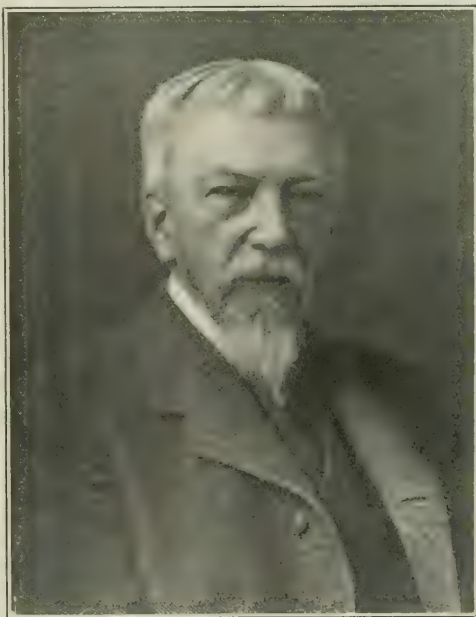
I find it fitting to say a few words to you Philadelphians of this institution in its relation to the city, the State, and the country. I hope not to be uninteresting; I promise to be brief.

I am not aware that there has ever been written a history carried through the ages of any one of the learned professions. Most interesting would it be to trace the influence upon the physician of social forms and fancies, religions and governments, to learn how many of his professional characteristics are permanent, how many have undergone change. It would, I believe, be found that in the Old World the definite boundaries of caste and long settled restrictions kept him for centuries in the bondage of unyielding limitations. He held on his course of progressive advance, but was forbidden by custom

to be or to do many things which he might reasonably have desired to be or to do. His social status was unalterably defined.

In some European countries it is to-day as despotically settled. Even in England—where are many roads which lead to coveted title—only once has a peerage rewarded exceptional achievement in medicine. Nor until of late have sons of the titled classes been willing to enter our profession. It is all changing for the better, but I doubt a little if the practising physician in Great Britain is as free from the bondage of custom and popular prejudice as are his American brothers.

In the seventeenth and eighteenth centuries in England, the habits, manners, social place, and even the dress of the doctor, were governed by customs which were the more despotic because of being the outcome of the unquestioned legislation of conventional usage. It must have been for some of the men thus fettered a glad day when the tide of immigration flowed westward. It opened a new world of resourceful liberty to the physician. Being usually the most intelligent and most educated of emigrants, he made ready use of this heritage of freedom. Here in Pennsylvania he was especially fortunate, for by happy accident he was in many cases within the friendship of William Penn, and was in some cases of that gentle blood and breeding which did not lose in the new land a certain influential value. These, our earliest physicians, were generally Welsh and in nearly all cases of the



S. Weir Mitchell

Society of Friends. Like the Great Proprietor, they came hither with the desire to find in this new land that loftiest freedom—the liberty of the worshipping soul. The found also other privileges. In colonial

New England the clergy ruled the State. In New York commerce and the land holders were dominant. In the South the planter held sway. In this city, which for a time was the State of Pennsyl-

The physician of the first half of the eighteenth century was the busy founder of schools, hospitals, colleges, learned societies, and libraries. It is in some respects a singular story of which, with justice, we are proud; it should be more fully told. At a later day Benjamin Rush was a signer of the stern arraignment of the crown, and during a life of vast industry a member of almost every legislative body up to the time of his death. Dr. William Shippen, too, was of the Continental Congress. I may add that besides the many lawyers who signed the Declaration of Independence, there were in all five men who had practised medicine.



DEDICATION OF THE NEW HALL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FIG. 1.—The procession leaving the church. Dr. S. Weir Mitchell, Mr. Andrew Carnegie, Dr. F. P. Henry, Dr. A. B. Macallum, of Toronto, Canada, and Dr. William J. Taylor.

vania, the physician had in our early days such political and social power as belonged to him as a class nowhere else. The results for him and the commonwealth were interesting. The small need for medical aid in the young city must have given the doctor much leisure, and that he was selected for offices unrelated to his medical work proves his great superiority to the mass of our early settlers and was, I think, peculiar to us.

Dr. Thomas Wynne, who came in the *Welcome* with the Proprietor in 1682, was for three years president of that first legislative assembly of which Dr. Edward Jones, his son in law, was a member. Dr. Thomas Lloyd became deputy governor, president of council, and keeper of the great seal. Dr. Thomas Graeme, of Scotch descent, a man in large practice, was at one time or another naval officer, master in chancery, and at last chief justice with a salary of two hundred and fifty dollars a year. He founded our St. Andrew's Society. He aided to create the Philosophical Society, and died collector of the port. Dr. Griffith Owen, Penn's physician, between visits, seems to have found time to be a member of the Provincial Council and of the Assembly, a commissioner of property, deputy master of the rolls, coroner, and at last judge in the court of common pleas. These doctors were variously useful. Dr. John Kearsley planned Christ Church, and as a legislator presided over the assembly. Dr. Cadwalader was for years, from 1755, a member of the council and assembly, and was also actively useful in making Indian treaties and in arranging fortifications for the defence of the city.

this city owe, with as much else of as permanent value, the foundation of this collegiate society. It is, therefore, fitting that we have asked hitherto-night what is most representative of the historic and social life of Philadelphia to remind you of what this institution is to-day and has been in the past.

And now go back with me to the birthday of this college. Philadelphia had then some forty thousand people. It was the seat of government. Franklin, Bartram, and Rittenhouse represented its science. Washington, at fifty-six, was then of the troubled men who were in this year to forge the constitutional bond destined to be the parent of so much good and to sow in its indecisions the seed of so much bloodshed.

In the Academy Building on Fourth Street, south of Arch, then in use by the University of Pennsylvania, on the evening of January second, 1787, assembled a notable group of men. I seem to see these ruddy gentles by the dim light of candles, for which I find our first bill of two shillings and six pence. There are some in Quaker beavers, and all are in knee breeches and stockings with gold buckles or silver on low shoes, good lace neckwear, and wrist ruffles. The powdered wig is here—a fading fashion. They sat, I am sure, with between their legs the professional gold headed cane. Now and then to aid their deliberations, they consulted the meditative snuffbox. I find, too, a receipted bill, eleven pence, for a bushel of sand, I presume to cover the floor.

In this old building Whitfield preached. To the

east across the street was the Quaker burial ground. To the west was the graveyard of Christ Church. In one or other of these final homes nearly all of these men were to find at last repose. Some wit was wasted on the doctors in consultation between two graveyards.

I want to connect these our own ancestors with the family history of the city. It is almost enough to mention the names of these men. They sound familiar as the hour, for here with us wealth has not been essential to keep families in the social foreground of repute.

Of the founders of this society were John Jones, Benjamin Rush, William Shippen, Adam Kuhn, James Hutchinson, Gerardus Clarkson, John Redman, George Glentworth, Samuel Powel Griffiths, John Morris, John Carson, John Foulke, and later Michael Leib, Caspar Wistar, Parke, Dorsey, and others.

Let me add their medical ancestors and teachers: Wynne, Jones, Graeme, Cadwalader, Griffith, Owen, Bond, Lloyd, and the elder John Kearsley. A long roll of our city families trace their descent from members of these memorable groups. Of our own founders were many who assisted at the birth of the nation, rode with Washington, and shared the fates of indecisive battles and the privations of Morristown and Valley Forge.

As soldier surgeons they share the national neglect of the services of the army doctor of our later history. It is no pleasing thing to confess that no monumental marble tells of the gallant gentlemen who were heroes of Surgeon Reed's immortal victory over yellow fever. What record is there of the surgeons who fell in many battlefields in our civil war? They died while aiding the wounded or were killed while calmly operating under fire where bullets were raining death. What test of courage compares to that? The land is populous with statues of generals, some of whom are ever most gratefully to be remembered, some of whom it were as grateful to forget. No such memorials record the country's gratitude to the surgeon soldier—that essential in the terrible business of war.

Look around you in this noble hall. We at least do not forget. Here are portraits of the physicians who were friends of Washington, Franklin, Lafayette, and Hamilton. I should like to have been physician to Hamilton! The portraits of our presidents are here, from John Redman in 1787, of whom it was said that "by his soothing manner he suspended pain or chased it away by his conversation." I fear the secret of this anæsthetic manner is lost to-day. I should like to linger over these notable personalities, our founders. Rush would need too large a page. Most of them are well known. Some have but a brief record; thus Glent-

worth, whose history is in a line of a letter of Washington. He says of this his Surgeon Glentworth: "No nobler man or more skilful physician ever lived, an estimable friend." With such brief judg-



DEDICATION OF THE NEW HALL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FIG. 2.—The procession on the way to the hall. Dr. W. W. Keen, Dr. George E. de Schweinitz, Dr. S. Weir Mitchell, Mr. Andrew Carnegie, Dr. F. P. Henry, Dr. William J. Taylor.

ments I could sum up for you how these men were considered in their own day. They seem indeed very near to us when, for instance, we come upon Caspar Wistar, whose name, given in his honor to the beautiful vine wistaria, is heard in every country. Of him it was said: "Decorous, suave, honorable, and courteous, he forgot nothing except injuries."

Many of our pictures of the men of a more recent time must for some who are here to-night call back grateful memories.

I remind myself and you that this is the new home of a Philadelphia institution nearly a century and a quarter old. It was felt by us that it should be something more important, more monumental, than merely a place for our meetings and our great library.

Of this last a word is needed. As you wander you will come at the back of the hall upon the iron book stacks which guard eighty-nine thousand volumes and one hundred thousand pamphlets. An absolutely free library, it is open to all who would read here. A card from a fellow gives permission as freely to take books home. Here come and are welcome men and many women, physicians of every sect, reporters, the laity in search of knowledge of spas, climatic conditions, and other matters of interest. What this vast collection is to us, how essential, I need not say. It preserves for us the changing story of our history, and we are kept in constant touch with the science of all nations by the receipt of nine hundred journals.



DEDICATION OF THE NEW HALL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FIG. 3.—The procession entering the new hall. Dr. George F. de Schweinitz, Dr. S. Weir Mitchell, Mr. Andrew Carnegie, Dr. F. P. Henry, Dr. William J. Taylor, Dr. John S. Billings, of New York, Dr. A. B. Macdonald, of Toronto, Canada.

Let me now ask your attention to our performance of another important public service in our Directory for Nurses. I am pleased to say that the fee formerly asked for furnishing a nurse is soon to be abolished. The directory will be then as free as is our library. It is simple. A telephone call brings a nurse to the bedside. You may get some idea of the vast usefulness of this service when I tell you that since 1882 the directory has answered forty-three thousand requests for trained nurses.

This hall was meant to be also a monument commemorative of men who served alike their city, their country, and their God. It is yours in this sense. It is also ours. Some of the rooms which bear names you share or with which you have ancestral connection are furnished by families as memorials of their medical forefathers.

Within and without nothing in the way of taste guided thoughtfulness has been spared to make this building an ornamental addition to the city. It owes its unusual architectural charm to the skill of Messrs. Stewardson and Jamison, to whom I gladly offer the thanks of the college; as warmly I thank the members of

the building committee, who have given to every detail an incredible amount of industry, time, and thought.

To this our new home we welcome you to-night.

This building could not have been built for years had it not been for the generous gifts not only of our own citizens, but of friends elsewhere, who understood that the history of medicine in this city is national property. To speak rightly of those who gave would be only to insist that the giver of five dollars may be on an equality of generous expenditure with the giver of one hundred thousand. The list of subscribers soon to be printed in the record of our present commemoration will gratefully mention all who gave. Of them were nearly all the fellows of the college.

I end with but one regret. We enter our new home with a certain amount of debt. I do not doubt that in this audience are Philadelphians who will find pleasure in the opportunity to aid us in meeting this obligation.

The president and fellows will now receive you, our friendly guests.

1524 WALNUT STREET.



DEDICATION OF THE NEW HALL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FIG. 4.—Dr. William J. Taylor presenting the new hall to Dr. George F. de Schweinitz. From left to right are Dr. Louis Starr and Dr. A. R. Cleeman; while on the other side of Dr. de Schweinitz stand Mr. Andrew Carnegie and Dr. S. Weir Mitchell.

Original Communications.

SOME DIFFERENTIAL POINTS IN THE SKIN LESIONS OF PELLAGRA.

*Report of a Case with Removal of Symptoms.**BY ISADORE DYER, Ph. B., M. D.,
New Orleans, La.

Professor of Diseases of the Skin, Medical Department, Tulane University of Louisiana.

There should be some clear definition of the symptomatology of the cutaneous evidences of pellagra, so that the diagnosis may be made by any observant physician. At present the varied reports of cases, many incomplete, lead to confusion in diagnosis and perhaps may mislead to the report of cases as pellagra which are something else.

When Dr. Searcy was studying his pellagra cases at Mt. Vernon Asylum in Alabama, he came to New Orleans and showed me photographs and specimens which I could not recognize as fulfilling the essentials for a diagnosis of classic pellagra. The mass of this cases have, however, since then established the correctness and value of his observations.

Since the agitation of the pellagra question in the South I have seen several cases which might have been mistaken for pellagra and most of these went on to fatal terminations. Altogether I have had the opportunity of studying six cases of pellagra, two in my own practice. I have had two other cases of undoubted pellagra under my advice—one in Mississippi and one in Louisiana. In no two of these six cases were the skin evidences just alike, yet all were cases of comparatively recent development and all in their first attack.

The cases seen by me had certain points in common, but were sufficiently dissimilar to suggest the probability that the skin evidences of pellagra are more apt to be the direct reflections of the associated ætiological factors than a separate, integral symptom, and that the severity and the type of the lesions are significantly proportionate to general systemic involvement. I have some photographs sent me by Dr. J. D. Donald, of Hattiesburg, Mississippi, taken of the hand of a case of undoubted pellagra. His patient died after an attack of a few weeks' duration, but fulminating eruptions and disturbances of all membranes had developed, especially of the mucous membranes of mouth, genitals, and adjacent organs. The photographs are excellent delineations of pellagra—*when you know that they were taken of a pellagrin's hand*. They would as readily be taken for photographs of a case of blastomycosis, the papillary character of most of the eruption being quite apparent. Yet the beginning and the course of this eruption on the hands was as typical as it could be in a classic case of pellagra.

My first patient (Case III, *infra*) with pellagra presented an entirely different eruption. The hands were affected on the dorsal surfaces, particularly associated with the orifices of the hair follicles; the joint areas were softer and less involved. While the entire dorsal surfaces of the hands were covered, the areas between the joints were especially thick and rough, made up of closely aggregated papules,

pinhead sized, uniform, and so rough as to be almost spinous to the sense of touch. This eruption of the hands extended in long triangles up the extensor surfaces of the forearms and the lower third of the arm, the base of the triangle being at the wrists and the apex just above the olecranon process. At no point after leaving the wrist was the triangle wider than two inches and the tapering was almost geometrical in contour.

The coloring in the eruption was peculiar—the yellow tan color of bran. A like eruption was on the legs, but here the worst eruption was just below the knee, tapering in a triangular form to the ankles, where it stopped. This case had typical "rough skin" with fine scales on the surface. Except for the configuration, the absence of itching, and the associated symptoms, a diagnosis of pityriasis rubra pilaris would have been more than probable. When first seen this patient had a severe stomatitis, anorexia, diarrhoea (with, frequently, bloody stools), the genitalia were engorged, raw, excoriated, painful, and the menstrual periods had been attended with unusual dearth of flow. Hebetude, emaciation, and insomnia nights were marked symptoms.

My second patient (Case IV, *infra*) was a man of forty-nine years of age, giving the history of a laparotomy for appendicitis some six weeks before the eruption appeared on his hands. He had no eruption or other symptom save that which was present on his hands.

This showed as a bilateral and symmetrical eruption covering the dorsal surfaces of the hands, even to the edges of the finger nails. The eruption extended up on the wrists and encircled the wrists. The eruption on the wrists was margined by a waving band of infiltration, smooth, elevated, dull red in color, and at the border considerably lighter than the rest of the affected area on the wrists. All of the eruption on the wrists was swollen but unbroken. On the backs of the hands, however, and on the fingers, even along the linear aspects of these, there were many small vesicles, so superficial as to break easily and in places had already crusted. Where the crusts had dried some time, the areas of the eruption presented distinct papillomatous elevations closely packed, rough on top, scaling, and a deep yellow in color. At no time, so the patient stated, had the vesicles been large.

This case presents the picture of a classic pellagrous skin on the hands. It is easily distinguished from vesicular eczema by the persistence of the vesicles, the development of papillary areas, and by the marginate, erythematous, *elevated and infiltrated border*, all of the latter evidences testifying to a deep seated affection, beginning deep and not a mere catarrhal process started in the mucous layer.

Now, each of these three cases present types of pellagra with resemblances to other affections. Each began with an erythematous process, at one stage having nothing especial to distinguish it from an erythema of ordinary type and of simple origin.

As the group of erythema multiforme has been studied its variants have increased considerably, including many diseases of the skin of exudative origin and due to as many different causes. We find the erythema of caloric type, caused by too much heat, cold, or sunshine when too direct, exactly simi-

*Read before the National Conference on Pellagra, Columbia, S. C., November 3 and 4, 1909.
†Report of Dr. Donald's case related in Case II.

lar erythemas starting from the ingestion of certain drugs, or even certain foods.

Reflex conditions in the habit of the individual may bring on simple or grave exudative erythemas, the borderline between these and destructive neuroses being hard to define at times. Toxines from food and even the injection of sera or vaccines in susceptible individuals may profoundly affect the skin, even causing areas of hemorrhage and of destructive sloughings, if the hemorrhage is diffuse.

As the degree of this or these antagonistic substances may affect the individual, so the results may appear, locally or generally, involving the skin more or less profoundly at the same time.

This idea alone can satisfy my own unrest at the varieties of pellagra which are being described. So many of Searcy's cases were bullous in type. The beautiful illustration which accompanies the pellagra article by Rist in the *Pratique dermatologique*, (Vol. III), pictures a dermatitis of foliaceous form, with vesicles undeveloped. Others frame a description of hands which are keratosed and fissured.

With each of these forms, however, there are related enough concomitant symptoms to fix the diagnosis of pellagra. I believe it is wrong, then, to state that the erythema is the characteristic symptom of the disease and particularly when, as in some instances, the erythema has given place to hyperplastic changes in the skin.

The symptom complex in pellagra should be arrived at by associated evidences, if possible.

Just as I am satisfied that I might have to prove the diagnosis of any one of my cases, just so I am certain that there may be cases arising during the present campaign against the disease in which I might have the right and reason to question the diagnosis. Most other diseases of the skin have more exact characteristics, for the reason that they are usually more specific in their ætiology and pathology, and the variant in symptoms of local nature is not as elastic, or irregular, as it would appear to be in pellagra.

I now wish to report briefly the few cases which have come under my care either directly or indirectly, in order that they may be made of record and that a further memorandum may be made of the treatment followed, as this seems to differ somewhat from accepted methods.

CASE I.—Miss S., Alabama. First seen June 23, 1908. Patient related that the condition had appeared early in March, the first symptom being a sore mouth, as she expressed it, "like salivation." The eruption on the hands appeared on the 3rd of May, now limited only to the hands, forearms, and neck. The type of eruption was distinctly erythematous without scaling, a dull brickdust red in color, having the appearance of sunburn. Eruption was bilateral and symmetrical on the extensors of both forearms, the backs of the hands, and on both sides of the neck. The patient related that she had gripe in February and had not been well since.

The following blood examination was made which seems to bear very little on the case: 4,540,000 red blood cells to c.mm.; 4,120 leucocytes to the c.mm.; no plasmodia malarie found.

The patient was not seen again, but the physician referring her to me wrote subsequently that she had entirely recovered, the eruption having then disappeared under the treatment advised, which consisted in regular doses of quinine sulphate, three times a day, two grains at a dose, and sodium salicylate at the same dosage.

CASE II (Dr. Donald's case).—I wish to quote Dr. Donald's description of this case as given in his letter to me

for the chief reason that no alteration of his narrative of the case could in any way increase the value of his observations so excellently given:

"The case as I know it presents the following history, viz.: Female; age, thirty-four; married; mother of one child, eleven years old. Had had laceration of cervix and pelvis, and had had several operations for their repair; had never been very well since the child was born. First seen by me about five weeks since (April 1, 1909). At that time complained principally of a rundown feeling, loss of appetite, and general weakness; no special pain. Rather thin, pale, and cachectic look; tongue slick, divested of epithelium, and red. Complained of general burning in stomach and bowels. Uterus enlarged, soft, and bled on slight manipulation. Patient was put on tonic treatment but continued to decline for three weeks. Burning grew worse about this time; dark red erythematous spots appeared on back of hands, across the metacarpophalangeal joints and spread rapidly over entire dorsal surface of hands; was very annoying, burning, and painful. Spread to anterior surface of wrists, one week later began to desiccate and desquamate. The latter is now very marked and extensive; line of demarcation from sound tissue very marked. Tongue and buccal mucous membrane at this time very much inflamed and covered with small ulcers very thickly. Profuse salivation, constant nausea; no diarrhoea, but constant irritation and burning about anus and vulva. Temperature within the last ten days varied from 99.5° in the forenoon to 102° F. in the afternoon. No mental symptoms thus far, but physical prostration very marked.

Treatment at first was Goodell's chlorides, then $\frac{1}{4}$ grain doses of silver nitrate before meals with bismuth lactate and maltopepsine after meals. Now $\frac{1}{4}$ drop doses of carbolic acid with 1 oz. doses Phillips's milk of magnesia; soothing applications to hands; 1/150 grain doses of atropine sulphate for salivation; all of which has done absolutely no good.

"I find that the husband suffered from a similar trouble for three years, but of a much milder type. He has now been well for about eighteen months, with the exception that his mind is not near so active as formerly.

"My diagnosis is pellagra; any light you may give me will be very much appreciated. Have had the hands photographed and will send you a copy if you wish.

"Trusting to hear from you at once,

"Yours most respectfully,

(Signed) J. D. DONALD."

N. B.—(I suggested the administration of quinine in large doses, but the suggestion came too late, as the subsequent details will show.—DYER.)

April 27, 1909.

"In enclose herewith photographs of hands as promised; should have preferred to have had them colored, but could not get it properly done. My patient continued to go to the bad rapidly; the desquamation of hands was complete, extending into the palms; the eruption around anus and vulva, extensive and destructive; the eruption well into the vagina. Delirium set in four days since, rapidly increasing until this morning at 5:30 o'clock, when death closed the scene.

"Nothing ever seemed to benefit her in the least; on the other hand, actually all medicine seemed to aggravate the disease.

"I trust I shall not again meet with a similar case. I thank you very much for your letter and the interest you manifested in the case. I feel that I would not fully have discharged my duty to the profession nor to humanity if I should not publish the case."

CASE III.—Mrs. T.; Louisiana. First seen June 17, 1909. Age, twenty-five. Two months ago eruption began on hands, two months after childbirth. Eruption began with "chapping of both hands"; now involving both hands, forearms, as well as the mucous membranes of mouth, throat, genitals; the bladder was as well affected. Nausea constantly present without reference to ingestion of food.

Examination of the patient showed her to be emaciated, depressed, apathetic, and indifferent to most everything about her. No specific nervous symptom.

She was promptly placed on large doses of quinine (ten grains, twice a day) for seven days, which was administered in the form of the hydrobromate, as patient expressed a fear of idiosyncrasy with the drug. In addition to the quinine the following prescription was given after meals:

- B. Solution of sodium arsenate.....2 drops;
Tincture of nux vomica.....10 drops;
Elixir of lactated pepsin.....3j.

M.

For the first two weeks of treatment the patient improved very little; strychnine had to be administered from time to time, and her dietary had to be reduced to liquid food. The eruption on the hands and arms, and that on the legs (described in main text of this paper) materially improved, losing its inflammatory character and drying to the appearance of sand paper on the skin. The mucous membranes of the mouth and genitals, however, kept raw and seemed to refuse to heal under any treatment at first. Daily starch baths with permanganate mouth wash and douches finally proved effective, and at the end of about three weeks the general symptoms improved and the patient was convalescent.

When last seen, the first week in October, the patient had no evidences of the disease whatsoever; had grown stout, her appetite had returned, and she expressed herself as feeling free of any distressing symptom of any sort. On October 26th a report from the home of the patient stated that she was "still improving; no new symptoms."

The treatment with quinine was maintained throughout in this patient and stopped only on her visit to me in October, and the following prescription ordered to be taken for six or eight weeks without interruption:

- B. Solution of sodium arsenate.....5iv;
Tincture of nux vomica.....3j;
Tincture of cinchona.....5vi;
Simple elixir.....q. s. ad.3xij.

M. et Sig.: Teaspoonful after meals in water.

CASE IV.—Mrs. McK., Mississippi; age, 42. This patient was seen by my associate, Dr. Henry E. Menage, on September 25, 1909. He reported the case as typical of classic pellagra with a history of one and a half months' duration for the eruption. Patient, however, had shown progressing debility for four months, with bad memory. The eruption was described as xerodermic and occurring on the hands, forearms, and over the olecranon; some on the ears. A blood examination was made by Dr. C. C. Bass, which is interesting as showing a positive Wassermann, as follows: Haemoglobin, forty-six per cent.; red cells, 3,135,000; leucocytes, 8,700; small mononuclears, nineteen per cent.; large mononuclears, three per cent.; polymorphonuclears, seventy-eight per cent. Wassermann's reaction positive with both lecithin and liver extract as antigen.

This patient was treated with atoxyl, but this was discontinued and the quinine and arsenic, nux vomica, etc., was given instead. Irregular reports were received from the patient, but stating that her condition had improved.

CASE V.—Mr. B.; Mississippi. First seen October 7, 1909. History of recovery from laparotomy for appendicitis six weeks ago. Eruption present not over three weeks; began with redness and swelling. Patient not restricted in dietary since discharged after operation; did not eat corn products habitually. General and family history good. Married, with children. General appearance good; complexion clear; no sign of emaciation; no nervous symptoms whatever, and had none. Above average intelligence. Clearly understood the seriousness of his condition.

The eruption on both hands covered the dorsal surfaces of fingers, body of hand, and also whole of the wrists; the latter were encircled by the eruption which here appeared as an infiltrated erythema, deep dull red in color with a yellow tinge. The borders of the erythema were very much elevated above the level of the rest of the eruption. No break in the skin on the wrists. A marked high grade inflammation was in process on the hands and fingers. Vesicles plentiful and close together, especially broken in the centre of the hand with weeping. The vesicles over the fingers seem to be most recent and here they were most numerous. The part of the hands next to the wrist was covered with marked keratinization associated with papillary growths. Some scaling. The whole area of the eruption was characterized by the yellow pigmentation and both hands were considerably swollen. Not much pain nor much itching; generally uncomfortable.

Treatment was begun at once with instructions to the patient to take quinine hydrobromate in ten grain doses twice a day for three days; then five grain doses three

times a day for three days; then five grain doses twice a day for a week. In addition, the patient was given a prescription calling for the following:

- B. Solution of sodium arsenate.....3iiss;
Tincture of nux vomica.....5j;
Tincture of cinchona.....5ij;
Elixir of calisaya.....q. s. ad. 5vj.

M. A local application of a protective ointment was ordered.

Under date of October 21st, the patient for the first time wrote that the eruption had dried and except for the harshness and thickened skin and the yellow color he would think that he was nearly well.

In addition to medication this patient was instructed to add to his ordinary diet the juice of one or two oranges, or one or two lemons each day. He was ordered to eliminate corn products and to add to his dietary or to increase the amount of rice and lentils.

Patient was seen October 27th and presented a good general appearance. The eruption had entirely dried, leaving keratinized areas over dorsal surface of fingers, backs of hands, and wrists being simply reddened, but without any lesions. Quinine continued in 2 grain doses twice a day, and the arsenic compound also continued.

This case is one of the six referred to in which the treatment has not been conducted long enough to know what the result will be, but the improvement under the quinine was sufficiently rapid to argue that it is a therapeutic agent of material value in the treatment of these cases.

OBSERVATIONS ON THE TREATMENT OF PELLAGRA.

Since the first patient with pellagra came under my care I have realized that the treatment has been purely speculative and that whatever good results have been obtained have only arrived from treatment aimed at a correction of the status of the circulating blood in the victim of the disease. No great stress has been laid by anyone using arsenical preparations in asserting that these had any reactionary effect on the nervous system or that this was the object. More recent laboratory experiments with derived sera have all pointed to the need of antagonistic principles in the blood and not through the nervous system.

My own limited experience with the disease has emphasized the one point that so long as the originating cause of pellagra is unknown we may speculate as to the factor producing it, but the fact remains that it presents many symptoms which argue a disease due to a toxic substance and symptoms which are like those found in other diseases in which the cause is known.

For years I have treated all types of toxic erythema where the specific cause was not determined with quinine and salicylic acid salts. The success arrived at made me give quinine in the first case and I have continued to use this as the mainstay in each case of pellagra that I have had to treat, or for which I have advised treatment. In each case the symptoms were promptly controlled with quinine (given usually as the hydrobromate) in good sized doses and by keeping up the quinine continuously. In two cases the symptoms have disappeared entirely. In the last two cases the treatment has not been followed long enough to establish a definite report, but each case has improved enough to make the prognosis favorable.

I have no argument to make for quinine as I have used it with empiric judgment and have continued its use because the results have been good—so far.

124 BARONNE STREET.

COMPLEMENT FIXATION WITH LECITHIN AS
ANTIGEN IN PELLAGRA.*

Further Observations.

By C. C. Bass, M. D.,
New Orleans.

In a preliminary note published in the *Journal of the American Medical Association*, October 9, 1909, I reported a positive complement fixation reaction with lecithin as antigen in six consecutive cases of pellagra. One of these patients has since been found to have had syphilis and would probably have given a positive reaction from this cause. Another one of the tests was made on blood taken at autopsy twenty-four hours after death, and is therefore not to be credited fully. There remained, however, four cases that gave a positive reaction without any apparent cause except the presence of pellagra. Since that publication I have tested the blood of ten other cases of pellagra for this reaction, and wish to report them here. In these ten cases, six were positive and four were negative. Of the six positive cases one was known to have had syphilis and would probably have given a positive reaction without the presence of pellagra. In the tabulation below it will be convenient to include the former six cases.

Case No.	Type of disease	Reaction
IV	Chronic case of four years' duration; severe acute attack; insanity and death	Positive
V	Mild acute case; first year; patient improved	Positive
VI	Severe acute case; death; patient had had syphilis	Positive
VII	Severe acute case; death; blood taken twenty-four hours after death	Positive
VIII	Mild chronic case, severe skin lesions; patient improved	Positive
XI	Moderately severe case; also had tubercle bacilli, which contributed to patient's death	Positive
XII	Severe first attack; death in one month	Negative
XIII	Severe case; diarrhoea one and one half years; erythema ten days	Negative
XIV	Severe case; diarrhoea and vaginitis two years; erythema two months; patient had had syphilis	Positive
XVII	Mild chronic case; patient improving	Positive
XX	Very severe case; death	Positive
XXI	Mild case; first (?) year	Positive
XXII	Moderately severe, acute attack; three or four summers erythema; three months emaciation; diarrhoea and indigestion twenty-seven years	Positive
XXIII	Mild chronic case; also had aëstivoautumnal plasmodia in blood; great anemia	Positive
XXIV	Three years' diarrhoea; severe mental symptoms now; erythema pretty well cleared up	Negative
XXV	Severe case, diagnosed by Dr. Lavinder	Negative

Technique.—It will not be necessary to describe the technique in detail, as it is the Wassermann serum reaction for syphilis, with slight modifications to suit my own convenience, and substituting as antigen lecithin for syphilitic liver extract. The hæmolytic system used was sheep blood corpuscles, guinea pig complement, and sensitive rabbit serum amboceptor. The hæmolytic unit used in all tests was 0.05 c.c. of sheep corpuscles. The lecithin solution used for antigen was a 0.3 per cent. solution in equal parts absolute alcohol and salt solution. One tenth c.c. of this per hæmolytic unit was the quantity used. One tenth c.c. patients' serum per hæmolytic unit must bind the unit of complement or the test is considered negative. All except five of the tests here tabulated were made with inactivated serum. All the tests were controlled by running through at the same time a normal negative serum and also a reacting syphilis blood exactly as is usually done in making Wassermann's reaction for syphilis.

An analysis of the sixteen cases shows that two patients have had syphilis, one was done on old autopsy blood, and another patient had aëstivoautumnal plasmodia in the blood when the test was made. Excluding these possible sources of error, we still have eight out of twelve cases giving a positive reaction. Of these eight positive cases seven were of the mild or chronic type and only one was of the severe acute type. Of the four negative cases all patients had severe acute attacks and two had their first attacks. Two of these are alive, but do not promise to recover from the present attack. The reaction seems more likely to be present in chronic mild cases and those showing some resistance to the disease which is in keeping with the fact that the complement fixation reaction is due to the presence of antibodies for lipid substances.

The observations here reported are on far too few cases on which to base any conclusion. They should be confirmed by study of a much larger number of cases by competent observers before they may be of actual value.

The complement fixation reaction with lipid substances as antigen has been found in syphilis especially, but also in trypanosomiasis, sleeping sickness, kala azar, certain cases of malaria, a few cases of scarlet fever, and probably other diseases. All of these, except possibly scarlet fever, are protozoan diseases. The reaction has not been found in bacterial diseases except in rare instances.

At the suggestion of Dr. Dock the strength of the reaction was determined in three positive cases. One tenth c.c. serum in one case fixed two units of complement; another fixed four units; and one, a case of two years' duration, fixed twenty units of complement.

I am indebted to the Charity Hospital staff and to many physicians of New Orleans and vicinity for courtesies shown.

741 CARONDELET STREET.

THE TREATMENT OF GASTRIC ULCER.

By MAX EINHORN, M. D.,
New York.

Professor of Internal Medicine at the New York Postgraduate Medical School.

Before beginning the treatment of a possible ulcer of the stomach, the diagnosis must be established as firmly as possible. The results of treatment are often dependent upon the kind of cases that are considered ulcer of the stomach. For this reason statistics on recovery of this malady are difficult to compare.

The treatment itself, according to the variety and seat of the ulcer, is first medical, secondly surgical.

I. Medical Treatment. Most cases of ulcer of the stomach are amenable to medical treatment. The most essential part of the treatment is rest. The classical treatment of Curveilhier, with milk, which was later adopted and modified by von Leube and Ziemssen is still largely employed. In 1894¹ I changed this treatment slightly. It has been used extensively by myself and others and is as follows:²

¹Max Einhorn, "The Treatment of Gastric Ulcer," *The Post-graduate*, October, 1894.

²Max Einhorn, *Diseases of the Stomach*, New York, 1896, p. 221.

*Read at the Second International Congress on Pellagra, held at Columbia University, New York, 1909.

Outline of Diet in Gastric Ulcer.

First three days.

	Number of Calories.
7 a. m.: Milk, 150 c.c. (5 ounces).....	101
8 a. m.: Milk, 150 c.c.	101
9 a. m.: Milk, 150 c.c.	101
10 a. m.: Milk and strained barley water, 150 c.c.	80
11 a. m.: Milk, 150 c.c.	101
12 a. m.: Milk, 150 c.c.	101
1 p. m.: Bouillon either alone or with the addition of one or two teaspoonfuls of a peptone preparation, 150 c.c.	30
2 p. m.: Milk, 150 c.c.	101
3 p. m.: Milk, 150 c.c.	101
4 p. m.: Milk, 150 c.c.	101
5 p. m.: Milk with strained barley or oatmeal, 150 c.c.	80
6, 7, 8, 9 p. m.: Milk, 150 c.c.	404

1402

Fourth to the tenth day.

7 a. m.: Milk, 300 c.c.	202
9 a. m.: Milk, 300 c.c.	202
11 a. m.: Milk with barley rice or oatmeal water, 300 c.c.	160
1 p. m.: One cup of bouillon, 200 c.c., and one egg beaten up in it	85
3 p. m.: Milk, 300 c.c.	202
5 p. m.: Milk, 300 c.c.	202
7 p. m.: Milk with barley water, 300 c.c.	160
9 p. m.: Milk, 300 c.c.	202

1410

Eleventh to the fourteenth day.

7 a. m.: Milk, 300 c.c.	202
9 a. m.: Milk, 300 c.c.	202
and two crackers softened (one ounce).....	100
11 a. m.: Milk with barley water, 300 c.c.	160
1 p. m.: One cup of bouillon, 200 c.c., one egg, and two crackers	180
3 p. m.: Milk, 300 c.c., and one egg.....	282
5 p. m.: Milk, 300 c.c.,	202
and two crackers	100
7 p. m.: Milk with barley water.....	160
9 p. m.: Milk, 300 c.c.	202

1790

Fourteenth to the seventeenth day.

7 a. m.: Milk, 300 c.c.	202
9 a. m.: Milk, 300 c.c.	202
and two crackers	100
11 a. m.: Milk with barley, 300 c.c.	342
1 p. m.: Scraped meat, 50 grammes.....	60
Two crackers, one cup of bouillon, 200 c.c.	100
3 p. m.: Milk, 300 c.c.	202
5 p. m.: Milk, 300 c.c.,	202
One egg (soft boiled).....	80
Two crackers	100
7 p. m.: Milk with farina, 300 c.c.	342
9 p. m.: Milk, 300 c.c.	202

2154

Seventeenth to twenty-fourth day.

7 a. m.: Two eggs (soft boiled).....	160
Butter, 10 grammes	81
Toasted bread, 50 grammes	130
Milk, 300 c.c.	202
10 a. m.: Milk, 300 c.c.	202
Crackers, 50 grammes	100
Butter, 20 grammes	102
1 p. m.: Lamb chops (broiled) 50 grammes.....	60
Mashed potatoes, 50 grammes.....	44
Toasted bread, 50 grammes.....	130
Butter, 10 grammes, one cup of bouillon, 200 c.c.	81
4 p. m.: The same as at 10 a. m.	530
6:30 p. m.: Milk with farina, 300 c.c.	342
Crackers, 50 grammes	106
Butter, 20 grammes	102
9 p. m.: Milk, 300 c.c.	202

2820

This diet has the advantage that from the tenth day on sufficient nourishment is given. Since about

six years I have used the same diet as described with the addition of raw eggs from the beginning.

I usually give from the very first day raw eggs in milk or in bouillon. On the first day two eggs, then increasing one egg a day until eight eggs daily are consumed. In this way the caloric food value is increased, and we can easily make the patients gain weight if desired. After two weeks of treatment meat, soft boiled eggs, farina, and zwieback are also given. Seventen days after treatment the patients are living on a mixed diet which very closely resembles their usual mode of life. The results attained with this treatment have been very good.

In hæmorrhages or in cases in which the d'etetic treatment just described remains unsuccessful, rectal feeding is resorted to for from three to five days and oral feeding discontinued, except for a little gelatin or small pieces of ice. After this short period of abstinence the usual ulcer diet is given, allowing only small quantities for the first three days and then the regular diet as described. As is evident a mixed diet is usually reached after three weeks and in hæmorrhages in about four weeks.

I would like to refer here in a few words to the Lehnartz treatment of gastric ulcer which was first published by his assistant, Wagner.³ The method is distinguished from the usual dietetic treatment in that even in hæmorrhage food is given at once and that meat is added very quickly. Lehnartz's directions, as given by Wagner, are as follows: "On the day of the hæmorrhage the patients receive daily from 200 to 300 c.c. iced milk in spoonful doses and from one to three fresh eggs, beaten, in addition bismuth is given from two to three times daily. The quantity of milk is increased by 100 c.c. daily and by one egg, so that at the end of the first week about 800 c.c. of milk and from six to eight eggs are taken daily. Six days after the hæmorrhage finely scraped raw beef is given, for a day or two, thirty-five grammes in small portions mixed with egg, later seventy grammes and more, in gradually increasing quantities. After fourteen days rice and farina gruels and soft zwieback; after from three to four weeks a plentiful mixed diet." Wagner then describes sixty cases treated by the Lehnartz method.

Wirsing⁴ also has tried the Lehnartz method and expresses himself as follows: "The final result of our experience with the Lehnartz treatment in gastric ulcer shows therefore a visible superiority of the Ziemssen-Leube régime in nonbleeding ulcers, whereas in fresh hæmorrhages Lehnartz's method was more lasting in its success. A conclusive judgment can only be passed on the basis of a larger number of cases and their prolonged observation."

In this country Lambert⁵ has been an ardent advocate of the Lehnartz treatment. Lambert treated eight cases according to this method and is well satisfied with the result. He expresses himself as follows: "This series does warrant the conclusion that the original claims of Lehnartz are correct: First, that the cure is at least equally as efficient as the older method, and that it does not deplete the

*Max Wagner, *Zur Behandlung des Magengeschwürs*, *Medizinische Wochenschrift*, 1904, p. 3.

³Edw. Wirsing, *Zur Diagnose und Behandlung des Magengeschwürs*, *Archiv für Verdauungskrankheiten*, 1905, p. 197.

⁵S. Lambert, *The Lehnartz Treatment of Gastric Ulcer*, *American Journal of the Medical Sciences*, 1908, p. 18.

patient; second, that the cure is more rapid as well as more certain; third, that the vomiting and bleeding stop more quickly and recur less frequently than in the Leube cure; fourth, that the pain ceases promptly and that morphine is never needed; fifth, that the food supply is sufficient throughout; sixth, that it is possible to treat the anemia earlier with iron and arsenic than in the Leube cure; and seventh, that it is possible to return to a full diet and to the patient's usual occupation earlier than in the older cure."

In a recent number of the *Deutsche medizinische Wochenschrift* von Leube,* the most eminent modern clinician, summarizes his experience with the treatment of gastric ulcer as follows: "1. My method of treating nonbleeding gastric ulcers furnishes such incontrovertibly excellent results (in 547 cases, 90 per cent. cures, three quarters of them well in from four to five weeks, no death) that I do not see the slightest reason to deviate from its fundamental principles and that I must still recommend it in preference to any other method. 2. In bleeding ulcers of the stomach my method shows also very good results (ninety per cent. of cures, of which at least two thirds in five weeks, 2.5 per cent. deaths). The successful results obtained by the Lehnartz method have shown that the diet may be more liberal without risking a new hæmorrhage. Although I concede that individualization in the diet in some gastric ulcers is not only permitted but under certain conditions even indicated, yet I think it would be wrong to digress too much from my diet which has stood the test of experiment and practice. On the contrary, it ought to form the base for our therapeutic efforts, so as to prevent our falling into a direful state of vacillation in our dietetic orders for stomach patients, especially those afflicted with gastric ulcer, to the detriment of these patients. 3. In the first day after the occurrence of the hæmorrhage in ulcer complete abstinence from food on the part of the stomach until the cessation of bleeding is a procedure indicated not only by caution but by the reasons given above."

I readily agree with this view of von Leube and believe that most clinicians take the same standpoint. As can be inferred from the plentiful literature on the Lehnartz method, we do not always have to adhere strictly to the abstinence cure even in hæmorrhage, but can safely give some food in suitable cases. Usually nutrition is not so low, that the small quantities of food given by Lehnartz immediately after hæmorrhage and which by most clinicians are given rectally, make much difference. In nonbleeding ulcers I consider the usual Leube diet or the one modified by myself as more suitable. Meat, which plays so important a rôle in the Lehnartz diet, is, in my opinion, for the first period of treatment not as suitable as the other varieties of albumin. Meat, as is well known, is a strong stimulant of gastric secretion and it takes some time before it is liquefied by the gastric juice—usually this does not take place in the stomach, the meat passing out of the pylorus in a swollen state. Since in the first time of treatment rest is all important for obtaining a cure, meat

will not answer this requirement. Another point mentioned by Lehnartz and his pupils that with the usual milk diet the amount of fluids is too large and causes a dilatation of the stomach, I do not think justified, as with a careful use of the diet I have never seen any bad consequences.

We will now consider the medicinal treatment. Since 1894 I have used in most cases of gastric ulcer either with or without hæmorrhage large doses of bismuth. I usually give 2 grammes of bismuth subnitrate, either alone or with magnesia usta, from 0.2 to 0.8 gramme, varying the dose of the latter until one stool daily results. This powder is given three times daily, one half hour before meals in a wineglassful of water. Only occasionally have I used silver nitrate and seen good results. In hæmorrhage I give adrenalin (1 in 1,000) from five to fifteen drops by mouth, and calcium lactate, from 1 to 2 grammes, twice daily in 150 c.c. of water by rectum. Occasionally I use small quantities of codeine or atropine when pains are severe. In most cases, however, these analgetic drugs are not needed. Warm applications (linseed) in the ordinary ulcer and in the bleeding ulcer an ice bag are also used. From olive oil I have not seen any striking results.

II. Surgical Treatment. The indications for any surgical treatment of gastric ulcer can be briefly summarized as follows:

1. In large, recurrent gastric hæmorrhages threatening life, the ulcer ought to be excised in the interval or a gastroenterostomy established, to prevent renewed hæmorrhage.
2. Small losses of blood that cannot be checked and endanger life through their persistence require similar treatment.
3. Perforation of the ulcer demands always immediate operation (excision or invagination of the defect and suture) as soon as the diagnosis has been made.
4. An ulcer situated at the pylorus and attended with peristaltic restlessness of the stomach and continuous hypersecretion, and
5. Advanced stenosis of the pylorus require gastroenterostomy.
6. Duodenal ulcers accompanied by pylorospasm and beginning peristaltic restlessness of the stomach, also,
7. Gastric ulcers with formation of a tumor no matter where the seat (pylorus, small curvature, etc.) always demand gastroenterostomy, usually with excision of the tumor. If this tumor is situated in the lesser curvature and cannot be resected, it is still curable in case it is caused by simple connective tissue proliferation (callous ulcer formation).

I agree with Clairmont† when he says: "The value of gastroenterostomy in gastric ulcer is dependent on its situation. The nearer the ulcer is to the duodenum the better the prognosis. An ulcer at or near the pylorus will be favorably influenced by gastroenterostomy in sixty-two per cent., at a distance from the pylorus in forty-seven per cent., in the duodenum in seventy-three per cent."

If we follow strict indications in operations for ulcer of the stomach, they are usually attended with favorable results and benefit for the future of the patient.

20 EAST SIXTY-THIRD STREET.

Paul Clairmont. Zur chirurgischen Therapie des Ulcus ventriculi. Mittheilungen aus dem Grenzgebiete der Medizin und Chirurgie, 22. Heft 2.

*Vergleichen Sie auch die Behauptung des Herrn Leube, dass die Ernährung bei Ulcus ventriculi durch die Ernährung durch die Magenschleimhäute, 1909, 34.

AN OUTLINE FOR A COORDINATED ATTACK UPON TUBERCULOSIS

By the City of Syracuse and the County of Onondaga.

BY LAWRASON BROWN, M. D.,
Saranac Lake, N. Y.,

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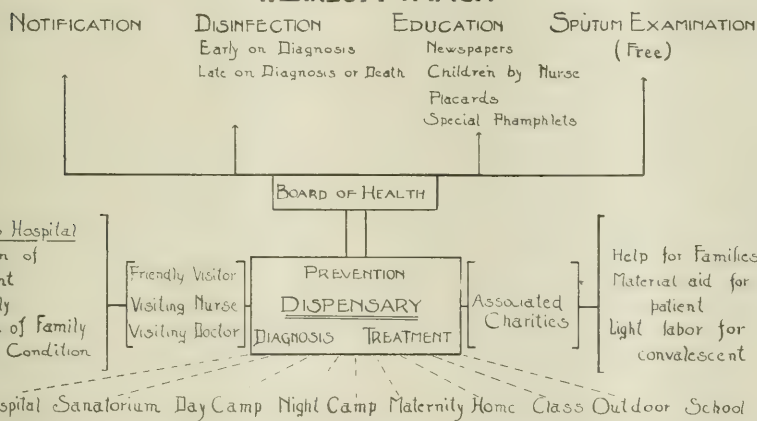
THE PROPHYLACTIC VALUE OF THE SANATORIUM.

Several years ago I had the pleasure of addressing the Syracuse Academy of Medicine upon the Sanatorium Treatment of Pulmonary Tuberculosis. Some of you may recall that in that address I endeavored to impress upon you the great, the paramount importance of the early diagnosis of tuber-

far advanced, are alive. In other words, a patient in an incipient stage has at least twenty-six times as good a chance of permanent recovery as one in the far advanced stage. In view of the fact that tuberculosis is now said to be so curable that all a patient needs is fresh air (some would deny any tempering of the cold to the shorn lambs), a chair, and some milk and eggs, in view of this, these figures are of importance. Not every patient with tuberculosis will recover, no matter how early his case is diagnosticated, and no matter how soon put under the most approved treatment. But do not forget that an early case has twenty-six times better chances for permanent recovery than a late one. Cold, impartial figures such as I believe these are,

PREVENTION OF TUBERCULOSIS IN A MUNICIPALITY

A. DIRECT ATTACK



B. INDIRECT ATTACK

Through

- 1 Babies Dispensaries (Milk Depots)
- 2 Fresh Air Farms
- 3 Playgrounds
- 4 School Gardens
- 5 Parks
- 6 Public Baths

- 7 Instruction of School Girls and their Mothers in regard to
 - (a) How to Cook
 - (b) What Food to Buy
- 8 Sanitary Conditions in
 - (a) Jails
 - (b) Station Houses

Etc. Etc. Etc.,

culosis. I tried then to emphasize the fact that the curability of tuberculosis was directly proportional to the stage in which it was diagnosticated and treated. Our results at the Adirondack Cottage Sanitarium show that up to last November (1908), when the records covering twenty-two years are roughly scanned, fifty-two per cent. of the patients in an incipient stage, twenty-five per cent. of the moderately advanced, and less than two per cent. of the

*Read before the Syracuse Academy of Medicine, October, 1909.

bring us face to face with the fact that at least one half of tuberculous patients, including all stages, die from tuberculosis. These figures, too, represent specially selected and carefully treated patients. The mortality among the patients at an ordinary city dispensary must be much greater. I believe the time has come for us to take these disagreeable and unpleasant facts to heart but we must not keep them there, we must divulge them to an "over trusting" and a too optimistic public. The reason the public

is so difficult to arouse is due to the fact that they have been lulled into a feeling of security, of safety, in regard to tuberculosis that is entirely false. They will soon begin to treat it with the same indifference that they pay to some sexual diseases, which many now affirm are no worse than a "cold."

Again, supposing that the special institutions for the treatment of tuberculosis accomplished all that could be asked of them, how many of these patients could they treat? Without giving you tiresome statistics, it suffices to say that the number of beds in all such institutions is so small that even with vastly greater success than they can ever hope to achieve, the result upon the morbidity, the incidence of tuberculosis, would be hardly appreciable. Consequently we must map out another plan of campaign, for the sanatorium alone has been clearly shown to be inefficient in the eradication of tuberculosis. I do not mean to say that the sanatorium will not continue to play an important part in the struggle, but it will no longer play the leading rôle, as it has done in the past. It will long remain the best possible method of treating tuberculosis, the place where the best results are obtained with the least expenditure of energy. It will always remain a rational school of sanitation, where precepts are taught, not by word of mouth but by example, and one example is worth a volume of precepts. Another function, and probably its most important function for the State or municipality, is to prevent the closed cases, i. e., those without tubercle bacilli in the sputum, from becoming open cases, which are the chief source of danger in regard to infection. It is true that forty per cent. of all patients with tuberculosis in the sputum lose them during residence at the sanatorium, and furthermore, that all patients are taught how to treat the sputum both palpable and impalpable (i. e., sputum and spray emitted during coughing) so as to render it harmless to others, but we do not want our patients ever to have tubercle bacilli in the sputum if it is in our power to prevent it. In many cases it is and we are neglecting our duty both to our patient and to the State and city if we refuse to make a diagnosis until ulceration takes place and tubercle bacilli occur in the sputum.

THE DISPENSARY AND SOCIAL SERVICE.

If you will grant what I have said, and it is difficult to do otherwise, you will readily agree that the sanatorium is far removed from the firing line. It can admit only one patient in several hundreds, keep them only a limited time, and then they return for the greater part to the city. Here it is that the battle against tuberculosis must be waged. Another plan must be devised, which will ferret out the disease in its fastnesses, which will bring to light all of its strongholds, which so long have escaped detection. I am glad to be able to tell you that in Syracuse, as in many other cities, you have begun the campaign by establishing that most important of all institutions in this warfare, the dispensary. Its purpose is best described by the word *preventorium*, for its main object is to prevent the disease by combating it in a thousand of ways.

Some twenty-two years ago, a Scotchman in Edinburgh realized that tuberculosis was not like other diseases. It is true that it resembles leprosy

in many particulars, for example in its acid fast microorganism, its chronicity, and its contagiousness. Leprosy has disappeared from most civilized communities and is easily held in check and reduced by segregation or, in the case of intelligent patients, by proper care at home. This has been proved for segregation in Europe in general (France alone had 2,000 special asylums for lepers two or three hundred years ago) and for treatment at home in Sweden during the last decade. Such facts should greatly encourage us and should remove the groundless terror of leprosy, for it is probably no more contagious than tuberculosis.

Bearing these in mind, Dr. R. W. Philip, of Edinburgh, first conceived and first put into execution the dispensary idea, or the Edinburgh Antituberculosis Scheme, as he calls it. Many years after its success had been demonstrated, Dr. Calmette, of Lille, introduced the idea into France where it spread rapidly, being helped no doubt by the fact that the sanatorium plan was of German origin. The keystone of this plan lies in the fact that tuberculosis is treated not only medically but socially. This, as far as I know, was the first instance of a social service department in connection with a medical dispensary. No doubt your medical dispensaries in Syracuse all have social service bureaus connected with them. In this country we are greatly indebted to Dr. Richard C. Cabot, of Boston, who first applied this idea to other diseases than tuberculosis. The same idea prevails in all, viz., that it is futile to tell a patient to do what you know is impossible for him to do on account of his limited resources. Consequently, after a diagnosis of his medical condition, it is equally important for successful treatment to know his social condition. In no disease is this more important than in pulmonary tuberculosis. The details of the dispensary can be so much better demonstrated to you by Dr. Doust that I shall not consider it but shall attempt to show how it aids in reducing the mortality from pulmonary tuberculosis.

ETIOLOGY.

Allow me, however, first to recall briefly to your minds some points connected with the ætiology of tuberculosis. In the first place, tuberculosis is not caused by overwork, poor food, and foul air, for a man can live in these indefinitely provided he has never gotten tubercle bacilli into his body without contracting tuberculosis. The only cause, therefore, of tuberculosis, is the tubercle bacillus, a tiny, microscopic plant, so small that scores can ride upon the particles of dust we see dancing in the beam of sunlight in our room or office. It differs from ordinary plants in two very essential and most important particulars. So important are these two particulars that I beg of those of you who are not physicians to remember these two facts, though you forget all else I say. All ordinary plants, as you know, require sunlight (direct or diffuse) and fresh air. Now this tiny plant is quickly destroyed by either light or ventilation, or more rapidly and surely by both. Fresh air in a very dark place will kill the germ and direct sunlight destroys it in four or five hours. Diffuse sunlight will also kill the tubercle bacillus, though it requires three or four days to do so.

Again, tuberculosis is a house disease. I mean by

that that tuberculosis is contracted indoors and rarely, if ever, in the open air, where good ventilation and sunlight are always present. The crannies and nooks of the house, the carpets and rugs on the floor, and the lack of ventilation prevent sunlight and fresh air reaching the germ, which is thus enabled to live until the sputum dries, is ground up into dust and so using a daily dancing particle of dust as a deadly chariot, rushes into our bodies. Do not forget that germs can never leave a moist surface, hence the value of a moist cloth for dusting.

But how does the tubercle bacilli gain entrance into our homes? When a member of the family has pulmonary tuberculosis and is careless about his expectoration, soiling his moustache and beard, wiping them with his hand, occasionally depositing the sputum upon the floor near the cuspidor, or failing to cover his mouth with a cloth when coughing, using often his hand instead, which he may or may not wash before handling food or other objects, when such a patient is in the house the source of infection becomes obvious at once.

There is another possible source of infection that has not been discussed as fully as it should have been. I refer to the question of the servants who, coming, into our homes, care for our children, and serve our food. Recall for one moment the little stuffy, ill lighted, poorly ventilated "6 x 8" rooms allotted to the maids. They are as potent a factor in the spread of tuberculosis as anyone else and one often totally disregarded. The occasional visitor who suffers from tuberculosis and uses any precautions whatsoever, is in the house so short a time that unless grossly careless is a negligible factor in tuberculous infection. The thorough cleansing of the eating utensils renders them sterile.

To discover the source of infection in patients who have not been subjected to the foregoing risks is not always easy. It is now widely accepted that a tuberculous infection may lie dormant for years. Tonight, on returning from this meeting, we may soil our shoes or skirts with sputum some careless consumptive has deposited upon the pavement. This is carried into our homes where it may contaminate the hands of our children playing upon the floor, or during tomorrow's sweeping may be raised as dust. I have no doubt that many of us have been infected in that way.

I have said that overwork (including overplay); poor food, and foul air never caused tuberculosis, but given a person, who possibly years before has been infected, and subject him to overwork, poor food and an ill ventilated atmosphere and the result is that a mild benign infection flares up into a malignant disease, the latent, closed, innocuous lesion becomes an active, open, dangerous lesion, capable of spreading infection far and near. Measles, whooping cough, and some other infectious diseases act in a similar way upon a latent infection.

So far, all I have said concerns the human strain of tubercle bacilli, for there are a number of different strains but two only concern us, viz., the human and the bovine strains. Without doubt pulmonary tuberculosis is caused by the human strain and practically speaking by that type alone. This then is the form we must bend every effort to combat and it seems to me that it is rather a relief to know that we

can devote our chief energies in this direction with hope of great success. I would not have you think, however, that I consider the bovine type of tubercle bacillus of little importance. It is the cause of a considerable proportion of disease among our children and can produce pulmonary tuberculosis in adults. Consequently we must guard our milk supply.

With a suitable system of governmental inspection, meat as a source of tuberculous infection is so rare that we need only mention it in passing.

Few believe to-day that tuberculosis is hereditary, but some hold that the susceptibility to it is so transmitted. Others even attack this view and on the whole, as a working hypothesis, we may say that tuberculosis is not hereditary, but is practically always acquired after birth.

To recapitulate briefly, I would submit to you the following statements:

1. Tuberculosis is due to only one cause, the tubercle bacillus.
2. Sunlight and fresh air kill the tubercle bacillus.
3. Tuberculosis is a house disease, i. e., it is contracted in the house and is not hereditary.
4. The tubercle bacillus enters the house with the tuberculous patient, the tuberculous maid or servant, upon the shoes or skirts, which have been contaminated, in the streets.
5. Prolonged, close, continued contact is necessary for infection of the healthy.
6. Tuberculous milk is dangerous for children but the predominant source of danger is from the sputum of patients with pulmonary tuberculosis.
7. With proper inspection, meat is of little danger.
8. Tuberculous infection and tuberculous disease are not synonymous. The tubercle bacilli causes tuberculous infection, which may remain latent throughout life or may be called into activity by overwork, poor food, foul air, or other influences depressing the bodily vigor.
9. Anyone may contract tuberculosis if sufficiently exposed.

THE FUNDAMENTAL PRINCIPLES OF PREVENTION.

The eradication of tuberculosis, which some have foolishly predicted will be accomplished in fifteen or twenty years, can hardly be said to have begun. To borrow a simile from Dr. Osler, the people are awake, are no longer sitting upon the side of the bed just beginning to dress, but are nearly ready to put on their coat and go forth to battle. Soldiers must be trained; so, too, the people in this struggle against tuberculosis. Many lessons are slowly learned, especially when the pupil is an unwilling student. Who of us want to have disagreeable facts thrust in our faces? How many of us argue that "what we don't know won't hurt us"? We have in part been made to learn, and education of the intelligent mass of the public is the first step toward overcoming this subtle foe, "who slumbers not nor sleeps." The great instruments today of popular education are the newspapers and first and foremost we want to enlist their support. By their means the inhabitants of city and country will learn what should be done. But the next step in this battle to the death must be fought out in the cities, where men congregate in masses, overworking, underfeeding, and breathing everything but fresh air. These

factors hold to some extent for the country, where it has been said that the air is always good because the farmers shut up all the bad air in their houses. The problem in the country demands more consideration than it has received in the past, but tonight we are concerned with the municipal problem of tuberculosis.

MUNICIPAL PROPHYLAXIS.

This most important problem is best attacked in two ways, which may be spoken of as direct and indirect.

I. THE DIRECT ATTACK.

The only cause of tuberculosis is the tubercle bacillus and the chief source of contagion is the sputum of patients with pulmonary tuberculosis. There are two stages when a patient is dangerous; the first is early in the disease before the diagnosis is made and the second is late in the disease when he is too weak to be careful. Infection, as I have said, occurs in the house. These are points of vital importance and should ever be kept in mind in our direct attack, which of course deals with the collection and destruction of the tubercle bacillus as it leaves the body. The tubercle bacillus is not ubiquitous and we need not be unnecessarily alarmed in this struggle. We must do all we can to quiet that panicky condition of the public known as "phthisiophobia," for I am firmly convinced that if we arouse it by ill-timed measures we will cause many patients to conceal their disease and concealment and danger are synonymous terms in this problem.

We all shrink instinctively from a man who uses a sputum box, but if he should expectorate upon the floor of a street car or building, we frown upon him, but strange to say, fear him less. This erroneous attitude we must overcome, for to ostracize the user of the sputum box is to court concealment and carelessness, the chief forerunners of infection. Indiscriminate spitting must cease, but we must furnish receptacles for sputum. In cities where the gutters often contain running water, patients may be told to spit into this water, but here this is impossible. You must enforce your anti-spitting ordinances. Undoubtedly a very important result of such ordinances is to bring home to many thoughtless persons the necessity for care about the sputum.

Our direct attack, however, must go further, for as I said before, infection takes place practically always in the house. But how are we to discover where it is? New York city which has the most complete anti-tuberculosis laws of any municipality in the world, thanks to Dr. Biggs, began fifteen years ago a system of notification, voluntary at first, but later compulsory, of all patients with tuberculosis. Syracuse has had for some time this system of notification which enables the Board of Health to attack the tubercle bacillus in its stronghold, the home. Whenever a specimen of sputum is sent to the Board of Health for examination, it is equivalent to a notification, for accompanying it must go certain information about the patient. There are no valid objections to notification, provided the records are accessible only to duly authorized officials.

In regard to notification, as in many other matters, it is difficult to teach the older men. They will not report their cases and defy the law. Such an

attitude is foolish when the records are properly safeguarded, as well as dangerous to the community in many instances.

Disinfection and renovation of the premises may follow notification, but the whole thing is better accomplished for the poor, particularly by the dispensary.

THE DISPENSARY AND ITS ADJUNCTS.

The dispensary has two aims, first prevention and second, treatment. The patient naturally reverses this order and goes to the dispensary for diagnosis and for treatment.

A. Dispensary Treatment.

The early stages are diagnosed and the fortunate patient is sent to the institution especially adapted to his needs. Two objects are accomplished by this, first the patient does not become a source of danger as his lesion remains closed and second, he is returned to the community able to support himself.

When the lesion is open, which occurs at times almost at the onset of symptoms, the diagnosis enables the patient to dispose properly of his sputum and so renders him harmless.

Institutional Treatment. These patients may belong either to the incipient or to the moderately advanced stage and our object should be to arrest the disease at once by sending them to one of the following institutions:

1. The Sanatorium. The sanatorium is intended for patients with good chances for more or less permanent recovery. All very early cases should be sent here for a time at least for education as well as treatment. The care of tuberculosis is not a question of climate. The "ravages of tuberculosis are coterminous with the limits of civilization and there is no latitude in which tuberculosis does not occur, provided mankind is present in sufficient numbers and under unhygienic conditions" (Philip). Change of climate may be beneficial, but is far from necessary and I am convinced that given proper care and treatment, patients will do well near Syracuse.

2. The Day Sanatorium (or camp as some term it). Many patients cannot go to a sanatorium for various reasons but will spend a part of each day undergoing the same treatment, provided they are allowed to return home at night. It is easy to see that a much larger number can be provided for with the same expenditure, though the results are less satisfactory.

3. The Night Sanatorium (or camp). A certain number of patients are in such condition that they can work if placed under proper hygienic surroundings at night. By this I mean, an opportunity to sleep out of doors in a well sheltered shack. Supper and breakfast could be provided for them at a minimal cost. Many patients, who have been graduated from the sanatorium, or the day camp, may by this means be rendered self supporting, or indeed, enabled to support their families. This is a most important branch of the work.

4. The Maternity. It is still a moot point whether or not pregnancy itself lights into activity a latent, quiescent, or arrested process. I am of the opinion that the exercise necessary during the second stage of labor may account for many of the relapses fol-

lowing childbirth. However this may be, certainly tuberculous mothers who can live under good, hygienic surroundings for some weeks before and after confinement, do far better than those who cannot obtain such treatment. A maternity for such cases is very important.

5. The Out Door School. The tuberculous child should not be allowed to attend the ordinary school, both for his own sake and for the sake of the other children. Out door schools have been successfully conducted in many places. It is easy to procure a tuberculous teacher and the results on both children and teacher are most gratifying. I am told there is no place in Syracuse for a child with pulmonary tuberculosis. Children should not mix promiscuously with adults and you should in your plan have a shack or pavilion set apart for them.

6. The Farm Colony. Many patients do not recover fully enough to return to their ordinary manual labor, and a farm which would afford suitable employment for a time for these quiescent cases has been found of much value. It should make part of your municipal scheme.

7. The Hospital or Infirmary. I mention this here simply to fill out the scheme as I shall discuss it a little later. It is the most important factor in the prevention of tuberculosis.

THE HOME TREATMENT AND CLASSES.

So far as I have discussed the institutions which stand in close connection with the dispensary, which has been called the clearing house in the antituberculosis campaign. Some patients, however, will come to the dispensary who wish to be treated at home. For more intelligent patients this is perfectly safe, and classes, as devised by Pratt, of Boston, should be organized. These classes save much expenditure of energy for nurse and physician, stimulate a healthy rivalry among the patients and are productive of great good. By the means which I have enumerated, provision has been made for the treatment of the patient, which, as I stated before, is the only reason the patient seeks the dispensary.

B. Dispensary Prophylaxis.

The chief value of the dispensary concerns the prevention of tuberculosis. The patient seeks medical aid at the dispensary and the social service department at once takes up his case.

The Visiting Nurse and Physician. The visiting nurse reports the social condition of the home, the physical condition of the different members of the family, and the material aid that is necessary. A physician, either at the dispensary or at the home, examines the different members of the family, and nothing is more important, for by this means early cases are detected as well as some chronic cases, which may have been the cause of widespread infection in the family. The education of the family is begun, but when at or near the poverty line, the investigations of Miss La Motte and Miss Lent show that it is useless to try to teach carefulness, and that removal of the source of contagion, the patient, to one of the places I have mentioned, is the only thing that is of the least value. In such instances the most important duty, the only important and effective duty, of the nurse, is to persuade the patient that he wants to go at once to such an institution.

This brings up the power of forcible removal, which the Board of Health of New York has been able to exercise for some time. It is rarely required, but knowledge of its existence is of great benefit. Dr. Biggs told me of one man who conducted a sweatshop where a large number of women and girls were employed. This tuberculous man, after repeated warnings, insisted upon spitting when and where he wanted, upon the floor and walls of his shop. He was forcibly removed to the municipal sanatorium upon North Brothers Island, where Dr. Knopf, the visiting physician, finds such patients usually very docile. The visiting nurse also keeps in touch with the discharged patients, who return to home and work. Evidences of relapse are thus quickly detected and the disease arrested again at once. No consumptive patient should be allowed to remain in a common lodging house.

The Dispensing of Charity. The visiting nurse may be aided in her work by the friendly visitor, but much more important, for all material aid should come through its channel, is the Associated Charities Organization. Milk and eggs for the patient too poor to provide them for himself while at home, such aid for his family that will permit a father or son to take advantage of institutional treatment, aid in procuring suitable work for the discharged arrested patient, are all to be relegated to the charity society, which must work hand in hand with the dispensary. Avoid, however, too many visitors, too many questions, or the patient will wish he never saw a dispensary.

II. THE INDIRECT ATTACK.

What I have said so far is concerned with the destruction of the tubercle bacillus, that is we attack it directly, but there are other points for consideration.

The knowledge that nearly seventy-five per cent. of the general population is infected with tubercle bacilli at some time before death, has emphasized the fact that the tubercle bacillus is not the only factor concerned in the development of tuberculosis to such a stage that it can be recognized clinically. Given an infected person, many circumstances may bring about this development; e. g., overwork, poor food, foul air, some acute diseases, dissipation, sorrow, and a thousand other depressing influences. The question of foul air, due to overcrowding in the home, especially the bedroom, and in the shop or factory, seems to be a problem easy of solution until it is thoroughly investigated, when it presents such far reaching ramifications leading into the whole social mesh-work of civilization that one stops aghast.

Much can be done, however, with these indirect methods of prevention and much has been done. A healthy man can resist an infection that destroys a weakling, but none has so much resistance that he can resist any infection. Fortunately for the vast majority of mankind, the infection is far from overwhelming, and every effort to improve the living and working conditions of the masses of the people will tend to reduce the mortality from tuberculosis. Among other agencies may be mentioned the establishing of park, "the lungs of a city," of playgrounds; throwing open the school yard for a play-

ground on Saturdays, holidays, and during vacations; the establishing of public baths, of fresh air farms for the children of the poor, of vacation lodges for working girls, of babies' dispensaries where not only medicine but good milk can be obtained at a nominal charge or free, of courses of lectures in the higher grades of schools where girls and their mothers can learn how to spend their money economically for nutritious foods, how to cook it and why cleanliness in the house is essential to health. The hygiene of the station houses and jails should be improved and to mention but a part of what should be done would occupy us for hours.

In Syracuse with your broad streets you are particularly favored in the question of light and air. Dust, however, accumulates rapidly in such streets and I believe some of us will yet live to see the day when our streets will be "swept" by motor driven vacuum street-cleaners, thus doing away with all dust. Twice breathed air, "ruminated air" as it has been called, is also to be combated, for, productive of anaemia, it may thus lead to the development of the tuberculosis which many of you harbor. The city must see further that not only proper ventilation of the house is provided for, but also proper ventilation of the street, i. e., there should be no blind streets, no back to back houses. Light is equally essential for even scrupulous cleanliness in dark rooms does not exclude tuberculosis. What to do with insanitary houses, insanitary tenements, is another problem you must face. One escape would be so to increase the taxation on a tenement that was a "nest" of tuberculosis, as to make it profitable not to reconstruct but to raze and rebuild. The right of property should never legalize an attack upon the life of one's neighbors.

Syracuse will become more and more of a manufacturing centre as time goes on and now is the time to take steps to guard your city against the smoke, the dust, the gases, that belch forth from the factories. Wherever possible grant them such privileges that it will be to their interest to locate where the prevailing winds will carry off the smoke, dust and gas.

Thousands are working along all these lines both here and abroad, but the results so far obtained are far from what we wish.

THE HOSPITAL.

The Necessity of the Hospital. The patient with an early and undiagnosed open lesion may be of considerable danger but is usually willing to observe strict sanitary rules, when it is explained to him that such a method not only protects others but directly affects his own health. With the patient in the far advanced stage, however, this is all different. He has lost hope, his strength is failing, his funds exhausted and he awaits but the inevitable end. Be he ever so willing it may not be possible for him to carry out hygienic measures. There is too that class of patients who, at or below the poverty line are, together with their families, simply too ignorant to realize the necessity for cleanliness. They have with truth been dubbed the "unteachable consumptives." These are the patients who spread infection and are a constant source of danger to the public welfare as long as they remain at home with their families. They cannot with justice to the other

patients be admitted to the wards of a general hospital and their condition has been, until recently, deplorable for the only door open to them was that of the county poor house. I know these facts to be true from many sad experiences as until very recently, only in the largest cities did special hospitals for tuberculosis exist. This disgrace need no longer be suffered by any city in the State of New York for this year a bill was passed at Albany enabling the board of supervisors of any county by a majority vote "to establish a county hospital for the care and treatment of persons suffering from the disease known as tuberculosis." The board has power to acquire a site, to erect and maintain all necessary buildings, subject of course to the approval of the State commissioner of health, to assess, levy and collect taxes sufficient to carry out these purposes, to accept and hold in trust any gift for the said hospital and to appoint a board of managers consisting of five citizens of the county, two of whom shall be practising physicians. As I understand it, Onondaga County is about to decide to erect such a hospital and I want to congratulate you tonight upon this most important step, probably the most important in regard to health that has ever been taken in this county.

The Advantages of a Hospital. In a recent book upon the study of the prevention of tuberculosis, Dr. Newsholme of England considers carefully all the factors that have entered into the great reduction in the death rate from tuberculosis in England and Wales and Scotland, and why the death rate in Ireland has not only failed to decrease but has actually increased. He has studied the indirect as well as the direct methods of prevention and comes to the conclusion that the lowered death rate in England and Wales (which by the way is the lowest in the world) is due to the fact that material assistance to the poor consumptive has been given him only in the hospital connected with the town poor house. Here the patient was kept as long as he cared to remain. In Ireland on the other hand, the opposite course has been pursued and much outdoor relief (outside of the hospital) has been dispensed. The patient remains at home, a source of infection which is clearly shown by the health records. He considers a vast array of details before arriving at this conclusion, from which I see no escape.

There is another reason why you should have this tuberculosis hospital which, while it may be purely hypothetical, has some analogous facts as a basis. When the tubercle bacillus gains entrance into the body, a struggle begins at once between the cells of the body and the germ. We know that the body cells secrete antagonistic substances in many diseases and possibly to a certain extent in pulmonary tuberculosis, but we seldom if ever concern ourselves with the idea that the bacteria may in turn secrete some substance antagonistic to those of the cells. These bacterial substances may, it is possible, vary slightly for different cultures of the tubercle bacillus and the same may be true for the cellular antagonistic substances. The practical point which I wish to raise concerns the fact whether the tubercle bacillus which has attacked one member of a family and broken down in more or less part his resistance, may not acquire

in this struggle some added virulence for another member of the same family. Granting for the moment that this is true, the hospital would afford a great means of protection to many families too poor to consider for a moment employing a nurse, where some one or even several members of the family must be exposed to this strain of germ when their bodily resistance is at a very low ebb through nursing.

Some may object to the presence of the hospital, as they think it is a source of danger to the neighborhood. This is entirely false and in fact statistics go to prove the contrary. St. Moritz and Davos Platz in Switzerland, Gravenhurst in Canada, G6rbersdorf in Germany, and Colorado Springs and Saranac Lake in America have all found that a great influx of consumptives has not increased, but in some instances has considerably decreased the tuberculosis mortality among the residents. More recently it has been shown that in Philadelphia, in the neighborhood of a hospital for tuberculosis, the death rate actually decreased while in the neighboring sections of the city the mortality increased. The establishment of a hospital therefore should be recommended as a great benefit to the immediate neighborhood.

The Site. The site of the hospital is very important. You must bear in mind that you are going to accommodate two classes of patients, one the early stage, the other the late. Neither may be anxious to go and while it may not be so important to care for the early case in the institution, you must take in the late case, for he it is who is the chief source of infection. He may need much persuasion and here the value of the visiting nurse is emphasized. She can often bring to pass what you or I would find impossible. He objects to leaving his family and you must be able to show him how easy it is for his family to reach him from any part of the community. This means that the site must be within the limit of the five cent car-fare, for otherwise, the expense and time consumed are too great. This is, in my opinion, a very important essential.

The site should be on rising ground, higher than most of the surroundings (to avoid fogs), well protected from but not entirely shut off from the prevailing winds by hills or by woods, preferably of mixed foliage with evergreen predominating, commanding exposure to the sun and a pleasing, interesting and varied view, with dry, porous (sand or slate, never clay), well drained soil. Good, potable water should be present in abundance and a lake or dam whose overflow could be utilized as water power is a valuable asset. The question of disposal of sewage is to be considered in regard to the site as well as opportunities for wooded, graded walks. Ample vegetation prevents dust. With the beautiful rolling country that lies about Syracuse, you should have no great difficulty in obtaining a suitable site. But let me impress one point upon you. Be sure to get enough land. The scheme which I am going to outline to you will necessitate at least 100 and better 200 acres of land. Of course you can do with far less land but the *proper* plan could not be carried out.

The Comprehensive Hospital. The scheme to which I have just referred would enable you to put

into operation nearly every suggestion which I have discussed. The hospital I would have include an infirmary, a day and night camp, a maternity, a farm colony, several shacks for early cases and at least one for children. I do not mean that you should complete the scheme at once and I would advocate, as soon as sufficient land is acquired, that you build the infirmary at once. Here for the time being you can send all cases, early and late. It is easy then to start a day camp. Before long you will, I am sure, see fit to urge that a night camp be added. To erect a few shacks where you can keep hopeful cases, quite apart from the infirmary, will soon follow. Then you will use your infirmary (really the hospital proper) as a reception pavilion, whence you draw your patients for the shacks and the day or night camps. Many patients will of course remain in the infirmary until they die. For the prevention of tuberculosis this is the most essential feature of the whole plan. In building your infirmary you must bear in mind that it will, if it is to accomplish its main purpose, be largely filled with patients who are bedridden or nearly so. You will be surprised that they do not realize more fully their condition and that they question whether the infirmary affords them the means of regaining their health. While you realize how futile such hopes are for them you must, however, so build your infirmary that you can offer them better accommodations than they can get at home. I would suggest that you have in your infirmary a few private rooms which could be at the disposal of those who could afford to pay more than the minimal nominal sum demanded from those who, while in reduced circumstances, still desire to pay something. The new State law admits of this but it will never come to pass if you connect the hospital with the poor house. There should also be several small wards for not more than four or five patients. One or more of these wards should open directly upon porches upon which the beds can be rolled when desirable. Several rooms for dying patients are also necessary. The details of construction I will not go into tonight as they have been so fully discussed in many recent publications.

THE BOARD OF HEALTH.

"Every member of the community is entitled to protection in regard to his health, just as he is in regard to his liberty and his property, but on the other hand his liberty and his control of his property are only guaranteed to him on the condition that they shall be so exercised as not to interfere with the similar rights of others, nor be injurious to the health of the community at large" (Webster). The public health in America is entrusted to the boards of health, which have supreme power in all matters regarding the health of the community. Clothed with such legal power they are enabled to enforce laws which otherwise would be totally disregarded. Consequently the whole municipal campaign rests in final analysis upon the action of the board of health. Without the cooperation of the board of health the dispensary would be a sounding brass or a tinkling cymbal. Far better than to have to depend upon cooperation between the board of health and the dispensary is to have the board of health maintain the dispensary, which is done in Syracuse. In this

way the necessary power is given to the dispensary officials. The sputum examinations and disinfections, which are made by the board of health, are directly at the disposal of the dispensary. As soon as a diagnosis is made a patient's effects and his room should be thoroughly cleaned and disinfected. Notification from the dispensary is not necessary for the two departments are one and so labor is saved. Disinfection and renovation of the premises may follow notification, but the whole thing is better accomplished for the poor, particularly, by the dispensary.

Again I would like to make a suggestion to the Board of Supervisors of Onondaga County. You will soon be called upon to appoint a board of five managers for the hospital, two of whom must be practising physicians. Arrange it so that the health officer of Syracuse, who is the director of the city dispensary, shall always be a member of the board. The wisdom of having the dispensary and the hospital in close touch one with the other, is too evident to discuss.

It is a question in my mind how much energy and time and money should be devoted by the board of health to the education of adults. While lectures to adults are productive of some good it is difficult to attract the persons who really need the information which such talks convey. It is furthermore difficult to change the habits of adults, while children are very impressionable. From our experience in Saranac Lake, I am convinced that short talks to the children upon the fundamental facts of prophylaxis against tuberculosis, are productive of great good. With a limited number of children it is possible for the physicians of a town to deliver such talks, but in a city such as Syracuse, this is impracticable. Here some such scheme as Dr. White has adopted in Pittsburgh would be of great value. There they have a trained nurse who, having recovered from tuberculosis herself, goes from school to school with a portable exhibit, adapted to children. During the course of the year every child in Syracuse would know what to do to prevent tuberculosis if some of your leading citizens would place a fund sufficient for the purpose in the proper hands. I feel strongly that to be efficacious, rules for the prevention of tuberculosis must be inculcated early. How many of the older physicians in this room take kindly to reporting cases of tuberculosis? The younger men I warrant will do so without a murmur. The child is father of the voter and of the tax payer of the future. They are the ones we must educate and we must do it now. In a few years it will be too late and we will have to begin on the succeeding generation. As soon as you have your municipal scheme working, this work will take care of itself. The children will educate the parents and the patients who go from the various departments of your hospital will be the leaven for the whole mass of the people. I should not waste too much time then upon the education of adults. It might be wise to circulate the pamphlets which were awarded gold medals at the International Congress at Washington, e. g., *What Mothers Should Know about Tuberculosis* and *What Teachers Should Know about Tuberculosis*. A circular letter addressed to the proper authorities in all the large business houses and

department stores might be prepared with considerable profit.

I would not, however, be misunderstood. The public must be kept constantly in touch with the work that is being done. "Indispensable to financial support and administrative efficiency are making known work already done and emphasizing work not yet done through: a, administrative records and reports of the health department, hospital, etc.; b, periodic reports to the public, giving information necessary to enable communities to gauge progress and forecast needs; c, annual budgets, segregated by function, comparing cost of work already done with cost of work necessary for the coming year, and prohibiting the transfer from purposes advertised without public explanation of the reason" (Allen and Miles). The people and the city and county authorities have to supply the sinews of war and have a right to have set before them clearly what the funds have done and what funds are necessary.

A little booklet published by the health authorities, could give every physician, every social worker, every employer in Syracuse in small scope exactly where to send the tuberculous patient who needs assistance or the poor man who needs medical advice and diagnosis. In it you should utilize also your organization. Several cities have done this.

In regard to promiscuous spitting you must strain every nerve to abolish it by signs, talks to children, and by arrests. When you do your morbidity and mortality from pneumonia and other respiratory diseases, as well as tuberculosis, will greatly decrease. It is wise to arrest a large number of persons who break the anti-spitting ordinances in one day. Then the newspapers will be full of it and it will cease for a time. New York has done this with success.

TUBERCULOSIS MUSEUM.

Another agent that has not been sufficiently employed in the crusade against tuberculosis is the permanent tuberculosis museum, where appliances of every description for the prevention and treatment of tuberculosis are on constant exhibition. It might be wiser to have this in a room apart from the dispensary and possibly your municipal building may be able to devote a room to this most important subject.

LITERATURE.

There are two little books to which I would like to draw your attention. The first deals with the hygiene of the lungs and is by a famous Austrian physician, Dr. Leopold von Schrotter. It takes up briefly the structure, the functions of the lungs, discusses a few diseases as fully as it is well for anyone but a trained medical man to read. The second by Dr. Knopf, of New York, is a very valuable contribution to the layman's library. It deals with what a patient and his family should know and takes up every subject connected with the prevention of tuberculosis. Everyone interested in this most important subject should own and study this little book.

¹*The Hygiene of the Lungs*, published by the Reuben Co., New York.

²*Tuberculosis a Preventable and Curable Disease*, published by Moffet, Yard & Co., New York.

THE RESULTS OBTAINABLE.

One word in regard to the results obtainable by this scheme for controlling tuberculosis. Do not expect to see marked results in the death rate next year, nor the year after, nor for ten years. The individuals who are to develop tuberculosis next year are already infected and many who are now infected will possibly soon be enabled to avoid the direct cause of tuberculosis, i. e., the tubercle bacillus, but the indirect cause will quicken the tuberculous infection which they now have into clinical tuberculosis. We must be patient. The death rate will surely be reduced but we are dealing with a foe that yields slowly inch by inch. Probably the death rate among infants and children from meningitis (tuberculous inflammation of the brain) and acute tuberculosis will be affected first. Let us in any case remember that in this matter the sins of the father are visited upon the children of the second and third generation and that some of us must expiate those sins. We, however, must work for our children and then our children's children will live to see the day when tuberculosis will occupy the same position that smallpox does today, for has not Edinburgh reduced its mortality from tuberculosis forty-two per cent. during the first twenty years after the establishment of a municipal scheme somewhat similar to the one I have outlined tonight.

In closing, I want to congratulate the city of Syracuse and Onondaga County upon the selection of the members of the preliminary committee. You are working not only for others but for yourselves, and your own flesh and blood. "The day is short and the work is much and the laborers have been slothful and the reward is great and the master of the house presses."

CERTAIN CONTAGIOUS DISEASES OF THE SKIN.*

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Skin diseases are without doubt the *bête noir* of the general practitioner of medicine. It is difficult to understand this when one reflects that of all the organs of the body this great, complex, elastic, sensitive envelope is the only one which lies open and exposed to every means of inspection. Contrasted with the organs hidden within the thorax or the abdominal cavity, to ascertain the pathological changes or the abnormal functions of which we invent so many instruments of precision and train so carefully our senses of touch and sound, the skin would seem to be a welcome field for practical work. Its normal appearance and activities are constantly under the eye and hand of every one, and its whole expanse is the object of our daily care. We can note macroscopically every deviation from its normal condition, and we can apply our remedies directly and certainly, without the aid of instrumental adjuncts, awkward or impossible save in the trained hand. Contrast this with that great, complex organ, the brain, with its multifarious functions, its complicated structure, shut away from sight, sound, or touch, in its bony inclosure.

But I conjecture that the very ease of access, by

multiplying the varied observed phases of pathological activity, contributes to the confusion that tends to gather in our minds when we come to note the picture that is present. We have very clear notions regarding the changes present in the various forms of bronchitis or nephritis, learned for the most part from the autopsy table; but I sometimes wonder if these diseases were open to vision during life, like dermatitis, whether they would not perhaps show a like confusion of appearances, varying with the individual and the producing causes. It is certain that inflammation, as a pathological process, works in a multitude of ways upon the skin; it is difficult to conceive of any such innumerable varied lesions, expressive of one pathological process, picturing themselves on any inner organ. Maybe it is impossible; maybe, too, it is fortunate for the diagnostician that his resources do not include a vision of a morphology which might be confusing. At all events I will freely admit, so far as the skin is concerned, that while most of its lesions fall readily into a type, which is more or less readily legible, there are aberrations which puzzle the acutest observer. Varying in its structure, exposed to the varying performances of the internal machinery of the body with which it is intimately connected, and to assault from all the outer world with which it comes in contact, it is small wonder that the skin is the theater of multifarious activities abnormal to it and that they should take on varied form with differing stage setting.

Within recent years infectious, and especially parasitic diseases of the skin, have increased in frequency in this country. The cause for it is not far to see; it is in the vast impouring of foreign peoples, many coming from the lower strata of society which fill the European clinics. Our country has never known, heretofore, even in the dense city populations, far less in our wholesome and sparsely settled country communities, the diseases of degradation, of poverty, and filth, that all Europe has been filled with. Some of these, prurigo for example, are limited to the subject and are not spreading among the native population, being seen only as it rarely appears in an affected immigrant and, indeed, amenable to the bettered conditions of life here. But the contagious parasitic diseases have had wider distribution.

Scabies is the chief of these among animal parasitic diseases, the ringworm diseases of the vegetable fungous affections, and along with them may be placed at least clinically the somewhat varied expressions of the pyogenic organisms known under the name of impetigo. These three are getting beyond the crowded centres and out into the country at large. It is my observation that they often fail to be recognized, and for two reasons; they are new, and they have a changed form under the new conditions. Very much so does smallpox in the mild form now long prevalent in the country escape detection; similarly these diseases fail to present the characteristic appearances of which we have conception. Environment of personality and cleanliness of habits very much modifies these essentially filth diseases, and they differ from the disease when the conditions are such that, undisturbed in its natural course and with the surroundings of uncleanness and indifference, it comes to full development in a congenial soil. I would not be understood as saying that smallpox

*Read before the Dutchess County Medical Society.

which I have used as an illustration is for a like reason mild; it chances to be mild, but the reason for this I do not know and no one else knows, but I do not believe that it is so because of sanitary surroundings; it belongs in an altogether different category from these external infections.

I think we all have a very clear conception of the typically developed scabies, even if not very frequently coming under our personal observation. We know of it as a contagious disease due to an animal parasite, having a special lesion which is produced by the burrowing of the female itch mite into the skin for the purpose of depositing her ova, and presenting a clinical picture made up of these characteristic burrows and of a vast amount of multi-form lesion due chiefly to scratching to relieve the itching, and along with it pus infection. We picture this as coming most conspicuously on the hands, especially the web between the fingers, and we all have in mind the illustrations in the textbooks of such a hand, with distended fingers the inner sides of which are covered with papules and vesicles, but mostly pustules, an aggravated array of lesions which tells its own story and admits of but one diagnosis.

It is well to fix in mind the characteristics of a disease, but not to be bound absolutely by them. In dermatology these are made up morphologically of two factors substantially, viz.: the lesion present and its distribution; there are others such as the configuration, the subjective symptoms, the course of the disease, but these are chiefly important so far as the lesions are concerned. Typically, scabies is such a disease as the picture of it which we have in mind has indicated. The lesion is a multi-form one, for the reason that the most of it is a secondary dermatitis. The distribution of the lesions is chiefly to the interdigital skin, the wrists and forearm, the axillary folds and about the waist line where clothing presses, the mamme in women, the genitalia in men the toes in babies. It is understood that, as its vulgar name indicates, it is attended with much itching.

Probably no one will mistake a well marked case of scabies. But outside the dispensary well marked cases are uncommon, at least those distinctly pronounced illustrations of the disease pictured in the textbook. Among more refined people it is common to find it far from typical in its manifestations and the ideal scabies is rather seldom seen in our better practice, although its occurrence there is not infrequent. I am sure my observation cannot be unique, and I wonder at finding so little reference to this by authors of dermatological literature. Scabies with all its pronounced characteristics belongs "to the class of people among whom washing is indulged in with the utmost caution"; and among these it thrives best, for it riots on neglect and filth. But scabies is by no means confined to this class, for it is not infrequently found in persons of scrupulous habits, and no social status is exempt from it. Pretty intimate contact is generally necessary to contract it, but I have seen cases that clearly came from first class Pullman sleeping cars, and there is good chance for the acarous to be left on the blankets of even the best hotels.

It is my observation that scabies of this sort is very often completely overlooked by general prac-

titioners, and I have seen cases which have gone for weeks, and months even, unrecognized. It is for this reason, therefore, that I am prompted to present this subject and give it a practical bearing by suggesting the essential characteristics which define these less well marked cases.

In the first place, where it has lasted long there will be history of its being communicated to others. This alone should excite suspicion. The number of communicable skin diseases is not large; exclude the exanthemata and syphilis, the parasitic diseases and the diseases produced by pus organisms, and there is little left.

Then itching is a constant symptom, common to be sure to many ailments, but having here some idiosyncrasies. Itching coming on abruptly, in a person in good health, out of proportion to the eruption in these people, persistent instead of transient, distributed pretty generally over the body, but most marked where the clothing presses, and experienced little during the day, but rendering sleep impossible, is likely to be from scabies. Add to this a history of communications and the data are complete.

As to the eruption, it is a common mistake among physicians to disregard the other elements of a clinical picture and to fail of a diagnosis by fixing attention only on the morphology of the eruption, and not finding it to read true to copy to miss the disease. This is a constant source of error with general practitioners regarding skin diseases, and notably in the case of smallpox as now seen; skin diseases are not altogether legible to the eye. In the cases of scabies which I have in mind the lesions on the skin may be very ill expressed. Instead of the more or less abundant lesions of pustules and vesicles, there may be only scattered papules, torn perhaps some of them by scratching and few in number at that, and it is generally impossible to find the burrow lesions which are distinctive of the disease. We will find, however, the characteristic areas of scabies affected generally. One of the most significant is the ulnar side of the wrist; the habits of cleanliness may keep the fingers clear, but this point rarely escapes. The forearm is usually papular. The waist line, especially in women, where the clothing presses, and the front of the axilla, and the nipples often have diagnostic lesions. A vesicle or two on the dorsum of the penis is characteristic in men, but in this class commonly lacking. The distribution of the eruption is more a striking feature of scabies than the morphology. Often there is hardly any eruption.

Given a case in which itching has developed without an apparent cause such as derangement of health or recognizable skin lesion, more intense at night, occurring at the sites indicated on which the eruption is perhaps but trifling, and where there is evidence of participation in the same by those of the family who are brought most in personal contact such as being occupants of the same bed, there is room for the diagnosis of scabies only.

Of the vegetable parasitic diseases, those of the ringworm parasite are more common than formerly; more people are susceptible to the trichophyton fungus. It produces diverse clinical effects according to the site of its growth; the simple ringworm of the nonhairy skin; the bald spots on the scalp; the extensive folliculitis on the bearded face; the exces-

sively itchy "eczema marginatum" of the crural region. Of these the two last have been more common. These fungi grow by preference in the horny epidermis, but on the bearded face they generally penetrate along the stiff hairs into the follicles and down into the corium, setting up an intense inflammation which shows itself as lumpy, abscess looking tumefactions with distended and discharging follicles. The true nature of this is often overlooked. It is taken for a simple inflammation, or dermatitis, and I have known it to be taken for abscess and treated with poultices which intensified the condition by apparently causing the fungi to grow riotously. This parasitic syphilis can be recognized by two distinctive marks: The region which it affects is along the line of the jaw and down over the bearded area of the front of the neck where the skin has a loose structure, and the hairs have fallen out over the lumpy tumefactions or come out with the slightest traction. Depilation, shaving, washing, and parasiticide washes and ointments effect its cure.

I have seen identically this condition on the hairy wrist of an adult man, as a sort of a curiosity. The wrist is a common site for the simple ringworm of childhood; in my case instead of the soft lanugo of childhood there was abundant growth of stiff hair and there was a folliculitis set up quite like the so called tinea kerion sometimes found in ringworm of the scalp in children.

Tinea cruris, ringworm of the crotch, is seen more often than formerly and more rebellious. I think this may be because of differing fungi, but it may be because some hosts are better suited to its growth. The tender skin, kept always warm and moist, is the chief reason why tinea cruris differs from ringworm of the free skin. It has the abrupt circinate border of ringworm which encloses a red, inflamed area with a moist surface, suggesting the old name of marginated eczema, on the inner surfaces of the thighs and over the genitals, sometimes reaching up over the abdomen. A chief characteristic of it is the intense periodic itching. Often it disappears like magic on the application of sulphurous acid, which should always be prescribed in the original glass stoppered bottle direct from the manufacturer, for it deteriorates on the least exposure to air. But sometimes it persists despite every resource, preserving its outline, in a dermatitis apparently secondary and not affected by parasiticides; mostly in women and corpulent men with sensitive, vulnerable skin, yet sometimes in nervous, spare individuals. The patients will not get well until they are taken from work and kept quiet in their room or in bed.

Tinea of the axillæ is quite identical with tinea cruris, but less seen.

I would like to add a word regarding these parasitic diseases for the ear of the health officers. All subjects should be excluded from schools. Occasionally they appear not to be, as complaints come of this occasionally to the State Department of Health. A child with scabies, under the gregarious habits of childhood, may infect many of his associates. A week is long enough to destroy the infectiousness of a child at home. In orphanages the conditions are different. Here reinfection is so con-

stant that the child does not stay cured, and after a time the very institution seems to become infected, and in cases that I have known of it seems almost as if some new infectious disease had developed that could not be simple scabies. The children have been taken out and the place well disinfected, and still it recurs when they are brought back. There are many places for the animalculæ and their ova to hold on, in beds and floors and walls, quite unlike the domiciliary conditions. At the same time it seems as if occasionally a community becomes in similar way infected, and many varied names come to be given to the prevailing itch. Recognition that it is only scabies and application of persistent disinfection along established lines is all that is needed. As to ringworm similar care is needed. It is not so readily cured, but single cases yield. When it affects an institution it is vastly harder to eradicate; indeed, sometimes it seems as if it has to wear itself out there.

For the treatment of scabies I am partial to styrag; in ointment, one part to two of lard. A vigorous bath should precede it, all body and bed linen changed, all affected members of the family treated simultaneously. Styrag relieves itching and helps the dermatitis and so is good for old cases. Continue treatment for a week. Of parasiticides for the ringworm fungus I prefer the mercurial ointments and iodine, the latter in 1 in 10 solution in goose oil as proposed by Jackson, or the iodine petrogen of ten per cent. strength. Bichloride packs are not effective, and moist applications are not desirable.

Regarding impetigo I will say a practical word only about its adult subjects, among whom in later time it has been more prevalent. Contagious impetigo of childhood, affecting the children of a block or school and spread through the intimate habits of young children has always been seen in its little epidemics. In the adult male it is modified by the thicker skin of the face and the care of the subject; it may be also true that there are various pus organisms that produce impetiginous lesions. In any case it is infectious in origin and commonly comes with a history of appearing a day or so after shaving in a strange barber shop. The patient commonly presents himself with a number of flat vesicopustules on his cheeks, chin, and neck, of the size of a pea or fully developed to the size of a cent. Some of this will have dried after having lasted two or three days down to yellowish crusts which are superficial and really look as if they were stuck on with mucilage. The process varies in intensity; sometimes the patients come to us with three or four large and thick crusts on the throat or cheeks the size of a dollar, formed from large bullæ or the coalescence of smaller lesions. These soon fall, for the process is superficial, leaving a red moist surface which soon dries and later fades away. And sometimes there is a little papular dermatitis which lasts longer; but commonly the appearance is classic to a degree. The course of individual lesions is short and new ones forming the clinical picture, which consists of small pea sized, larger finger nail sized, flat, moist, vesicopustules, desiccating lesions, and yellow crusts, all very distressing and disfiguring, but without subjective symptoms of note. Left to itself it will con-

tinue indefinitely, but readily recognizable it is also readily cured, for the pus cocci growing thus on the surface of the skin are easily destroyed by cleanliness and antiseptics. Washing the affected surface frequently with soap and borax solutions, a mild ointment of boric acid and ammoniated mercury suffices. Its significance is in its contagiousness, sometimes a number of cases come from one barber shop, and there is a rather increasing frequency of its occurrence.

17 WASHINGTON AVENUE.

ON THE USE OF MERCURY SUCCINIMIDE IN SUPERFICIAL TUBERCULOUS LESIONS.

*Report and Demonstration of Cases.**

By R. HERTZBERG, M. D.,
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Tuberculous lesions of all kinds have for ages past tested to its maximum the resources and armamentarium of the best minds in the profession. As far back as medical history gives us knowledge the "white plague" has demanded its daily toll in suffering and death from mankind.

Small wonder, then, that no stone was left unturned, nothing left untried in an endeavor to find something that would produce a cure. For many years this search went on by men in all stations and nations, everything that held out a ray of hope was followed and tried out. No drug so crude but was given trial, no system so idiotic but was put to the test, no theory so illusory but found adherents. Anything and everything that was vaunted as a cure but beguiled some poor afflicted ones out of time and money in a vain striving for help. And all to no purpose, nothing helped, nothing cured; the lesions progressed in spite of all the powders, pills, and nauseous draughts that the patients were made to swallow. A tuberculosis once established, in the majority of cases went to its termination unwaveringly, no matter what was done to stay the process.

Here and there a cure was reported and of course ascribed to the particular medicine the patient was taking at the time, only to again prove useless when given to others for the same disease.

The cause of the disease was attributed to everything from the "evil eye and witchcraft," to bad humors in the blood and obsession by the devil. No definite knowledge of either the cause, origin, and even character of the disease obtained. By some it was supposed to be merely a suppurative process which was inherited in some unknown manner; others blamed it on a peculiar lymphatic dyscrasia and called it the scrofulous temperament.

Superstitions, beliefs, and the numerous "isms" ran riot and it is easily conceivable why a general hopeless apathy settled over patients and physicians alike, where this disease was concerned. There was nothing to be done; let the patient live as comfortably as he can and turn him loose among his family and friends to do the best they could for him. This was the dictum. It was not until the beginning of the nineteenth century that a ray of light penetrated this chaos of darkness.

First came Laennec and Boyle with their new methods of examination, auscultation, and percussion; then, in 1865, Villemin, with his inoculation experiments upon rabbits and guinea pigs, proved the infectiousness of the disease and that it was a definite process always traceable to a previous lesion of like character. In 1881 came Koch with the discovery of the specific cause of the disease, and the interest of the whole world was at once aroused anew. The argument was, that if the cause was known the remedy should not be far off. But the newly aroused hopes were again doomed to disappointment, as so well exemplified by the history of Koch's lymph. But a new impetus had been given the work, and soon Trudeau published the result of his experiments on infected animals. He had taken two sets of rabbits and inoculated them with the *Bacillus tuberculosis*. One set he kept in a dark damp cellar, the other set he turned out of doors. The rabbits which were kept in the cellar suffered an unusually high mortality, the others all survived, some being affected with but a modified form of the disease from which they finally recovered.

Here was the first step in the right direction; the natural agencies were given their proper place, and one might well say that the birth of the modern sanatoria was had, when Trudeau announced the effect of sunlight and fresh air on his animal experiments. The advances made in the handling of all forms of tuberculosis have since that announcement been tremendous. Finsen gave the ultra violet ray for that previously incurable form of the disease, lupus; the x ray was used with more or less salutary effect in diverse cases. What the open air treatment has done we all know, and in cold hard figures it shows as follows: In 1853 the mortality from tuberculosis in Massachusetts was forty-two per 10,000 inhabitants. In 1895 it had come down to 21.8 per 10,000. The decrease in the United States has been from twenty-five per 10,000 in 1890 to nineteen per 10,000 in 1900. In Prussia the mortality fell from thirty-one per 10,000 in 1886 to nineteen per 10,000 in 1901. This showing is, of course, very gratifying, but there is plenty of room for better results yet, and necessarily our aim must be the complete mastery of this disease and finally its eradication from the annals of human misery.

The report of Surgeon Barton Lisle Wright in April of last year of a hundred or more cases treated successfully with mercury, was received by the profession with open mind, and many are to-day following his lead. That the results in all cases will be as brilliant as those reported by Wright is not to be expected, for he has all the help that a modern sanatorium can render those patients, at his command. What he has shown is, that mercury does have an effect in tuberculosis and this effect is demonstrated by an immediate improvement in the general condition of the patient, and a distinct step toward healing of the lesion is inaugurated. It would be interesting to know what course of reasoning led Dr. Wright to the employment of mercury in this disease. Perhaps he reasoned that if the two diseases, tuberculosis and syphilis, belong pathologically to the same class, namely, infective granulomata, why should not the same remedy apply to both, especially as iodine and its salts have been

*Read before the Stamford Medical Association, October 19, 1909

known to possess, in some instances, almost a specific action on the tuberculous process, as so well exemplified in the use of syrup of ferrous iodide in the cervical adenitis of children. Be that as it may, the fact remains that in mercury we have an agent whose possibilities for good or evil should be ascertained at once, and I believe it to be our duty to test its action in this disease as our share of the good work in order to as soon as possible get together sufficient evidence to either adopt or reject the treatment. The salt used by Dr. Wright in his series of cases was the succinimide.

It occurs as a white crystalline powder, soluble in water; chemically it is the imidosuccinate of mercury, being obtained by a combination of succinic anhydride ($C_4H_2O_3$) with mercury. There is no special virtue in this particular salt only in so far as the hypodermic injections of it are said to be less painful than those of the other soluble preparations. The immediate result of an injection is not painful, but after an hour or two the patients complain of a hot burning sensation at seat of injection; this lasts for an hour or two and often longer, being gradually replaced by a heavy, dull ache in the part. At the point of needle entrance a hard nodule varying from a small marble to a walnut in size invariably appears. These persist for months, and are painful on pressure. If proper cleanliness has been observed no bad effect is produced by this nodulation, it being gradually absorbed. In over 150 injections I have had only one abscess and this promptly healed after evacuation.

I well realize the fact that three cases do not make history, but as lesions such as my cases represent are happily rare in Stamford, I take pleasure in presenting them for your consideration.

Two of the patients under the old treatment would by now probably have passed to join the great silent multitude, as inanition from inability to swallow was becoming a most distressing symptom. The other patient would have lost her eye, had the disease not been arrested when it was.

CASE I.—Mrs. P., age thirty-eight, American, housewife, previous health good. No tuberculous history on either father's or mother's side.

The early part of May, 1908, the trouble commenced with a blocking of the tear duct and shortly after the first sore appeared on her face. Slowly the lesions progressed, one healing, another breaking out, as is the nature of this disease. During this time she was being treated by competent hands, but no improvement was had, the disease steadily progressed.

On January 7, 1909, when I first saw her, the condition was as follows: The right side of face was well marked with reticulated and puckered scars, one ulcer on the eyelid, one on bridge of nose, one under eye on cheek, and four further ones at different points on cheek near nose; the ulcers were covered with a dirty, black looking scab, closely adherent to underlying surface. The whole area was oedematous and angry looking and extremely painful and tender to the touch. The size of the ulcerations varied from the size of end of lead pencil to size of a quarter. Considering the history of the case, its chronicity, and progression for eight months, even under proper surgical treatment, there was but one diagnosis possible, namely, scrofuloderma or tuberculous cutis. The treatment was initiated by a thorough curetting under cocaine of all the sores; the one on eyelid was found to extend down to and involving cartilage, the one on bridge of nose had burrowed to nasal bones, which had become involved and were partly destroyed, and to judge by depth that probe was admitted, even an extension into frontal sinuses was not out of the question. The material curetted out consisted of pus, blood, and broken

down tissue of a cheesy consistence, the nose ulcer containing dead bone. After curetting, the sores were cauterized with pure carbolic acid and completely filled with a ten per cent. iodoform petrolatum and kept full. The whole area was exposed to the x ray for eight minutes; this was repeated on January 11, 14, 18, 21, and 25. On this day patient presented a new sore. This was opened, curetted, cauterized, and the previous treatment continued on January 28th, February 1st, and 3d. On this day, nearly a month since treatment was initiated, the affected area was somewhat improved in looks, the sores looked clean, the tumefaction was less, and no more pain. It might be well to say here, that invariably in these lesions the pain disappears under the exposure to the Röntgen rays. On the whole, the condition was improved but far from healed.

On February 3d, the patient was given the first injection of succinimide of mercury and put on the mercurous iodide, gr. $\frac{1}{4}$, three times a day, after meals.

Every other day from February 3d until March 3d, she received an injection of the succinimide, gr. $\frac{1}{5}$, and x ray treatment every fourth day, and on this day, just one month after the mercury treatment was begun, the sores were completely healed and have stayed healed to this date, over seven months later. Two more x ray treatments were given a week apart, and the injections continued every fourth day until April 1st, when all treatment was discontinued and patient discharged as cured. Truly this case gives one something to ponder over.

CASE II.—This case is of interest, first, as showing the extreme chronicity of the disease, and second, as showing an extensive mouth ulceration healed in a comparatively short time under the mercury treatment, after failure with every other form of treatment in trials extending over years.

This patient, a young woman, Irish, aged twenty-seven, shop worker, previous health and family history good, came under my observation in August, 1905. She was literally covered with the lesions of scrofuloderma; no part of her body was free. The disease had commenced about four years before and gradually extended until sores were everywhere. Dr. Fox and Dr. Bulkley had had the patient under treatment, and by them the diagnosis had been made. As is usual in these chronic cases she had drifted from one man to another, but in spite of everything that was done the disease steadily progressed, one sore healing up, another place breaking down. Under chloroform a deep curetting of all the sores was made, holes filled with ten per cent. iodoform petrolatum, and patient put on syrup ferrous iodide in large doses and the emulsified fats.

I look back over the four years I have had this girl in hand with dread; the times and times it was necessary to anesthetize her to clean up the repeated crops of sores, and all to no purpose, the crop was perennial. The agony endured by her beggars description, for never since I had known her until May 6th of this year had she been free from an active lesion. The body sores gradually lessened in number, probably because the healthy skin was becoming less; but about a year and a half ago an ulceration of the mouth began which defied all attempts made to heal it. The x ray diminished the pain, but the ulceration kept spreading until on February 25th her condition was as follows: She had two sores on the left shoulder and three or four more on different parts of her body; an ulceration of the inner side of the left cheek, extending down to and up and onto both alveolar processes, in some places exposing the bone; the left tonsil and pillars were covered, the ulcer extending along the soft palate to the uvula, which was partly destroyed; the posterior surface of the pharynx was green and sloughy as far as could be seen; in fact, the most extensive ulceration of the tissues of the mouth I have ever seen. The submaxillary and postauricular glands were very much enlarged and painful. The state of inanition was extreme, for weeks previous she had only been able to swallow liquids and this was fast becoming impossible. It certainly looked as though her troubles would soon be over forever. On February 25th, the first injection of succinimide of mercury was given her and repeated every other day, a boracic acid spray was used every hour and the protoiodide given four times a day, and nourishment taken as best she could.

Improvement was had very soon, in two weeks the whole ulcerating surface had cleaned up, the broken, ragged, and undermined edges were showing granulations and rapidly taking on a healthy look. The treatment was continued

uninterruptedly every other day until May 6th, when the ulcerations were completely healed and also the body sores, leaving nothing but the scars. This was the first time in over eight years that this girl had been free from an active lesion of some kind.

I am glad, in view of the phenomenal rapidity,—a little over two months,—in which the lesions healed, that the diagnosis of this case rested not alone on my shoulders, but two such names as Fox and Bulkley are sufficient guarantee that the disease was scrofuloderma and the ulcerations tuberculous.

CASE III.—My third case presents a tuberculous ulceration of pharynx, tonsils, and hard palate. The disease was primary in the tonsils, ulceration commencing on their upper and posterior surface with a general enlargement and extrusion of the organs to such an extent that they became adherent to posterior wall of pharynx, and united in the centre.

The patient was a young woman, age twenty-four, Polish, domestic, previous history good, had always enjoyed good health except for an attack of patellar bursitis. On July 10th she presented this picture: The tonsils had united in the middle of pharyngeal vault, the tops had sloughed off, leaving an opening behind the uvula through which the air passed, the lower part of pharynx was pretty well blocked, making the swallowing of solid food impossible. Her general condition was poor, her throat having been sore about four weeks, during which time she could take very little nourishment. On July 16th at the hospital I removed the tonsils, using scissors and the Gottstein curette to free them from pharyngeal wall. It was the hardest tonsilomy I ever have had to do. When her throat could bear examination I found the posterior pharynx covered with an ulceration up and down as far as could be seen. The stumps of the tonsils healed very readily but the ulcers on the pharynx persisted and would not heal. The succinimide was not given, as I had a purpose in view, but patient was put on the usual regimen of iodide of iron, raw eggs, and milk. Very little progress was made toward healing until September 6th, when a new lesion appeared in the centre of hard palate.

Patient was at once started on the injections of succinimide of mercury, gr. 1/5, given the protoiodide, gr. 1/4, three times a day. Within a week a difference was noticeable. In three weeks the posterior lesions were all healed, leaving whitish scars. Patient has gained twelve pounds in the past three weeks. The last lesion is not quite healed but very nearly so, and although the case is too recent to present the patient as one of permanent cure, yet it would seem that in view of the previous cases and the rapidity with which improvement began after the mercury treatment was inaugurated, that this one also teaches a lesson.

As before stated, three cases do not make history, but I am convinced from my experience in these cases that in the superficial tuberculous lesions we have in mercury an agent whose action is almost specific.

40 SOUTH STREET.

REPORT OF A CASE OF URÆMIC AMAUROSIS FOLLOWING SCARLET FEVER.

By ALBERT C. SAUTTER, M. D.,
Philadelphia.

The case which I wish to report was one seen in the early spring of 1908, in consultation with Dr. Samuel S. Woody, chief resident physician of the Municipal Hospital, Philadelphia. The clinical notes of the case, for which I am indebted to Dr. Clement, the resident physician at the time, and which I shall read in abstract, are as follows:

CASE.—The patient, a boy thirteen years of age, was admitted to the Municipal Hospital on February 22, 1908, with signs of a fading rash on the trunk and with peeling of the skin from the feet and hands. Examination of the throat

disclosed a thin, greyish exudate on the tonsils, uvula, and gum margins. Smears made from this exudate revealed the diphtheria bacillus.

A diagnosis of scarlet fever in the desquamating stage, with diphtheritic involvement of the mouth and fauces was therefore made. Five thousand units of antitoxine were administered on the day of admission, the same dose being repeated on the following day, but in spite of specific therapy, the condition of his mouth and throat grew steadily worse, and on the morning of the 26th, one ear commenced to discharge.

The general condition of the patient, however, remained good until the evening of the same day (the fourth day after admission), when he was seized with a generalized convulsion, which within an hour was followed by two more convulsions. The boy now sank into a state of collapse and stupor, the pupils being widely dilated and not responsive to light. The patient seemed to be blind and desperately ill.

On the 27th, another generalized convulsion occurred, the face being included. Examination of the urine showed albumin and casts.

The symptoms were ascribed to a uræmia complicating a postscarlatinal nephritis and the usual therapeutic measures administered. Meningitis could be excluded. The condition of his mouth now was extremely bad, the entire dorsum of the tongue being covered with necrosed tissue and many of the teeth being loose. Blindness and stupor, alternating with drowsiness, continued, and on the 2nd and 3d of March, respectively, there was another generalized convulsion. The urine now was very dark, contained 2.75 per cent. albumin, many hyaline and finely granular casts, and erythrocytes.

Following the convulsion on the 3rd of March, a gradual improvement set in, consciousness slowly returned, and by the 8th of March he was able to perceive light. On March 12th he could see the white cap on the resident's head, and after a good deal of difficulty told how many fingers were held in front of him. The condition of his mouth was somewhat better, but a thin layer of exudate still covered the tonsils and uvula. During the succeeding weeks the patient's general condition progressively improved, improvement of vision, however, being less pronounced. On April 4th, the resident made the following notes: "General condition good; condition of nose, throat, and ears good; examination of heart and lungs negative; still running positive albumin; patient can see large print."

Two days later, I first saw the patient and made the following additional notes: "Ocular motility undisturbed, no palpebral or conjunctival oedema, conjunctivæ pallid, pupils equal to about 5 mm. in diameter, irides react equally to light, accommodation and convergence, media clear, disks grayish red in color with slightly veiled margins, veins and arteries somewhat tortuous but of normal calibre, no perivascularitis or swelling of the nerve heads, slight pigment disturbance throughout fundus; refraction, low hypermetropia."

The history of the case suggested an uræmic amblyopia, and the prognosis regarding some further recovery of vision under the usual antinephritic measures therefore did not seem altogether unfavorable. At my request, the boy was to see me in my office for a further examination after his dismissal from the hospital, which occurred shortly afterward. He failed to present himself, however, until some weeks later. His general condition then (May 20th) was considerably better, but he had noticed little improvement of vision the past two or three weeks. Vision in OD was found to be 5/60; in OS 5/45. Type No. 2: read with difficulty. Vision could not be improved by lenses. There was no evidence of accommodation palsy. The pupils were equal in size, the reactions to light, accommodation and convergence normal. The fundus presented about the same appearances as noted before, except that possibly the vessels were slightly reduced in size, the disks still being of good color, with slightly veiled margins.

The first examination of the visual fields showed contraction of the form and color fields with a large paracentral absolute scotoma just below the fixation point in each eye, only a narrow strip of form vision remaining in the lower peripheral field. A second examination made three days later, and all other subsequent examinations, revealed a complete, symmetrical, sectorlike defect, subtending an angle of about 45° in the inferior half of each field. Although the boy seemed intelligent for his age, I was rather disposed

*Read before the Section in Ophthalmology, College of Physicians of Philadelphia, March 18, 1909.

to doubt the results of the first test, principally because it was the first examination. There was no central scotoma.

Examination of the urine showed a specific gravity of 1.012, marked trace of albumin, granular casts, urea one per cent, no sugar, the quantity voided in the twenty-four hours (according to the mother's statement), being about two pints.

Despite treatment comprising mixture Basham's mercury, and later the iodides, vision and the visual fields remained nearly the same, vision at no time exceeding 5/45 in each eye. A sinus examination made at the Nose and Throat Dispensary of the University Hospital, by Dr. Singer, proved to be negative.

Albumin and casts were present in the urine until June 20th, when the patient disappeared from observation, nothing being ascertained as to his subsequent condition until last autumn, when Dr. George S. Crampton informed me he had seen the boy on one occasion and found a vision of 20/70 in each eye. Since then, all efforts to locate the patient have remained fruitless.

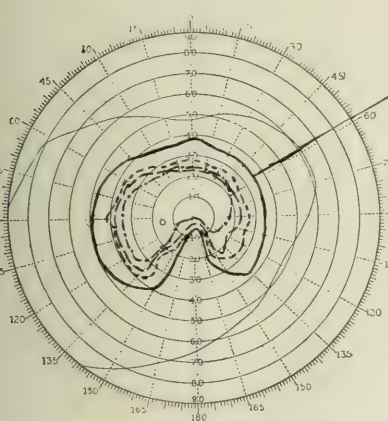
Uræmic amaurosis, one of the rare complications of nephritis, is perhaps most often found (according to Groenow) as a complication of a postscarlatinal

tion of the retinal veins; in one of Reimer's cases, the chorioid appeared hyperæmic and there were yellowish spots about the disk. In Dobrowsky's patient, the veins were dilated, the disks dirty white, surrounded by an edematous area. In a case which Litten cites, there occurred with each uræmic attack swelling of the disk with amaurosis; in the latter, an albuminuric retinitis was likewise present.

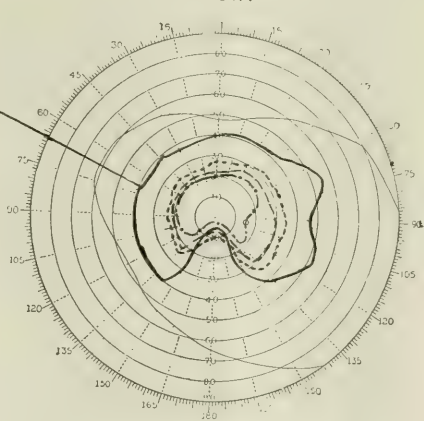
In most of the cases, although absolute blindness existed, the irides responded to the light stimulus. In Flögl and Pitsch's cases, there was no reaction to light. In Förster's and Reimer's cases, the pupils were wide and the reactions sluggish. (Graefe at one time doubted the uræmic origin of scarlatinal amaurosis and considered the retention of the pupillary light reflex a characteristic symptom distinguishing it from a true uræmic amaurosis.)

All of the reported patients who had a scarlatinal uræmic amaurosis and survived the constitutional

LEFT



RIGHT



nephritis. Cases illustrating this association have been reported by Ebert, Monod, Henoch, Löb, Becher, Förster, Power, Reimer, and others, most of these cases being published between the years 1868 and 1880. The histories of these cases resemble each other very closely. Almost invariably the amaurosis occurred during the period of desquamation, being preceded and often accompanied by uræmic manifestations, convulsions, vomiting, stupor, headache, etc. As a rule, blindness set in suddenly, involved both eyes, and was absolute. In the majority of cases, vision returned to normal within from twenty-four to seventy-two hours. In one of Reimer's cases, blindness in one eye endured until the patient's death twenty-six days later. In Förster's case, full visual acuity was not regained until the sixteenth day. In Power's case, the patient remained blind four days, normal vision not occurring until sixteen days later. With few exceptions, the results of the fundus examination was negative. In one of Ebert's cases, Graefe noted slight dilata-

tion apparently sooner or later recovered full visual acuity. In the fatal case which Reimer reports, there was only temporary improvement of vision in one eye, the pupils being wide and the reactions sluggish, blindness persisting until the patient's death.

Ebert, Flögl, and Litten refer to cases where vision returned and yet the patients succumbed to uræmia. Litten also cites three cases of temporary amaurosis occurring during a postscarlatinal nephritis without fundus changes or symptoms of uræmia. In Förster's case, in Golthammer's two cases, and in my own, there was uræmia, without the presence of cedema. Golthammer's cases terminated fatally.

That uræmic amaurosis may also complicate acute exacerbations of chronic interstitial or chronic parenchymatous nephritis, with or without signs of albuminuric retinitis is well known. Occasionally, transient attacks of dim vision may precede the attack. The retention of the pupillary light reaction is generally regarded a favorable prognostic sign,

indicating a lesion beyond the primary optic nerve centres and consequently excluding a lesion in the optic nerves.

Permanent amblyopia, as a result of uræmic amaurosis, has seldom been observed. Leber holds the view that when vision is permanently impaired, the condition is either complicated with an albuminuric retinitis or with a subsequent atrophy of the optic nerve. Rothmann says when vision returns, the optic nerve is found completely intact or only degenerated peripherally. Transitory abnormalities of the visual field have been observed by Schmidt-Rimpler.

Cases of uræmic amaurosis have rather frequently been reported in connection with pregnancy, in particular with puerperal eclampsia. Whether amaurosis, or even the so called albuminuric retinitis of pregnancy occasionally complicating these conditions, should, however, always be considered primarily of uræmic origin, or at times the result of a general toxæmia peculiar to the pregnant state, is not definitely known. In these conditions, too, sometimes without signs of any renal disturbance being present, there may occur more or less permanent visual impairment, with either negative fundus findings or with pallor of the disk, or signs of optic neuritis, as the only fundus abnormalities associated with contracted fields, loss of central vision, homonymous defects, or a loss of a portion of the visual field with a tendency, as Hiram Woods writes, "decidedly toward permanent involvement of the lower quadrant."

Whatever the nature of the active circulating toxine, the effects on the ocular apparatus, at least, from a clinical standpoint, in many ways resemble those produced by the uræmic poison.

There has been considerable discussion as to whether the transient blindness of uræmia is of cortical origin or due to a peripheral lesion involving the optic nerve or ganglion cells of the retina. Graefe laid particular stress on the retention of the light reaction and placed the lesion accordingly beyond the corpora quadrigemina, but cases since reported, in which there was no reaction to light, and a few cases in which the condition was complicated with visible peripheral lesions occurring synchronously with the amaurosis, suggest that under certain circumstances there may follow involvement of the peripheral ocular structures, optic nerve, or ganglion cells of the retina.

The lesions have been variously ascribed to the effects of a transitory cedema, to vasomotor disturbances, and to the direct action of the uræmic poison upon either retina, optic nerve, or cortical cells. The latter hypothesis (the theory of uræmic intoxication) is perhaps the most plausible one. While the results of post mortem examinations have so far not led to any conclusive facts as to the nature or localization of the lesion, clinical evidence is in favor of attributing the condition in general to a cortical affection, including uræmic blindness among the other cortical symptoms of the uræmic state, hemiplegia, epileptiform convulsions, deafness, etc. Another factor in favor of such a hypothesis is the occasional occurrence of a typical homonymous hemianopsia. Pick describes a case of uræmia with convulsions in a forty-four year old woman, in

which a uræmic amaurosis was followed by a left sided homonymous hemianopsia. He also discusses three similar cases observed by Schnabel. Pick's patient came to autopsy, the examination disclosing an area of softening in the right, second, occipital convolution. He is not certain, however, that the lesion was the direct consequence of the uræmic poison. Löb reports a case of hemiplegia complicating a postscarlatinal uræmic amaurosis, the paralysis persisting, whereas the failure in vision was only transitory.

In my own case, while the amaurosis was probably of cortical origin, the ensuing amblyopia, with the symmetrical sectorlike defect in the lower field of vision, is suggestive of an additional, more peripheral lesion, perhaps at the chiasm. That the toxine peculiar to scarlet fever or diphtheria may have contributed to bring about this complication can, of course, not be disproved.

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 1421 LOCUST STREET.

TONSIL REMOVAL.

*A New Method with Instruments.**

By ERNEST V. HUBBARD, M. D.,
New York.

More experience must be had before the last word can be written on the comparative merits of tonsillectomy and tonsillectomy. A year or more ago I questioned the wisdom of the entire removal of the tonsils in every case presenting evident need of some operative procedure. It would seem the part of conservative surgery to believe that, speaking broadly, the least grave operation which will accomplish a desired result is the one to be chosen.

If there are small tags of ragged tonsil tissue pendant, inviting a faucial infection of one kind or another, the simple removal of these offenders may suffice to prevent all further trouble. Such cases are common, and the patients are easily cured by

*Read before the West End Medical Society, March, 1909.

any of the guillotine operations (i. e. tonsillotomy).

But (and here many a novice may be readily deceived), the presence of just such irregularities in the surface of the tonsil should be a danger signal; while such outgrowths may have no further significance than the risk due to their own existence in the throat, they more often indicate extensive involvement of the crypts of the tonsil; which crypts, on investigation, will be found to be diseased, presenting to an inquiring probe tortuous ragged channels, containing more or less pus, often extending completely through the tonsil to its capsule externally.

Of the unwisdom of permitting such tonsils to menace the health of their possessor, it is not necessary for me to speak.

For convenience we can consider the tonsils as presenting anatomically three types: 1. Absent tonsils. 2. Normal tonsils, requiring no interference on the part of the surgeon. 3. Pathological tonsils; this latter group may be subdivided to hypertrophic and atrophic—the atrophic type being usually a later stage, after repeated attacks of destructive purulent tonsillitis.

Of absent tonsils. one may say, with the Irish: "One of the ways in which tonsils may be present is by being absent." Such cases are rare; they do occur.

Of the physiology of the normal tonsil we know but little. We commonly regard it as a filter, holding back invading bacteria. It is well to pause before robbing every diseased throat of this protection.

What else does the tonsil do? Has it some as yet unknown function to perform in the human economy. Undeniably the tonsil is a gland, and what may be of significance, it is a ductless gland. Granted that these mysterious glands are embryologically and structurally akin—analagous—to the other ductless glands which are known to have internal secretions, it is fair to ask whether they may not be functionally akin,—homologous,—also. There is no structure in the living body that has not at some time in the development of the organism served some useful purpose, as is shown by studies in phylogeny and ontogeny—a brilliant example of which is the human vermiform appendix, now fallen from its high estate. Pathological tonsils, from the point of view of operative surgery, are either hypertrophic or atrophic. The latter are an end product, as I have said, following repeated attacks of destructive purulent tonsillitis or diphtheria. Rarely do they require attention. They are shrivelled, lie flat, and give no symptoms.

We are chiefly concerned with the hypertrophic variety. Such tonsils are found protruding to a greater or less degree into the throat, obstructing respiration and deglutition, and interfering with speech, or they extend externally toward the superior constrictor muscles of the pharynx. Those protruding internally are easily removed either by a competent tonsillotome or by a cold wire snare. No dissection is needed; the small remaining stump of tonsil tissue cicatrizes, and our work is complete. I believe there are many such cases, where the radical operation for tonsillectomy is not indicated, and results entirely satisfactory to both patient and surgeon, follow tonsillotomy.

The second variety of hypertrophied tonsils, those that often are called "submerged," now claim our attention. One is almost tempted to say that there are as many methods of attacking them as there are surgeons. There are the electrocautery of Pynchon, the dissection method of Ballenger, and various tonsillotomes, as the Mackenzie and the Mathieu; the cold wire snare of Bosworth and its modifica-

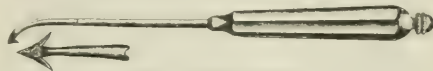


FIG. 1.—Tonsil harpoon.

tions, such as those of Coffin, Moseley, Hurd, Yankauer, and the present writer. The aim of us all, I feel, is a thorough, workmanlike operation, with as much expedition as is compatible therewith. The simplest mechanisms and the least bloody field are aids to this end. I gravely question the wisdom of so considerable a procedure as dissection of the entire tonsil and its capsule as advocated by Dr. Ballenger. Its dangers, those of a prolonged operation, of hæmorrhage, and of subsequent cellulitis, need not be invited. The electrocautery designed to diminish hæmorrhage, often fails of its purpose. The tonsillotome is usually inadequate, and often powerless, even with the aid of counterpressure and a tenaculum, and separators of one kind or another, to remove these submerged tonsils. The various cold wire snares remain;—properly used, and in expert hands, they are now the first choice for our purpose.

The instruments here described I have used in over one hundred and fifty tonsillectomies. I may be permitted to say that I have had not one case of postoperative hæmorrhage, not one case of infection. In all but phlegmatic adults, I insist on general anesthesia, with the patient in the laparotomy position, to be followed by rest in bed. To have them upright I think only adds to the strain on the heart. I have found with these four instruments that the submerged tonsil is robbed of its terrors for the surgeon, and that in the large majority of cases a very sore throat for a few days is the sole sequel.

For long I have sought to devise some instrument that will adequately raise the tonsil from its bed, and hold it securely while the snare is adjusted and made to grip. The tonsil harpoon (Fig. 1) is so fashioned that I find it will retain its hold even in friable



FIG. 2.—Tenaculum.

tonsils, where forceps and various forms of tenacula tear out. Much depends on how it is inserted. Its components are: 1. The handle, octagonally shaped and tapering to a fine hollow rod. 2. The stylet, which binds. 3. The harpoon and handle by a fine screw, thin adjacent ends dovetailing for the sake of added strength. At the curved portion the instrument is flattened and slightly broadened, greatly increasing its self retaining power. The curve of the harpoon is accurately measured so that the point of the instrument easily emerges into the patient's pharynx.

The tenaculum (Fig. 2) can be introduced first,

lifting the tonsil against the point of the harpoon as the latter is inserted. The harpoon point should be always directed downward and inward toward the median line of the throat. The handle is to be firmly grasped, and a slightly rotating movement facilitates the penetration of the point through the tonsil. One must bear in mind that transfixion is the object, after which, by gently withdrawing the instrument the blades of the harpoon (kept shut as a dog's ears laid flat to his head, during insertion) automatically spread to their capacity, and permit the surgeon successfully to raise the tonsil from the pillars of the fauces. In case, through misapplication, undesired tissues are included—as, for example, if the point should transfix the palatopharyngeus muscle—the handle is removed by turning the screw head of the stylet at the rear end. Then with a sponge holder or artery clamp the tip of the harpoon is caught and drawn through, leaving a small hole which will quickly heal. The parts of the harpoon are easily reassembled and the instrument is again ready for use. The handle is sufficiently small to permit the loop of the snare to be passed over it, thus avoiding the necessity of threading the loop and holding the snare in addition, as in the instruments having scissors shaped handles. With this single bar handle the snare loop can be removed and replaced at will.



FIG. 3.—Tonsil snare.

The tonsil snare (Figs. 3 and 4) is modified from that of Dr. Moseley. The changes made are: A stylette runs through the cannula, and in its end are two holes through which No. 10 steel piano wire is threaded. The hand screw is then turned and the wire binds itself as the stylet sinks back and disappears into the cannula. Of its own accord, the wire loop assumes the requisite shape, though in some instances, where a very round tonsil is to be removed, it is well to widen the loop a trifle with the fingers. The mechanism is precisely that of the Sajous nasal snare. I have found the following advantages in using this instrument: 1. Ease and rapidity of threading the wire. 2. Absence of sharp ends of wire sticking out and often wounding the fingers of both nurse and surgeon, which may well mean escape from infection, as one is often dealing with septic conditions. 3. The power of the instrument is greatly enhanced, due to the tensile pull being directly from the end of the stylette, when the loop is shortened, and not through some inches of flexible yielding wire. Thus, in the majority of cases the wheel or hand screw is unnecessary, simple closure of the hand sufficing to cause the loop to cut through the tissues. The tonsil comes from the throat transfixed on the harpoon. 4. Only four inches of wire are used for each loop instead of twelve. 5. The instrument can be opened

again; the wire readily slides out of the cannula; it can then be shaped to its loop form and used repeatedly in this way. 6. One instrument only is needed, instead of a right and left snare. In cases where one desires a slow removal through fear of hæmorrhage, the wheel enables one to regulate the speed at will. Rapid removal equals the speed of the tonsillotome.

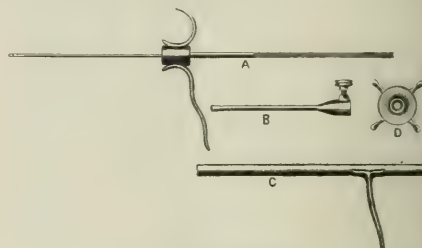


FIG. 4.—Tonsil snare.

The tonsil scissors (Fig. 5) can be used where the adhesions require separation. They cause less bleeding than knives and are so curved as to fit around the tonsil as they cut. I often use them for blunt separation.



FIG. 5.—Tonsil scissors.

Except in patients known to bleed freely (though not necessarily to be dignified as hæmophilics) I make it a routine to practice the rapid method of tonsil removal. Every minute unnecessarily added to anæsthesia is an added menace to the patient.

The instruments are made by W. F. Ford & Co.
11 EAST FORTY-EIGHTH STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XC1.—What is your experience in the therapeutic use of thyroidal feeding? (Closed October 15, 1909.)

XCII.—What are your views on the open air treatment of pneumonia. (Closed November 15, 1909.)

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Answers due not later than December 15, 1909.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal.

NAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$-5 for the best essay submitted in answer to question XC has been awarded to Dr. M. P. Ferstler, of Brooklyn, whose article appeared on page 861.

PRIZE QUESTION XC.

THE TREATMENT OF TYPHOID FEVER.

(Concluded from page 969.)

Dr. Frances Bradley, of Atlanta, Ga., says:

The treatment of typhoid varies with the patient and surrounding conditions. Given a competent nurse, plenty of water internally and externally, and the proper diet, a typical case of typhoid ought to recover. But, unfortunately, the irregular type often confronts us, with a poor nurse, unmanageable surroundings, and consequent complications. The skilful physician will resist the temptation to dose his typhoid patients. A diet that taxes the intestines, or baths so cold that the horror of one merges into dread of the next, defeats the mainspring of the treatment, absolute rest of body and mind.

If the diagnosis has been made early, the patient should have his hair cut at once, if long, be put to bed, and allowed no physical exertion. Even turning in bed should be done by the nurse. A thorough cleansing of the intestinal tract should be secured, avoiding violent peristalsis, small doses of calomel followed by castor oil will do the work effectually. The mouth should be washed often with boric acid solution, and the patient urged to drink much water, preferably lithia, though water acidulated with lemon, orange, or grape juice is most grateful to a foul tasting mouth. Frequent sponging with or without alcohol and tepid water will not only keep a restless patient quiet and comfortable, but will reduce temperature from one to one and one half degrees, with none of the untoward difficulties of cold tubbing. This sponging should last from fifteen to thirty minutes, according to circumstances. If possible the part sponged should be exposed to the air, sponged copiously, and left to dry uncovered. Though if patient shivers and seems unduly chilled the bath may be continued under a light woollen blanket. The night sponge should be followed by a gentle but thorough rub-down with cocoa butter or an agreeable preparation of lanolin, thus securing quiet, restful sleep. An ice cap to the head will often prevent cerebral excitement.

Unless there is good reason to expect ulceration of the rectum, which is rare, the lower bowel should be washed out night and morning with two quarts of the same solution used for the mouth, or normal saline substituted. After the crisis is past and the patient needs building up, one ounce pure cotton seed oil is added to the morning enema, the oil thrown into the tube and shut off by stopcock before the bag is filled with water. This is to be a so called high enema, introduced ten to twelve inches by soft rubber catheter, and patient urged to hold as long as possible. For abdominal pain and tympanites the rectal tube, oil of turpentine stupes, or oil of turpentine by the mouth will usually be sufficient.

As to diet, the main object is to avoid all foods requiring intestinal digestion. Fight shy of milk,

sugars, and starches. Give gelatin, thoroughly boiled, in the form of fruit jellies, or in broth; egg albumin with fruit juices, orange, lemon, pineapple, or grape. These may even be partially frozen into a frappé and fed very slowly to a most grateful patient. Whey may also be given, but never the casein of the milk. Beef juice extracted from a quickly broiled steak and served in a hot cup with a pinch of salt will often appease the wrath of a rebellious patient and has staying qualities which the lighter foods lack. Many patients bear beef, chicken, or mutton broth well. Nourishment should be given every two hours during waking hours. After the temperature has returned to normal, dry toast with the juice of broiled chop or steak, milk toast, kumyss, soft eggs, boiled onions, okra, snap beans, asparagus, baked apples, and custards may be allowed, still avoiding sugars and starches till safe to risk intestinal digestion again.

The secret of success in diet of convalescent typhoid is simplicity. Never tempt patient with a variety of dishes. Good ice cream is a perfectly good luncheon if eaten slowly and alone, but makes a dangerous dessert to top off, however light, a meal.

The patient must remain in bed one week after normal temperature is attained.

Only the treatment of typical cases could be touched upon in such limited space. The alert physician is continually on guard for complications even in mild cases. Perforation, of course, requires prompt and skilled surgery. Hæmorrhage may be met by cessation of food, baths, and every disturbing element, $\frac{1}{8}$ to $\frac{1}{4}$ gr. morphine to quiet fears of patient and reduce all muscular effort. Adrenalin, ice, or ergot are the best dependents for effect on vascular system. Bed sores should be prevented not cured. Change of position and proper care of skin must be insisted upon from the beginning of attack.

Only a properly trained nurse may be relied upon to protect the family from contamination, or the patient from reinfection. Towels, bedding, etc., should be kept under water till boiled. All excreta must be disinfected with chloride of lime or carbolic acid, and scrupulous cleanliness should be observed in every detail of the sick room.

No case of typhoid is treated to a finish till its source is run down and out.

Dr. J. F. Lescale, of New Orleans, states:

I treat typhoid fever by following the principles of rest to the diseased organs and elimination of bacteria and toxins from the intestinal canal. I keep from unnecessary therapeutical interference and discard entirely all so called intestinal antiseptics. I do not tax the diseased intestines to do any digestion. I rely more on the elimination of fever producing matter than on any other temperature reducing methods.

I accomplish these results as follows: First in importance is to diagnosticate the disease as soon as possible. Usually a probable diagnosis should be made on the first visit, to be verified within one to five more days. Meanwhile I use only predigested liquid foods, of which we have several excellent preparations from our leading drug houses. I prefer those containing mixed diet and alternate them

as best to please the patient. They may be given cracked ice advantageously. I positively exclude all else but the little medicine that may be used and water, which I order to be given frequently in small amounts. I order at once, in the first week only, a calomel purge followed by an ordinary enema, making sure that the bowels are well emptied. I follow this with my favorite "typhoid medicine," castor oil. I give of that from one fourth to one teaspoonful every two to four hours, according to results. My aim is to increase the quantity and number of stools in a mild way in proportion to their smell, and to the disease appearance and temperature. I absolutely condemn milk in typhoid, it must be poorly digested in a weak stomach and pass to the diseased intestines, which are unable to do their share of digestion, in a condition most favorable to bacterial growth. I never check loose bowels in typhoid and that never occurs where proper elimination is followed. I thus have accomplished rest and elimination as much as can be done, and have kept the temperature low. I keep ice bags to the head for a temperature above 102° F., or even when lower if agreeable to the patient. I never use cold baths, but I do use cold sponging. Cold baths are objectionable to most patients, will often do more harm than good, and are unnecessary with this method of treatment. I have seen patients beg pitifully not to be placed in the bath, and the treatment in these cases appeared to me cruel and unnecessary had the treatment as outlined been followed. Sponging is always cooling and invigorating, especially with the addition of alcohol to the water, but not used suddenly cold. I order it for any temperature of 103° F., or over, the water to be gradually cooled to not lower than 70° F.

Results: I have treated in private practice nearly two hundred cases in this manner without a death or bad after results. A large majority of my patients have, after the first week, a temperature under 102° F. and are convalescing as early as the eighteenth day. Compared to patients "more highly nourished" mine lose less in weight and strength and only require one week of convalescence. Loss of hair, of memory, stupor, and the like are practically unknown in patients treated by this method from the beginning.

I wish to compare this treatment with that of yellow fever. Many New Orleans physicians in past years have lost from twenty-five to seventy-five per cent. of their cases of yellow jack by doing plenty for their patients and not neglecting them. Of late years many New Orleans physicians can boast of hundreds of cases without a death by adopting the cardinal principles of yellow fever treatment: Purgation, urination, perspiration, and starvation, for a few days. With this latter treatment yellow fever in the ordinary healthy is not as fatal as measles.

This yellow fever treatment is somewhat analogous to my typhoid treatment in principles, the differences in time and organs affected call for a variation of treatment, yet one will readily recognize practically the same principles followed in both.

The necessary prophylaxis as to stools, etc., should be followed also.

Correspondence.

LETTER FROM LONDON.

Proposed Regulation of the Right to Give Anæsthetics.—Hospital Improvements.—Caisson Disease.

LONDON, November 2, 1909.

An important meeting took place last Tuesday of the Medical Society of London to discuss a paper read by Dr. F. W. Hewitt on The Need for Legislation in Regard to Anæsthetics and the Lines upon which it should Take Place. In opening his address Dr. Hewitt, who is anæsthetist to the King and consulting anæsthetist to the London Hospital, suggested that the importance of the anæsthetic in surgical operations was not sufficiently appreciated. He referred to the large number of deaths due to anæsthetic drugs which had occurred during recent years, and submitted that in order to restore the public confidence, which had been considerably shaken by these unfortunate accidents, certain reforms were urgently needed. Dr. Hewitt pointed out the present unsatisfactory state of the law in regard to anæsthetics, and emphasized the fact (which is probably not known to most people) that there was no legal restraint upon any person, qualified or not, who chose to administer an anæsthetic drug such as chloroform, ether, or gas. He argued that, as, owing to the administration of anæsthetics by unqualified persons, particularly in dentistry, many fatalities had occurred which might have been prevented had a medical man been present, our legislature should be called upon to say who should and who should not be allowed to give such dangerous drugs as anæsthetics. Dr. Hewitt very strongly advocated that dentists who had no medical qualifications should not be allowed to give anæsthetics, and pointed out that in the provinces the majority of dentists who gave gas to their patients were accustomed to work single handed, a condition of things which he contended was constantly fraught with danger. He urged the legal restriction of anæsthetic administration to qualified and registered medical men, and argued that such a restriction would in no way interfere with the interests of the registered dentists, who would thereby be prevented from giving gas, as the new system would tend rather to raise their professional status and to free them from the present unsatisfactory and dangerous practice of single handed anæsthetizing and operating. It would also, he thought, strike a decisive blow at quack dental practice, and so greatly benefit the dental profession. To emphasize these points, Dr. Hewitt quoted a large number of statistics showing that the great majority of provincial dentists had neither partners nor registered assistants, so that, unless they called in medical men to administer anæsthetics, they must either themselves both give the anæsthetic and perform the operation or obtain the assistance of persons, such as domestic servants or mechanics, who were quite unfit to take such responsibilities on themselves. Reference was made, in conclusion, to the General Anæsthetics Bill now before the Departmental Committee of the Home Office, and the lecturer provided members of the medical society with copies of the amended draft, which

states that "the object of this bill is to protect the public as far as possible against deaths arising directly or indirectly from the action of anesthetics." Further, he argued that the three following facts indicated the need for this legislative protection: (1) Anesthetics are for the most part powerful poisons; (2) they are constantly being used upon a vast and increasing scale throughout the country; (3) a considerable and increasing number of fatalities are annually taking place in connection with their administration. The bill therefore proposes to make it a penal offense for any other than a legally qualified medical practitioner to administer any general or local anæsthetic or drug. Mr. Mayo Robson urged that medical men should be taught the giving of anesthetics in a better manner than had hitherto been done. If the bill supported by Dr. Hewitt was passed, great difficulties would arise. Dentists had for many years given gas. They gave it extremely well and with few fatalities. He considered that a duly qualified dental surgeon should be allowed to give gas. Dr. Dudley Buxton also contended that the duly qualified dental surgeon was competent to give anesthetics in dental cases.

The chief event of the past week in the hospital world has been the visit of the King to the Norfolk and Norwich Hospital to lay the foundation stone of the new isolation block there; and similarly the chief event of the present week will be his Majesty's visit to the National Hospital for the Paralyzed and Epileptic, in Queen Square, on Thursday next, to open the new extension buildings. These buildings are in the main the result of the recommendation of Sir Edward Fry's committee, which eight years ago advised that further accommodation should be provided for the out patients' department and the nursing staff. The alterations that have been carried out, although including no new wards, provide many useful additions to the hospital premises, notably an up to date nurses' home (in which every nurse will be able to have a well lighted and separate room), new rooms for electrical treatment, an extension of the out patients' waiting hall, a new ophthalmic room, and a new dispensary. The total cost of the extension scheme will be about £10,000.

An interesting series of experiments is being carried out at the London Hospital in connection with the effects of atmospheric pressure on the blood and circulation. It is well known that human beings can bear enormous pressures of air without ill effects, provided such pressure is not put upon them suddenly and the transition to the normal is gradual. Thus the men who work in the caissons are subjected for several hours at a time to an atmospheric pressure several times greater than the normal, but before entering a compressed air chamber they are sent through an "air lock" in which the pressure is slowly raised by air pumps from that of the outside air to that of the caisson. Similarly it has been found that if the pressure is as slowly reduced when it is time for such workers to return to the outer air, no harm results. On the other hand, the sudden extreme rise of pressure or sudden lowering of the pressure is followed by very dangerous or fatal symptoms. At the London Hospital a compressed air chamber has been constructed which is just large

enough to comfortably accommodate a man lying at full length; it has a stout plate glass window, the scanty light from which is supplemented by electric lights within. The chamber is fitted up with apparatus for pumping in air and measuring the air pressure inside as well as a telephone communicating with the outside. The subject of a proposed experiment takes his place in the chamber, the entrance is shut by a tightly fitting door, which is firmly screwed up so as to be air tight, and air is slowly pumped in from without. Observations are then made as to the effect of compressed air at different pressures on the pulse, respiration, circulation, and so forth, of different individuals, and in this way our knowledge of the conditions under which caisson workers do their work and of the "compressed air sickness" which sometimes attacks them is being extended.

Therapeutical Notes.

The Treatment of Lichen Planus.—In a paper read before the Section in Dermatology of the American Medical Association, at the Atlantic City Meeting, June, 1909, Montgomery and Alderson (*Journal of the American Medical Association*, October 30, 1909) declare lichen planus to be a distinct disease, and a constitutional one with manifestations on the skin and mucous membranes. After describing a typical case in which the lichen planus eruption was almost universal in distribution, but gradually becoming less profuse along the extremities, and entirely sparing the hands and feet, the authors speak of the "soothing line of treatment adopted," which was as follows: The patient was given the following:

R Solution of tar (B. P.) ℥xxx;
Solution of lead subacetate ʒiii;
Olive oil;
Lime water, āā ʒii.

M. et Sig.: Use externally.

R Magnesium carbonate;
Bismuth subnitrate, āā ʒv;
Tincture of rhubarb, ʒiii;
Peppermint water, ad. ʒviii.
M. et Sig.: A dessertspoonful three times daily, after eating.

Injections of atoxyl (0.10 gramme) were given for several days, but the condition of the patient showing no improvement, mercuric chloride was prescribed in the following combination:

R Mercuric chloride, gr. i;
Syrup of senna;
W. ter, āā ʒiii.

M. et Sig.: One teaspoonful in a little water three times daily after meals.

Under this treatment the patient slowly and steadily improved for one month when she complained of sore throat and increased itchiness of the face. The dose of mercuric chloride was then increased from 0.002 gramme to 0.005 gramme, and 0.6 gramme of potassium iodide was added to the prescription.

The authors are of the opinion that the disease is a toxæmia produced by some ferment in the alimentary canal.

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THE STUDY OF PELLAGRA IN THE
UNITED STATES.

The study of pellagra seems in a fair way to be prosecuted with great thoroughness in this country, and not all the work appears likely to fall upon Mr. Rockefeller's commission. An important and promising conference on the subject was held in Columbia, S. C., on the third and fourth of this month. A year ago a conference attended by representatives coming chiefly from South Carolina and the neighboring States was held in the same place, but this conference of 1909 was almost national in its scope—indeed, it may be said to have been to a certain extent international, for papers were read from observers residing in several foreign countries. A condensed account of the proceedings is given in *Public Health Reports* for November 12th.

There was a lack of unanimity as to the preeminence of damaged maize in giving rise to the disease, but most of those who took part in the proceedings agreed that maize as a prominent article of diet ought to be avoided in the present state of our knowledge. One writer, Dr. F. M. Sandwith, of London, is reported to have said in his paper that, with regard to Sambon's suggestion that pellagra might be an insect borne protozoal disease, maize bearing the same relation to it as the swamp bore to malaria, he deemed it more correct to say that maize took the part of the mosquito rather than of the swamp.

The officers of the Public Health and Marine Hospital Service were prominent in the conference, and so were other sanitary officials, but there was a goodly representation of dermatologists and psychiatrists, and numerous general practitioners took part in the proceedings. It is said that, in all, about 350 persons were in attendance. Appreciation of the importance of the occasion was shown by the fact that an address of welcome was delivered by the governor of the State of South Carolina.

A committee on permanent organization was appointed, and it reported a constitution for a body to be known as the National Association for the Study of Pellagra. The report was adopted, and the association was organized by the election of Dr. J. W. Babcock as president, Dr. W. A. White and Dr. C. F. Williams as vice-presidents, and Dr. George A. Zeller as secretary and treasurer. It was voted that the first annual meeting of the new association should be held in Peoria, Ill., in June, 1910. Thus there was launched a well organized agency for studying pellagra, a disease recognized in the new association's constitution as a national scourge. We cannot doubt that this mysterious disease, therefore, is sure to be studied thoroughly without loss of time.

VAUDEVILLE HYPNOTISM AGAIN.

Readers of Poe's gruesome tale, *The Facts in the Case of M. Valdemar*, may be able to understand the extraordinary performance of an inexperienced vaudeville hypnotist who recently tried to suggest to the corpse of a victim dead of a ruptured aorta, while supposedly under hypnotic influence, that its heart was still beating. Perhaps the unfortunate performer believed Poe's to be a true story. His innocence and inexperience are also proved by his lack of precautions while trying the well known cataleptic test. He may not have known that it is customary to guard against accident by fitting the subject with a steel harness that removes all strain, but does not impair the theatrical effectiveness of the performance. Very probably the showman believed himself to be gifted with some mysterious power, quite unaware of the purely objective quality of hypnotism. In this belief he is sustained by the ignorance of reporters.

These performances are either fraudulent or very dangerous; in either case they should be forbidden. Our cumbrous system of legislation, however, will require action by forty-six legislatures before the abuse can be universally remedied. It does seem that in the paramount questions of health and sanity Federal legislation should be constitutional, even if it has to reach into the vaudeville house. Is it useless, meanwhile, to appeal to the managers to avoid these shows, so especially demoralizing to chil-

dren? They are as essentially wrong as an exhibition of the effects of alcohol, opium, or hasheesh would be.

THE VALUE OF MCBURNEY'S POINT.

Although tenderness at McBurney's point has been regarded as almost pathognomonic of appendicular inflammation, it has not retained its original importance, because the tenderness is now often referred to the middle of a line extending from the anterior superior iliac spine to the umbilicus. At the present time its actual value is much discussed, in common with various other painful spots, with regard to the diagnosis or as indicating the exact seat of the diseased appendix. One fact is now well known, and that is that the disease may exist without McBurney's sign. The pain, it is true, is often situated in the right iliac fossa, but not at this particular spot, being lower down, nearer the pubic arch; yet it is conclusive. Pressure over McBurney's point not infrequently produces pain at some distant point, as, for example, in the epigastric region or at the umbilicus, sometimes in the left iliac fossa, under the false ribs, or in the lumbar region, and, when this pain is on the left, as has been pointed out by Burkhardt, it does not indicate displacement of the cæcum and its appendix. Then, again, in certain cases, pressure in the iliac fossa may not produce any pain whatever, the painful point being detected only by vaginal or rectal examination. Therefore the absence of tenderness over McBurney's point is not decisive against the diagnosis of appendicular inflammation.

In order to estimate correctly the value of pain in the right iliac fossa, one should first ascertain whether the pain is deep seated or superficial. The latter becomes manifest on the slightest pressure, and is mostly propagated from some point more or less distant from the spot under examination. Hysterical pain assumes much the same character, and is usually complained of in several spots. There is not only an appendicular spot, but there are median, costal, epigastric, and left iliac spots. Importance must, therefore, be attached only to pain produced by local pressure with the finger tip. Apart from cases in which pain at McBurney's point is consequent upon lesions of the abdominal wall, pathological phenomena referable to salpingitis, tubal gestation, ovarian cysts, and ureteral calculi must be considered. Pain in the iliac fossa may also be secondary to lesions of organs situated higher in the abdomen or even in the chest, and in this connection cholecystitis may be mentioned. Long ago Grisolle described what he called "iliac stitch" in pneumonia, and this is quite frequently encountered

in children and occasionally in adults, and has led to a diagnosis of appendicular disease when in reality there was an unrecognized pneumonia.

The question now arises as to what signification may be given to McBurney's point, as well as the mechanism causing the pain and to what deep seated lesion it corresponds. It is asserted that the spot in question corresponds to the appendix; that pressure on this spot is transmitted to the appendix, which retorts by a sensation of pain when it is pathologically changed. Now, in the majority of cases, this is not the case. To begin with, the fact must not be overlooked that the situation of the appendix is most variable, that it changes its position like the cæcum, and that the appendicular body and tip are met with on this or that surface of the cæcum, below or to the inner side of it, the relationship of which with the abdominal wall it is impossible to specify beforehand. The cæcal implantation of the appendix is more stable, and its intraabdominal situation more constant. Lanz's recent researches have led him to the conclusion that the origin of the appendix is almost always if not always at some distance from a painful spot and obviously somewhat below, and, on the strength of this, he advises against attaching too great importance to the classic point of pain.

Kruger comes to the conclusion that, without doubt, certain localizations of the pain enable one to state that, if on pressure it is situated more toward the middle line or a little to the left, if there is an area of pain over the rectus muscle, the appendix probably runs downward, lying somewhere near the promontory or behind the bladder, and the concomitant vesical pain, tenesmus, and pain running down the urethra and felt at defecation will confirm this supposition. If movements of the thigh, especially flexion, are painful, one may suspect that the appendix has contracted adhesions with the psoas or iliacus muscle. If the appendix runs upward behind the cæcum, in the vicinity of the diaphragm, or over the inner surface of the liver, the diagnosis will be made by finding respiratory disturbances and a subcostal painful spot. When the appendix is lying free in the general peritoneal cavity the pain is generalized and vomiting occurs early and is most persistent. Kruger believes that early vomiting indicates that the appendix is in contact with the peritoneum of the main cavity, for it ceases as soon as the focus of suppuration is walled off and becomes localized. The same applies to abdominal distention.

The point of maximum tenderness, when distinctly defined and fixed, affords a pretty good indication of the situation of the appendix, but the area of tenderness spreads as the adhesions become more

extensive. Certain it is that, without carrying the search for the painful area too far, thus incurring the risk of producing a hæmatoma of the mesoappendix, an example of which is reported by Lanz, without departing from an attitude of caution and not neglecting lightness of touch, the direct and indirect exploration of the entire abdominal wall, and especially of the ileocæcal region, from the viewpoint of pain, retains its importance, with the understanding, however, that no exclusive importance is to be attributed to this or that tender spot in particular.

THE NEW VOLUME OF THE INDEX CATALOGUE.

Volume XIV of the second series of the *Index Catalogue of the Library of the Surgeon General's Office, United States Army*, has been received at this office. It carries the vocabulary from *Prussian to Rzechak*, and contains the fifth addition to the alphabetical list of abbreviations of titles of medical periodicals published in Vol. IX of the second series. It is only in terms of praise that the volumes of this colossal and most useful work can ever be spoken of. It is the flower of our American medical literature, creditable alike to the government and to the successive librarians. This volume has been prepared under the direction of the present librarian, Lieutenant Colonel Walter D. McCaw, of the Medical Corps.

ERRORS OF REFRACTION AND THE GEN- ERAL PRACTITIONER.

The Section in Ophthalmology of the American Medical Association has obviously done a good thing in appointing a committee to promote a working knowledge of the correction of simple errors of ocular refraction among family physicians. The committee has already secured abundant evidence that such knowledge has been acquired by many physicians and that they have put it to practical use, thus making it evident that the same thing may be done by physicians in general, who certainly ought to be disposed to possess themselves of the requisite skill.

We are not astonished, however, to learn that it seems necessary to the committee, of which Dr. Leartus Connor, of Detroit, is the chairman, that, in order that the practice of correcting errors of refraction may become uniform, the State examining boards shall require proficiency in it and the medical schools teach it in their course. It appears that last winter the Michigan board notified the medical colleges that thereafter it would grant the license to practise only to such applicants as demonstrated on a living subject, with simple spherical lenses and test types, that they possessed a working knowledge of

the subject. The committee feels confident that all the State boards would make a similar requirement if they realized the situation.

Ordinarily we are not in favor of heaping more work on the medical student, but this is such a simple matter and one that can be turned to such good account by the general practitioner that we are disposed to urge conformity to the committee's recommendations, understanding of course that the training given in the colleges will be of a kind to enable the physician to recognize when he is getting into deep water in the attempt to correct refractive errors and know what patients he ought to turn over to the highly trained ophthalmologist.

A SMOOTH ROAD TO THE STARS.

We have been favored with a copy of a circular describing a work of title somewhat like *Advancing Americans of the Age*. By the merest accident the editor of the book noticed at the last moment that our distinguished patronymic was missing from this work and hastened to send us a printed form letter to that effect. For a paltry five dollars a creditable biography of ourselves will be constructed and inserted in the golden book. It is thus evident that the *aspera* of the poet have been blasted from the formerly difficult road to the *astra*: one can proceed to the stellar goal as if on noiseless rubber tires by merely spending five dollars. We need not have earned this sum; we may have inherited or found it, or won it on the election; we might even have borrowed it. Then we could mount into the big wagon and go whizzing by the long line of foolish toilers struggling in the old fashioned way toward the light, pick out the most becoming and best fitting halo left, and sit at our ease to await the otherwise slow filling of Elysium. Only one thing gives us pause; it is the printed letter. We fear a crowd of parvenu passengers who may have acquired the five dollars in some dubious manner—plagiarizers, pickpockets, and the like. We resume our pickaxe with a sigh.

THE PARIS FOOD CONGRESS.

The Second International Food Congress was held in Paris during the week ending October 24th. Pending the publication of the official account of the proceedings, Mr. Loudon M. Douglas, of Edinburgh, has conferred a benefit upon persons interested in the congress by issuing a condensed account of them. According to Mr. Douglas, more than 2,000 delegates were in attendance, representing twenty-eight different countries, and the method of carrying on the sessions was very effective. Many of the hygienists present were "men whose names are known throughout the whole world."

The congress seems not to have been so severe on the use of preservatives as we are getting to be in this country, and we quite agree with Mr. Douglas that some of its findings were "very notable." For example, it was decided that, while pure wine could be described only as the product of the complete or incomplete fermentation of the juice of fresh grapes, it appeared that the manipulations were many and various, and that the addition of such foreign substances as sulphurous acid and pure alcohol derived from malt was allowable. The addition of sulphurous acid to fruits also was deemed necessary. We presume that preserved fruits were meant. It was decreed, too, that "boron preservatives" were not only allowable but absolutely necessary in the manufacture of butter, and that in future it should not be required that such addition be declared, and "thus the addition of preservative would be reduced to the regular operations recognized as being essential to the good conduct of the butter industry." The use of some twenty aniline colors was allowed in connection with confectionery. It will be seen that the dominant feeling was not "in restraint of trade."

News Items.

Changes of Address.—Dr. A. Denenholz, to The Irvington, 136 West Sixteenth Street, New York.
Dr. Henry Parrish, to 5343 Baltimore Avenue, Philadelphia.

Dr. Herman Friedel, to 305 Henry Street, New York.
Dr. George Mueller, to 2024 Ewing Place, Chicago, Ill.
Dr. Bernard Livingston, to The Rensselaer, 536 West One Hundred and Thirteenth Street, New York.

Pellagra in Cleveland.—According to press dispatches a case of pellagra has been reported to the federal authorities from the Cleveland City Hospital, the first in that section of Ohio.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission announces examinations to be held on December 11th, are the following: Physician to the Onondaga County Almshouse, \$780; trained nurses to State institutions, \$420 to \$500 and maintenance.

The Red Cross Christmas Stamps will be placed on sale in Washington, D. C., on November 26th, and the sale will continue until Christmas eve. Last year the Red Cross Society sold 15,000,000 stamps, and the society hopes to sell at least 50,000,000 this year. The proceeds will be used in the fight against tuberculosis.

The Typhoid Situation in Cobalt continues to improve, according to newspaper reports. Few new cases have been received since November 11th, and many patients have been discharged. There are still 166 patients in the three hospitals, but a large number of these are convalescent and will be discharged very soon.

New Building for Boston State Hospital.—The trustees of the Boston State Hospital have purchased a block of land on Fenwood Road and Vilas Street, upon which they will erect the new hospital for the first care and observation of mental patients and the study of short treatment and clinical teaching of mental diseases.

The Pure Drug Show at Madison Square Garden.—A drug show has been held in Madison Square Garden during the past week, to which the physicians and nurses of New York City have been invited. There are some sixty exhibitors, the majority of whom are owners of proprietary preparations. A complete pasteurization plant was exhibited by Mr. Nathan Straus. The Charity Organization Society's Tuberculosis Exhibit and the demonstration of an invention for the deaf were among other interesting exhibits.

A New Office Building for Physicians is to be erected in Fifty-seventh Street, near Fifth Avenue, New York, in the near future. The building will be equipped with special sanitary appliances, electric elevators, etc., and will be for the exclusive use of physicians. It will be under the management of Messrs. Henry D. Winans & May.

The Physical Education Society of New York and Vicinity will hold its regular monthly meeting on Saturday afternoon, November 20th. Dr. S. Adolph Knopf will deliver an address on the Value of Proper Physical and Intellectual Training in the Combat of Tuberculosis. Dr. Thomas A. Storey is president of the society.

A Generous Gift to Lawrence Hospital, Bronxville.—A gift of \$150,000 has been made to the Lawrence Hospital, Bronxville, N. Y., by Mr. W. V. Lawrence, of which \$50,000 is to be used for the construction of a home for nurses, adjoining the hospital. The interest on the remaining \$100,000 is to be devoted to paying the running expenses of the hospital.

A Tuberculosis Exhibit in Reading, Pa.—A tuberculosis exhibit was held in Reading, Pa., on November 15th, 16th, and 17th, under the auspices of the Pennsylvania Department of Health. In connection with the exhibit there were a number of addresses on the subject of the causes and prevention of tuberculosis, which were illustrated with stereopticon views.

New Members on the Staff of the Homestead, Pa., Hospital.—At the annual meeting of the directors of the Homestead Hospital, held on November 13th, the following were elected as members of the staff of the hospital: Dr. Claude Barton, Dr. J. P. Oeffner, Dr. Willia Schuman, Dr. C. H. Bair, Dr. C. C. Huff, Dr. J. H. Stewart, and Dr. Andrew Graydon.

The New Tuberculosis Sanatorium at Westfield, Mass., is rapidly nearing completion, and will probably be ready for occupancy by February 1st. Many applications for admission have already been received, and the sanatorium will probably be filled to its capacity of one hundred and fifty patients as soon as it is opened. Dr. Chadwick will be the superintendent of the institution and will have three assistants.

The Alumni Association of the Lying-in Hospital of the City of New York held a stated meeting on Tuesday evening, November 9th, and elected the following officers for the ensuing year: President, Dr. Asa B. Davis, re-elected; vice-president, Dr. William P. Macleod; secretary and treasurer, Dr. Joseph E. Lumbard, re-elected. The paper of the evening was read by Dr. Albert F. A. King, of Washington, D. C., on the Significance of Posture in Obstetrics.

A Correction.—Dr. Robert Fletcher, of the Army Medical Museum and Library, writes to us as follows: "Permit me to correct two errors in your reporter's abstract of an address of mine read at the dedication exercises of the new hall of the College of Physicians of Philadelphia on the 10th instant. The title of the rare work of Vesalius was not 'Tabella,' but *Tabula anatomica sex*. The name of the gentleman who had the beautiful reprint made was not Sir William Stirling, but Sir William Stirling-Maxwell. The donor's name, by a like correction, should be Sir John Stirling-Maxwell."

The Medical Society of the County of New York will hold its one hundred and fourth annual meeting on Monday evening, November 22d, in Hosack Hall of the New York Academy of Medicine. The programme will include the presentation of patients with maculoanæsthetic leprosy, fibroma mollusum, and argyria, by Dr. William S. Gottlieb, and the reading of the following papers: Bier's Hyperæmic Treatment in Surgery, with the demonstration of instruments and the exhibition of patients, by Dr. Edward Adams; Local Anæsthesia in General Surgery, by Dr. Winfield Scott Schley.

Personal.—Dr. Achilles Rose has just returned from Greece, where he has been spending some months, and has opened an office at 173 Lexington Avenue, New York.

Dr. Arthur B. Duell has been appointed professor of otology in the New York Polyclinic Medical School and Hospital.

Dr. Joseph Tabor Johnson, of Washington, D. C., has donated a site for a vacation home for the Young Women's Christian Association near his home at Cherrydale, Va.

The portrait of Dr. Hobart Amory Hare, professor of therapeutics in Jefferson Medical College, has been added to the collection of portraits at the University of Pennsylvania.

The Franklin District Medical Society held a regular meeting at Greenfield, Mass., on Tuesday, November 9th. The programme included a paper by Dr. Maurice H. Richardson, of Boston, on Early Diagnosis, which was read by the author's son, Dr. Edward Richardson. Dr. F. W. Donahue, of Greenfield, reported a case of Epidemic Cerebrospinal Meningitis treated with the Flexner Serum. The next meeting of the society will be held on January 11, 1910, and for this meeting papers have been promised by Dr. Halbert G. Stetson, Dr. Aaron L. Newton, and Dr. Edward S. Winslow.

The Bronx Medical Association held a clinical meeting on Thursday, November 18th, at Lincoln Hospital, One Hundred and Forty-first Street and Southern Boulevard, the Bronx. Officers for 1910 were nominated, and the election will take place at the next meeting of the association. The present officers are: President, Dr. S. Carrington Minor; first vice-president, Dr. William E. Howley; second vice-president, Dr. T. Joseph Dunn; recording secretary, Dr. Charles Graef; corresponding secretary, Dr. Stratford F. Corbett; financial secretary, Dr. Nelson A. Craw; treasurer, Dr. F. L. Donlon.

Scientific Society Meetings in Philadelphia for the Week Ending November 27, 1909:

MONDAY, November 22d.—Mineralogical and Geological Section, Academy of Natural Sciences.

WEDNESDAY, November 24th.—Philadelphia County Medical Society.

FRIDAY, November 26th.—Philadelphia Neurological Society; Northern Medical Association; South Branch, Philadelphia County Medical Society.

SATURDAY, November 27th.—Samaritan Hospital Medical Society.

The Triprophetic Medical Society, of New York, held its twenty-ninth stated meeting on Tuesday evening, November 16th. The paper of the evening was read by Dr. Boleslaw Lapowski on Inunctions versus Injections in the Treatment of Syphilis, and among those who participated in the discussion were Dr. Frederic Bierhoff, Dr. George M. Mackee, Dr. G. Morgan Muren, and Dr. T. M. Townsend. Dr. A. J. Walshied presented a patient with lymphosarcoma of the neck and epithelioma of the nose, and another patient with hydronephrosis. Dr. A. H. Goelt presented a patient with complicated nephropexy, and Dr. W. T. Dannreuther exhibited a patient with an obscure hip injury.

Revised Law Regarding Physicians in Japan.—Vice-Consul General E. G. Babbitt, of Yokohama, reports that, according to the revised law, physicians shall not advertise in any way whatever concerning their ability, method of treatment, or previous career, except their professional degrees, titles, and specialties, and they shall provide a record book of services to patients, which must be preserved for at least ten years; the same rules apply to dentists. Commenting on the law, the *Japan Mail* says that "physicians, surgeons, dentists, and all who control hospitals or provide other means of medical treatment, will not be allowed to advertise anything except their names, qualifications, localities, and charges."

The Medical Staff of the Washington Heights Hospital.—A statement appeared in the New York daily papers recently to the effect that the superintendent of the Washington Heights Hospital had dismissed two members of the house staff of the hospital. We are informed that this statement is incorrect, as the superintendent of a hospital has no authority to dismiss a physician on the house staff, but must prefer charges against him to the medical board, who will do the dismissing. The facts in the case are as follows: Dr. Herman S. Jacobs, house surgeon to the hospital, refused to sign a paper certifying that a client of an insurance company had died in the institution unless he received the usual fee attached to such cases. The superintendent of the hospital, Miss M. E. Martyn, insisted that this money should go to the hospital fund. Dr. Jacobs refused to comply with her demand and she reported him to the chairman of the medical board, who suspended him. The remaining members of the staff, Dr. Aaron B. Cohen and Dr. David Linetzk, refused to remain unless Dr. Jacobs was reinstated. Dr. Linetzk resigning verbally and Dr. Cohen sending his resignation in writing to the board. These resignations were accepted by the board and Dr. Cohen and Dr. Linetzk left the institution a few days ago.

To Increase the Salaries of Nurses and Attendants in State Institutions.—Resolutions were adopted on November 16th at a conference of medical superintendents and managers of State hospitals with members of the State Commission in Lunacy, favoring legislation for an increase of about twenty per cent. in the salaries paid to attendants and nurses in the State hospital service. They also urge a system of annuities for attachés of State hospitals, including members of the medical staff, if they retire after twenty-five years' service. The system of annuities was proposed by Dr. William Mabon, medical superintendent of the Manhattan State Hospital. A committee was appointed to confer with the Lunacy Commission in drafting necessary legislation.

New York Physicians Honored by the German Emperor.—Unusual honors were conferred on several members of the staff of the German Hospital, of New York, by the German Emperor, on November 13th, as a recognition of the institution's fortieth anniversary. Dr. Otto Kiliani, president of the medical board, was decorated with the Order of the Royal Prussian Crown; Dr. Rudolf Denlig and Dr. Louis Peiser, members of the board, each received the Order of the Red Eagle; and Mr. Louis Kortum, superintendent of the hospital, was presented with a scarf pin in the form of an eagle, consisting of a large emerald surrounded by diamonds and pearls. Dr. August Zinsser, president of the hospital, had conferred upon him the honorary degree of Doctor of Medicine from the University of Giessen. The congratulations of the Austrian Government were conveyed to the institution by the Austrian ambassador.

Meetings of Sections of the New York Academy of Medicine.—The Section in Laryngology and Rhinology will meet on Wednesday evening, November 24th, at 8:15 o'clock. A case of squamous celled epithelioma of the atrium of Highmore will be reported by Dr. A. P. Voislavsky and Dr. Alfred Braun. Dr. J. W. Gleitsman will read a paper on Cordectomy for Bilateral Paralysis of Cords, and present specimens. A résumé of the important subjects discussed at the meetings of the Laryngological Sections of the British Medical Association at Belfast and the Sixteenth International Medical Congress at Budapest will be presented by Dr. D. Bryson Delavan. Three subjects have been selected for special consideration, as follows: Sinusitis, the discussion to be opened by Dr. C. G. Coakley; Cancer of the Larynx, to be discussed by Dr. W. F. Chappell; and Chronic Cicatricial Stenosis of the Larynx, to be discussed by Dr. J. W. Gleitsman and others. The guest of the evening will be Dr. D. Braden Kyle, of Philadelphia.

The Section in Obstetrics and Gynecology will meet on Friday evening, November 26th, instead of Thursday, the regular night of meeting, on account of Thursday being Thanksgiving Day. The paper of the evening will be read by Dr. Herbert M. Little, of Montreal, by invitation. His subject will be Induction of Labor and Accouchement Forcé. Among those who will take part in the discussion will be Dr. J. Clifton Edgar, Dr. J. M. Markoe, Dr. C. Jewett, Dr. G. Seeligman, Dr. G. L. Brodhead, and Dr. F. A. Dorman.

Charitable Bequests.—Franziska Speyer, widow of the banker George Speyer, who died in Frankfort-on-the-Main a few days ago, left nearly \$2,500,000 to charities. The George and Franziska Speyer Foundation at the Frankfort Academy for social and commercial science receives \$250,000, and the same amount goes to the George Speyer House for investigating remedies for epidemics. Large sums are bequeathed for the study of lupus and cancer. Bequests are also made to Jewish hospitals, and also to the pension funds of the Speyer branch houses in London and New York.

The will of the late Dr. George R. Neff, of Philadelphia, includes the following bequests: Hahnemann Hospital, to endow free beds, \$20,000; German Hospital, for the same purpose, \$10,000; St. Luke's Hospital, \$5,000; Orphans' Home and Asylum for the Aged of the Evangelical Lutheran Church, Mt. Airy, \$10,000. The bequests are contingent upon the testator's grandchildren dying without issue.

Announcement is made at the Homeopathic Hospital, Rochester, N. Y., of a gift of \$100,000 to that institution to endow two beds, one in the name of Hiram Sibley, and the other in the name of Mrs. Hiram Sibley.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 13, 1909:

	—November 6—		—November 13—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	389	180	328	177
Diphtheria	393	29	354	28
Measles	191	8	197	3
Scarlet fever	197	10	191	15
Smallpox	..	..	1	..
Varicella	89	..	13	..
Typhoid fever	79	16	59	19
Whooping cough	3	8	28	8
Cerebro-spinal meningitis	1	1	5	..
Total	1,212	212	1,047	203

The Health of Chicago.—During the week ending November 6, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 158 cases, 22 deaths; scarlet fever, 161 cases, 7 deaths; measles, 75 cases, 1 death; whooping cough, 29 cases, 2 deaths; typhoid fever, 26 cases, 6 deaths; chickenpox, 40 cases, 0 deaths; pneumonia, 14 cases, 109 deaths; tuberculosis, 96 cases, 67 deaths. Thirty-six cases of minor contagious diseases were also reported. The deaths from other important causes were: Cancer, 29 deaths; nervous diseases, 22 deaths; heart diseases, 63 deaths; apoplexy, 12 deaths; Bright's disease, 58 deaths; diarrheal diseases, under two years of age, 35 deaths; diarrheal diseases, over two years of age, 4 deaths; bronchitis, 1 death. There were 7 suicides, 48 deaths due to accidents, and 2 deaths from manslaughter, making a total of 58 deaths by violence. The total number of deaths during the week was 622, in an estimated population of 2,224,490, corresponding to an annual death rate of 14.58 in a thousand of population. The infant mortality was 161; 105 under one year of age, and 56 between one and five years of age.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending November 6, 1909, there were 1,333 deaths from all causes reported to the department, 193 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.23 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.07; the Bronx, 17.69; Brooklyn, 14.84; Queens, 15.12; and Richmond, 17.39. The total infant mortality was 347; 229 under one year of age, 64 between one and two years of age, and 54 between two and five years of age. Of the total number of deaths of children under five years of age, 58 were due to diarrheal diseases. The deaths from important causes were as follows: Cancer diseases, 63; pulmonary tuberculosis, 140; diarrheal diseases, over five years of age, 58; organic heart diseases, 132; Bright's disease, 110; cancer, 73; pneumonia, 115; bronchopneumonia, 85. There were 12 suicides, 76 deaths due to accidents, and 3 deaths from homicide, making a total of 91 deaths by violence. There were 97 stillbirths. Eight hundred and seven marriages and 2,252 births were reported during the week.

Society Meetings for the Coming Week:

MONDAY, November 22d.—Medical Society of the County of New York.

TUESDAY, November 23d.—New York Dermatological Society; New York Otological Society; New York Medical Union; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

WEDNESDAY, November 24th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, November 25th.—East Side Physicians' Association of New York; Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Society; Brooklyn Society for Neurology.

FRIDAY, November 26th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Academy of Pathological Science, New York; New York Society of German Physicians; New York Clinical Society.

SATURDAY, November 27th.—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society, New York.

The American Association for the Study and Prevention of Infant Mortality was organized on November 13th as a result of the conference held in New Haven, Conn., last week under the auspices of the American Academy of Medicine. The officers are: President, Dr. J. H. Mason Knox, Jr., of Johns Hopkins Medical School, Baltimore; first vice-president, Professor C. E. A. Winslow, biologist in chief of the Laboratory of Sanitary Research, Massachusetts Institute of Technology; second vice-president, Mr. Homer Folks, secretary of the New York State Charities Aid Association; secretary, Dr. Henry I. Bowditch, of the Harvard Medical School; executive committee, the president and officers and Dr. Mary Sherwood, of Baltimore; Dr. J. S. Neff, director of Public Health and Charities, Philadelphia; Mr. Robert W. Bruere of New York; Dr. Helen C. Putnam, of Providence, and Dr. John S. Fulton, secretary general of the Congress on Hygiene and Demography, of Washington.

The New Dental Clinic of the Worth Street Italian Industrial School of the Children's Aid Society was officially opened on November 15th. This clinic, the third of its kind in New York, was established under the joint auspices of the Children's Aid Society and the New York Dental Hygiene Council of the Dental Society of the State of New York. For the last two years a free dental clinic has been conducted at the Fifty-third Street school of the Society and Bellevue has maintained a similar clinic at the Sullivan Street Italian School, as well as one, chiefly for adults at the hospital itself. The new Worth Street clinic which, like the others maintained by the society, will care for the teeth of those of its pupils whose parents cannot or will not pay for dental work. It has an attending staff of ten dentists and is supplied with a complete equipment, including two chairs, and it is estimated that a thousand children can receive adequate treatment there every year. The Children's Aid Society hopes to be able in time to establish clinics in its twelve remaining schools, and when these clinics have been established in all of the fifteen schools of the society they will be able to care for at least 12,000 children. In addition to the clinics of the Children's Aid Society there are thirteen dental clinics and dispensaries where free treatment may be had, though most of the work done at these is in the way of temporary relief rather than of permanent and preventive dentistry. The experience gained by those engaged in the work has satisfied the projectors of the clinic of the practicability of teaching mouth hygiene to the children. The volunteer service of the New York Dental Hygiene Council has rendered possible the broadening of the society's field of usefulness. Dr. J. Morgan Howe is president; Dr. Herbert L. Wheeler, who has charge of the Bellevue Hospital clinic, is vice-president; and Dr. Arthur H. Merritt, who directs the society's clinic at the Fifty-third Street school, is secretary.

The Radium Institute of America was organized in New York on November 13th, at a meeting of physicians, surgeons, chemists, and physicists called by Professor William Hallock, head of the department of physics in Columbia University. One of the objects of the institute will be to explore the sources of radium and of radioactive substances as they occur in the United States, and control them exclusively for philanthropic purposes, and by spreading correct information concerning radium protect the public from imposture. The plans of the founders of the institution include the establishment of a clinic and a research laboratory. The institution is modeled after similar institutions in France and Great Britain. Application will be made for incorporation, its incorporators being Dr. Charles F. Chandler, head of the department of chemistry, Columbia University; Dr. Robert Abbé, who has in the last seven years made important researches in the medical use of radium; Dr. Willy Meyers, of New York; Dr. Ellwood Hendrick, a banker, who was formerly a chemist; Dr. Hugo Lieber, a chemist; Dr. Hugo Schweitzer, a chemist; Professor Hallock; Dr. George F. Kunz, a mineralogist; Dr. George B. Pegram, professor of physics at Columbia University; Dr. W. J. Gies, of the department of biology in the College of Physicians and Surgeons; and Dr. Bergen Davis, professor of physics in Columbia University. Professor Hallock was the temporary chairman, and the following officers were elected: Dr. Chandler, president; Dr. Abbé, vice-president; Professor Hallock, secretary; Dr. Pegram, assistant secretary, and Dr. Lieber, treasurer.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 28, 1909.

1. The Fruits of Medical Research with the Aid of Anæsthesia and Asepticism, By CHARLES W. ELLIOT.
2. Acute Gonorrhœal Epididymitis Treated by the Method of Bier, By J. DELLINGER BARNEY.
3. The Opsonic Treatment of Pyorrhœa Alveolaris, By THEODORE CHAPIN BEEBE.
4. Eponymic Expressions in Medical Literature, By FIELDING H. GARRISON.
5. An Epidemic of Catarrhal Jaundice, By FRANK H. LESLIE.
6. Relaxed Knees in Children, By MARK H. ROGERS.
7. The Use of the Term "Flat Foot," with a Note on the Diagnostic Classification of the Ordinary Disabilities of the Adult Foot, By HENRY O. FEISS.

2. **Acute Gonorrhœal Epididymitis Treated by the Method of Bier.**—Barney says that, in acute gonorrhœal epididymitis, Bier's *Stauung Hypromie* relieves pain, enables the patient to go about his business, and restores the parts to their normal condition as speedily as possible. The apparatus, as described by Bier, consists merely of a piece of thin rubber bandage about eight inches long by four inches wide. To the middle of one end of this is stuck a piece of adhesive plaster four inches long by half an inch wide. The rubber is drawn around the inflamed testicle to the proper degree of tightness and its end secured with the adhesive plaster. The latter, we are told, must be equal to the greatest diameter of the testicle, otherwise the apparatus will slip off. If directions are followed the bandage is pictured as lying smoothly over the testicle, free from wrinkles, and fitting like the cover of a baseball. In actual practice it is impossible to attain this end with a single strip of adhesive. The loose and elastic scrotal skin allows no such nicety of application and the apparatus at once rolls itself up into a narrow strip at the base of the scrotum, or slides downward and drops off at once. He has modified this apparatus so that by using two strips of adhesive the rubber does actually lie smoothly and tightly over the whole testicle. The piece of rubber described in the textbooks is somewhat too short and much too narrow. The dimensions should be approximately nine or ten inches long by six inches wide, being altered to suit the size of the testicle with which the patient has been endowed by nature or disease. Barney suggests no change except in numbers in the strip of adhesive plaster. He emphasizes strongly the point that neither strip of adhesive should be long enough to go completely around the testicle. This would produce a firm, unyielding band, which, when the scrotum swells, may do harm. An interval of rubber bandage should be left between the ends of each strap so that the swelling may proceed with only the yielding medium to check it. This is very important.

3. **The Opsonic Treatment of Pyorrhœa Alveolaris.**—Beebe remarks that it seems probable that, underlying all the various conditions which contribute to the onset and progress of pyorrhœa, there is a deficiency in the normal protective substances in the blood. This is shown by the almost invariably low opsonic indices to the same bacteria which are found to be active in the gums. We have

found that, whatever conditions may be present, as soon as the blood is stimulated to form new protective substances there is an immediate improvement in the patient's condition, both locally and generally. It must be distinctly understood, and this point cannot be too strongly emphasized, says Beebe, that in order to get the best results the opsonic treatment must be combined with careful and thorough dental treatment. The statement is often made that the disease can be held in check and sometimes cured by dental treatment alone. This is probably true in some cases, but most of the patients seen by the writer were sent by good dentists as patients whom they were unable to benefit. As a rule, the opsonic treatment is slow, and it may take several months before the gums are free from pus and in a healthy condition. Especially in these cases it is necessary to assist nature by removing calcareous deposits which act as a constant irritation, fastening loose teeth for the same reason, and correcting malpositions. Wherever it is found that some constitutional condition is complicating the case, this must be relieved as far as possible, as in any other disease. There is a question whether teeth that are already loose can become firmly placed again. Patients are told that the cause of the teeth becoming loose is the absorption of the alveolar processes about the sockets, and that in all probability opsonic treatment will not cause a regeneration of the bony structure. In the face of this statement there is absolutely no doubt that in several cases the teeth have become firmer. Another question often asked is as to the length of time the improvement will continue after treatment has stopped. It is too soon to answer that question satisfactorily, owing to the shortness of time which has elapsed since this method of treatment was begun. Two patients who have had no treatment for nearly fourteen months have had no recurrence. It is unfortunate that many of the patients have had the trouble so long and have suffered so much from it that, unless they obtain immediate results and are promised future immunity, they easily become discouraged. Judging from the results so far obtained in all stages and degrees of pyorrhœa, it is apparent that we now have at our disposal a method of treatment which, though often slow, is constant in its good results, especially when combined with thorough dental treatment.

5. **An Epidemic of Catarrhal Jaundice.**—Leslie reports 135 cases of catarrhal jaundice, treated in one locality during a period of six months. Leslie comes to the conclusion that catarrhal jaundice is infectious, probably through the breath or other excretions of the body.

November 4, 1909.

1. The Diagnosis of Renal Tuberculosis, By ARTHUR L. CHUTE.
2. Renal Tuberculosis. Pathogenesis and Pathology, By LINCOLN DAVIS.
3. Remarks on the Prognosis and Treatment of Renal Tuberculosis, By RICHARD F. O'NEIL.
4. Cases Illustrating Difficulties of Diagnosis in Renal Tuberculosis, By F. B. LUND.
5. Direct Transfusion of Blood. A Comparison of Methods, By J. C. HUBBARD and A. R. KIMPTON.

Renal Tuberculosis.—Chute remarks that the first signs of renal tuberculosis will be those of cystitis. A strong family history of tuberculosis is

suggestive, but the absence of any such history is of no particular weight against the probability of tuberculosis. The history of a cystitis that made its appearance without evident cause should always be looked upon as suspicious of a possible renal tuberculosis. There are some signs which ought to be brought out by a general examination. The finding of scars or other evidence of an old tuberculous process, such, for instance, as a tuberculosis of a testis, or the finding of any active tuberculous process is suggestive that the urinary process is also tuberculous. Emaciation, if it is considerable, is in favor of this tuberculous nature of a urinary suppuration. The grade of emaciation, however, that is suggestive of tuberculosis, usually occurs so late that it is of little practical use as a diagnostic sign. In the early stages of renal tuberculosis there is often no appreciable loss of weight, and this condition may persist even when the process is well developed. Most patients present very little change in the temperature. While the things brought out by a general examination have some value, the question as to whether a given process is tuberculous or not will usually be settled by a study of the urine. For this purpose it is necessary that the specimen of urine examined be aseptically drawn and uncontaminated. A point that is very suggestive of tuberculosis, one may almost say definitely diagnostic, is a purulent urine in whose stained sediment there are no organisms to be found. When a purulent urine is sterile on cultural examination this probability of tuberculosis is, if possible, heightened. Another sign of less value that depends on this same thing, that is, the absence in the urine of the common bacteria, is a purulent urine that after sedimentation by gravity leaves a perfectly transparent layer of supernatant fluid. In the ordinary purulent urine the bacteria multiply so that this layer is always at least a little murky. Both of these signs naturally fail when there is a mixed infection, as there sometimes is. It is, however, surprising to see the proportion of tuberculous patients in whom, even in spite of repeated examinations and sometimes considerable local treatment, there is no mixed infection. For this reason this test of a purulent urine that shows no organisms is of use in a considerable proportion of cases. The inoculation of guinea pigs and the recovery of tubercle bacilli from their glands and other lesions are without question the most accurate way of determining the tuberculous nature of a urinary infection. However, the finding of sterile pus or of acid fast bacilli in a catheter specimen of urine is very definite proof. After we have settled to our satisfaction that a given urinary infection is tuberculous, and drawn the inference from the rarity of primary bladder tuberculosis that the process is probably renal, we still have to establish this last fact beyond a doubt and prove definitely which side is infected. Not only this, but to apply our most satisfactory therapeutic measure (nephrectomy), we must have definite assurance that the process is limited to one side. Both these latter points are determined by the examination of the urinary tract, and incidental to establishing these we gather considerable cumulative evidence as to the nature of the process. The local examination of the urinary tract is carried out by means of cystoscopy. This

procedure does not differ here from the procedure as used in other sorts of disease, with the exception that it is usually more painful, and will, therefore, more often require ether. Some of the pictures are quite typical. Thus a number of small miliary tubercles about one ureteric orifice are definite evidence of a renal tuberculosis. If there are small ulcers where the superficial layer of mucous membrane has been destroyed by the breaking down of these little tubercles, they make the appearance more typical.—Davis says that renal tuberculosis is caused by the bacillus of Koch, which may gain admission to the kidney in three ways: 1, By the blood stream—hæmatogenous infection; 2, by the urinary passages—ascending urogenous infection; 3, by extension from diseased neighboring tissues—infection by contiguity. It is now very generally agreed that infection occurs in the first way, that is, by the blood stream, in the great majority of cases—exhaustive clinical, pathological, and experimental researches have quite definitely settled this point; also that the kidney is primarily affected, as far as the urinary tract proper is concerned, in the great majority of cases, and that from the kidney the process tends to extend in the direction of the urinary current down the ureter to the bladder, which is involved secondarily. Tuberculosis is probably never actually primary in the kidney in the sense that the initial lesion of the body occurs here, since tubercle bacilli cannot enter it directly from the outside.—O'Neil states that unilateral renal tuberculosis should be treated by removal of the kidney and ureter if involved, providing, of course, other foci in the body do not contraindicate operation. Any stubborn secondary bladder involvement is to be treated with tuberculin or after Rovsing's method, and supplemented by climatic and hygienic measures. With regard to the removal of the ureter, many writers think this is unnecessary, as it will heal as the bladder does. However, the writer has seen a case where the bladder without doubt was kept infected by the remaining diseased ureter. The Rovsing treatment consists of the installation of 50 c.c. of a six per cent. aqueous solution of carbolic acid at 95° F. after the bladder has been cleaned of all pus. This is done several times till the washings return clear. The pain is intense, morphine being required. Installations are at first daily, but the interval is gradually lengthened to three or four days as the urine gets clearer. The treatment lasts from one to six months. He emphasizes the fact that good results are obtained by early diagnosis and operation and by carefully estimating the condition of the other kidney.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 13, 1909.

1. The Advantage of Using Potassium Iodide until We Have Something Better, GEORGE DOCK.
2. Bichloride of Mercury in Treatment of Idiopathic Multiple Hemorrhagic Sarcoma with Report of Two Cases, H. J. F. WALLHAUSER.
3. Electric Sleep, By DUDLEY TAIT and RAYMOND RUSS.
4. Achondroplasia, By M. H. FUSSELL, ROBERT S. MCCOMBS, GEORGE DE SCHWEINITZ and HENRY K. PANCOST.
5. Some Reasons why a School of Tropical Medicine Should be Established in the United States, By J. A. NYDEGGER.
6. Transitory Urinary Finding Associated with Some Diseases of Childhood, By WALTER LESTER CARR.

7. Post Hoc, Non Ergo Propter Hoc. Cases in Children Illustrating Conditions Mistakenly Attributed to Injuries, By J. P. CROZER GRIFFITH.
8. Probable Spinal Cord Lesion Following the Pasteur Treatment. Report of Two Cases, By W. A. JONES.
9. The Lowering of Blood Pressure by the Nitrite Group, By GEORGE B. WALLACE AND A. J. RINGER.
10. Relationship of the Medical Profession to Preventive Medicine, By H. M. BRACKEN.

3. **Electric Sleep.**—Tait and Russ have applied the Leduc current centrally twenty-four times in man, making their first experiments on themselves. In this work the negative electrode, measuring 11.5 by 4.5 cm., is applied over moist modeling clay just above the eyes and the positive electrode over wet cotton to the nape of the neck. A few tests with large and small positive electrodes applied over the thorax and abdomen showed their danger early in their work, for respiratory failure due to contraction of the diaphragm and chest wall quickly resulted. They have carried the current to five and one half milliampères without producing loss of eye reflex. The sensation, as they have tried it on themselves, is not at first disagreeable; a whirling through the brain as of a vibrator, but, as the amperage has been raised, the sensation through the head has become so painful that it has caused them to desist. Severe headache was experienced by one of them for twenty-four hours. They report positive results as to analgesia in only one individual. In this case the results have been constant over many trials: A general superficial analgesia is quickly established even at a very low milliampère (one and one half to two milliampères). An animal electrocuted by the Leduc current may be resuscitated by provoking rhythmic muscular contractions with the same current that caused the animal's apparent death. A low voltage of very short duration should be used and the normal respiratory rate followed. They have found this measure of great value in respiratory and cardiac disturbances and have repeatedly operated on dogs after having resuscitated them from what seemed certain death. They conclude that according to the potential used and the position of the electrodes, the Leduc current may produce three different conditions, which appear in the following order: 1. Analgesia, superficial, deep, or both. 2. Respiratory and cardiac inhibition. Epilepsy. 3. Electrocution. The close interrelation of these conditions constitutes the element of danger in Leduc's current. From their experiments on rabbits they cannot agree with Leduc that the condition here described should be classed as sleep in the generally accepted sense, and they offer as arguments the following: The frequent rigidity and tremor in the limbs, the increase in blood pressure, and the absence of pupillary contraction. The multiplicity of factors involved in the application of the Leduc current easily accounts for the inconstancy of experimental results. Its practical value in canine or experimental surgery is consequently almost nil; and, unless the technique is thoroughly understood, its use as an analgesic agent may not be devoid of danger. It will require a vast amount of investigation before we may hope to find in electricity a safe and reliable agent, capable of replacing chemical narcosis or reinforcing "Nature's soft nurse," sleep.

6. **Urinary Findings.**—Carr, from his review of the literature and his study on individual cases, finds that there is every reason to believe that the majority of children who show albumin and hyaline casts in the urine during or after gastroenteric diseases and influenza recover. As, however, this belief in recovery is based largely on ignorance of the state of the kidney for the period following the acute disease or degeneration, he urges a routine examination of the urine of all children who have had indigestion, gastroenteritis, and disturbances of metabolism. We should make every effort to watch such cases both during the time of the acute symptoms, and also for a number of months, possibly years, after their subsidence, to record the processes incident to kidney defects.

MEDICAL RECORD

November 13, 1909.

1. Diabetic Coma: Is It Due to Acidosis?
By HENRY S. STARK.
2. The Treatment of Amoebic Dysentery,
By W. E. DEEKS AND W. F. SHAW.
3. The Surgical Treatment of Very Severe and Late Cases of Amoebic Dysentery,
By A. B. HERRICK.
4. Pathogenesis of Tabetic Arthropathies Based upon an Anatomoclinical Study of Two Cases,
By ALFRED GORDON.
5. A Clinical Study of Six Hundred Cases of Heart Diseases,
By J. N. HALL.
6. Report of Twenty Cases of Pulmonary Tuberculosis without Bacilli in the Blood,
By L. ROSENBERG.
7. A Wrist Support for Spymnographic Tracing,
By D. FELBERBAUM.

2, 3. **Amoebic Dysentery.**—Shaw observes that no race or nationality is immune to the disease. There is no endemic local centre. The frequency of cases usually run in successive months, but not at the same periods of the year, and the number varies greatly in successive years. Complications are numerous, but the most common is abscess of the liver. The longer treatment is delayed the more grave is the prognosis. The rest supportive treatment, consisting of rest in bed, a milk diet, the use of mild irrigations, and bismuth subnitrate in heroic doses, has given him by far the most satisfactory results. Surgical interference is indicated if improvement does not rapidly follow the medical treatment.—Herrick classifies the cases of dysentery turned over to the surgeon by the clinicians: 1. Those cases of which have become chronic and remain in this condition under the best medical treatment. The great majority of the cases in the literature come in this class and most excellent results have been obtained by means of appendicostomy with the subsequent treatment attained by its aid. 2. The second class comprises those cases of acute, fulminating type, which represent a severe form of the disease, and in which from the very onset the extreme toxicity of the process is so marked that in the near future the clinician will advise combined surgical and medical treatment from the start. This is a class of cases whose members will increase with the acumen of the clinician in his diagnosis and prognosis of the individual cases. 3. The third class includes those of a severe, acute type which are resistant to medical treatment, and at the end of one or two weeks no improvement is found, or the patient is failing—and in this class would fall practically all the cases which have been turned over to

the surgical side in this hospital. In the treatment of these severe forms of dysentery, three things are necessary, says the author: 1. Supportive treatment of the patient, which would include the various hygienic and medical measures usually employed; 2, local treatment of the large bowel, which is partially obtained by rectal irrigation through the appendix or valvular cæcostomy according to the Kader method; and, 3, a complete rest of the large bowel from all irritation of food particles or decomposition products thereof passing over its surface. The significance of this third point can be readily understood if we consider the value of an artificial anus in cases of ulcerative proctitis or cancer of the rectum, and the marked improvement in these cases after the irritation of the bowel contents is removed. Accordingly in the severe forms of dysentery, the rôle that these three methods of treatment play should be carefully borne in mind, because only by a proper adjusting of all three can we do the utmost for the patient. The first two of these is readily accomplished by the operation of appendicostomy. To obtain the third requisite, that is, the complete rest of the large bowel, necessary in the most severe forms of dysentery, a larger opening is required and one sufficient to allow the contents of the cæcum to be evacuated at that point. The operation of cæcostomy as performed by the author, is very simple, consumes very little if any more time, and often can be done quicker, than the corresponding operation of appendicostomy. An incision three inches long is made directly into the abdominal cavity over the region of the cæcum. The cæcum is grasped and drawn into the wound and two of its longitudinal bands are attached to the parietal peritonæum, one on either side of the incision, by a running catgut suture, thus shutting off the general peritoneal cavity and leaving a large pouch of the cæcum protruding through the wound. A few interrupted catgut sutures anchor this pouch to the skin, iodoform packing being introduced between, for the sake of drainage and to shut off contamination of the muscle layers. The cæcal pouch is opened at once, the contents sponged out, and irrigations can be started immediately. He always opens the cæcal pouch at the time of the original operation, and, although this is considered a hazardous proceeding, he has had no bad results arise therefrom in his series of cases. The operation can be performed either under local or general anæsthesia. Both methods have been used by the author, but in these very severe cases his preference is for a local anæsthetic. The objections that have been hitherto raised to this operation are: 1. The difficulty of performance; 2, the disagreeableness to the patient of the artificial anus; 3, the starvation of the patient on account of insufficient nourishment due to the absorbing surface of the large bowel cut off; and, 4, the difficulty of closure.

6. **Report of Twenty Cases of Pulmonary Tuberculosis without Bacilli in the Blood.**—Rosenberg reports the result of his examinations of the blood of twenty patients with tuberculosis after the manner of Rosenberger. His investigations have failed to substantiate the contention of Rosenberger that tuberculosis is a bacteriæmia.

BRITISH MEDICAL JOURNAL

October 30, 1900.

1. A Lecture on Hernia of the Uterus in Men and Women, By JOHN BLAND-SUTTON.
2. On the Increase of the Hæmolytic Power of Sera Resulting from the Experimental Introduction of Organ Extracts Derived from other Animals of the Same Species, By D. EMBLETON and H. BATTY SHAW.
3. Seven Cases of Appendicostomy for Various Forms of Colitis, By FREDERICK C. WALLIS.
4. Fulminating Appendicitis, By H. BRANSON BUTLER.
5. Pneumococcus Invasion of the Throat, Followed by Pleuropneumonia and Appendicitis: Operation and Recovery, By WILLIAM ERNEST PEACOCK and Professor OSLER.
6. Whitehead's Operation for Hæmorrhoids, By E. STANMORE BISHOP.
7. The Afterresults of the Operative Treatment of Hæmorrhoids. A Study of Three Hundred Cases, By H. GRAEME ANDERSON.
8. Acute Necrosis of the Pancreas: Sudden Death, By B. HENRY SHAW.
9. A Case of "Congenital Pyloric Stenosis" Successfully Treated without Operation, By E. MOUNTJOY PEARSE.

1. **Hernia of the Uterus in Men and Women.**

—Bland-Sutton uses this rather peculiar title for a lecture in which he speaks of hernia in hermaphrodites. He remarks that in all the cases of uterus masculinus which he has examined the testes were tethered to the uterine cornua by short cords; it is easily conceivable that when the spermatic glands attempt to obey the impulse which causes them to traverse the inguinal canals to reach their normal positions in the scrotum they drag the uterus with them. In connection with this it is quite possible that in many instances in which the uterus is found occupying the sac of an inguinal hernia in women, and especially in female infants, a critical examination of the minute structure of the genital glands associated with it would, in many instances, show that they are really testes, though their shape might lead the surgeon to regard them as ovaries, and this in spite of the fact that the external genitalia were characteristically female in type. That an individual with the external characters of a woman should possess testes is as startling as the fact that one with the fullest attributes of manhood should have a uterus in his pelvis or in the scrotum. Pseudo-hermaphrodites sometimes contract marriages, rarely as men, usually as women. In some reported instances such unions have been attended with happiness. Realizing that the external genitalia afford no positive indications of the nature of the internal genital organs, and especially the sexual gland, it is a fair assumption, concludes our author, that some examples of sexual rigidity and sex perversion may be explained by the possibility that the individuals concerned may possess sexual glands opposite in character to those indicated by the external configuration of their bodies.

2. **The Increase of Hæmolytic Power of Sera.**

—Embleton and Shaw state that it appears possible, as a result of their experiments, to develop in the sera of animals into which injections have been made of the organs of another animal of the same species, a change which consists in part at least in the increase of the hæmolytic power of the serum, an observation which so far has not hitherto been

made. Other changes which may occur as a result of the experimental introduction of organic extracts are being studied by them by the method of absorption introduced by Ehrlich and Morgenroth. Further, the emulsions of different organs appear to have different powers of checking the hæmolytic property of such experimental sera, the kidney possessing the greatest and the liver the least power, whilst the spleen and heart occupy an intermediate position, and are equally or nearly equally potent. The nature of this body or bodies is also being investigated by them. The form of their experiments may prove of use in determining the strength of the hæmolytic power of an experimental serum. Instead of estimating the titre by reference to red corpuscles, this may be done by estimating the titre in terms of extracts of organ.

6, 7. Whitehead's Operation for Hæmorrhoids.—Bishop says that he has only practised Whitehead's operation in cases of hæmorrhoids. Some hundreds of patients have been so treated without any mortality, and in all with a speedy convalescence. In a few spasmodic urinary retention for a few hours has occurred, and, in still fewer, pain at the anus has been complained of, but both have quickly yielded to hot boric fomentations to the part. He describes the method as follows: The intestinal tract should be previously cleared as much as possible. It is not only annoying, it is distinctly detrimental to the work if large masses should make their appearance in the rectum during the ensuing week. Probably the best method of ensuring their absence is the administration on the day but one before of an ounce of castor oil, the taste of which may be disguised by an admixture with it of two drachms of tincture of cardamoms. On the day before operation the action of this should be supplemented by a copious enema of soap and water, so that the rectum may be clean. At the operation itself another free douche of weak potassium permanganate solution should also be used during the process of dilatation. Free dilatation of the sphincter should be done before any cutting is commenced. It should be gradual, plenty of time being taken over it, so that no tearing of the muscle is possible. The best instrument for this purpose is his modification of Allingham's dilator. In this instrument the original rounded, short handles are replaced by two 4 in. long flat levers, approximation of which by the hand opens the dilating blades. By manual compression of these levers unduly rapid expansion of the sphincter, and possible damage therefrom, is prevented, since the hand is usually incapable of overcoming the sphincteric resistance too suddenly. A ratchet and screw connecting the two blades permits of maintaining the amount of dilatation so gained whilst the hand is resting. Dilatation should never be done by the screw itself, as it is impossible then to gauge the amount of force employed, and the sphincteric muscle may thereby be unduly stretched or even torn, a result most carefully to be avoided. But complete and effective dilatation before any further manipulation is extremely important to success; by this manoeuvre, whilst the sphincter remains intact, is rendered sufficiently parietic to ensure complete rest to the

part during the first two hours, gas is allowed free exit, and spasm prevented. During the operation any actively spurring vessel should be tied, but venous bleeding may be ignored; this bleeding is sometimes free, but will cease as soon as the operation is completed. When finished, the edges of the anus very frequently appear very irregular, tags of lately distended and stretched skin projecting from the orifice; it is wise to ignore these. The skin, having been stretched over dilated veins which are now removed, will, if left alone, gradually contract again. Were these projections removed, although a neater immediate result would be obtained, the final condition due to the retraction would be an orifice which was unduly dragged to one or other side, or so tight as to render the act of defæcation a painful process. After the suturing is finished, a suppository containing $\frac{1}{4}$ grain of morphine may be inserted in the rectum with advantage. This tides over the first few hours during which some pain and smarting may be felt, and does not appreciably affect the action of the intestine later. For the bowels must not be "locked up." At first it was thought that, by preventing the passage of a stool for some days, rest and freedom from infection of the line of union would be obtained, so facilitating the process of healing, but it was soon found that any advantage so gained was at the expense of the future, when hard masses which had accumulated in the upper rectum and sigmoid during this period began to descend and to be forced through the half healed ring, tearing and splitting the tissues, and thus producing not only pain, but being followed by an inflamed condition of the connective tissue around. It was far more conducive to a smooth recovery if the stools were from the first rendered soft, and easily and frequently expelled by the use of such laxative as confection of senna, liquorice powder, cascara, etc. By this operation not only the more prominently enlarged veins are removed, but any at that time "embryonic" hæmorrhoids are taken away, and the prospects of a permanent cure are thereby immensely increased.—Anderson observes that the Whitehead operation is indicated in the following conditions: 1. When there is a general hæmorrhoidal condition involving the whole circumference of the anal canal, and especially if there is a good deal of prolapse, and also in cases in which there is extensive thrombosis. 2. In cases where, though the piles may not be large, there is a pathological condition which may be described as a preffissure or a preffistula state. In this condition the anal valves are enlarged, and curious little blind stomoseous pockets may be found running for a varying length upward. In other cases these pockets run downward toward the anal margin. These, first described by Mr. F. C. Wallis, and lately believed to be due to developmental effects, are undoubtedly in many cases the starting point of fistula; while if Ball's theory is accepted, enlarged anal valves lend themselves to the formation of fissure. The Whitehead method should not be employed in all cases of hæmorrhoids, but is well suited for the conditions mentioned above. If the after treatment is properly carried out, stenosis should not occur.

THE LANCET.

October 30, 1909.

1. To Redress the Balance, By LEONARD WILLIAMS.
2. The Need for Legislation in Regard to Anæsthetics and the Lines upon which it Should Take Place, By FREDERIC W. HEWITT.
3. On Certain Bacillus Coli Infections, By J. CHARLTON BRISCOE.
4. A Critical Review of Some Cases of Perforation of Stomach and Duodenal Ulcer, By JAMES GRANT ANDREW.
5. The Selection of Patients for Spa Treatment, By NEVILLE WOOD.
6. Observations on Ankylostomiasis and its Complications in Eastern Bengal, By R. W. BURKITT.
7. A Recent Case of Typhoid Spine, By C. JAMES WILSON.
8. A Case of Endemic Cerebrospinal Meningitis Treated by Intraspinal Injections of Flexner's Serum; Recovery, By D. D. ROSEWARNE.
9. Motoring Notes, By C. T. W. HIRSCH.

3. On Certain Bacillus Coli Infections.—Briscoe says that in treating *Bacillus coli* infections it is necessary to discriminate between the severe and milder types of cases. Because the bacilli are found in the urine it is not necessary at once to rush to vaccines, and even in the more chronic forms where vaccination will be the best remedy, it is inexpedient to neglect all other measures and rely on this alone. Many such cases must have occurred in the past when the condition was less well recognized and the patients have recovered, and no doubt many cases of unexplained febricula may have been instances of this condition. Therefore each patient ought to be treated according to the severity and duration of the disease. The milder forms will yield to the well recognized treatment of an ordinary febrile attack, a hot bath, a mercurial purge, rest in bed, and reduced diet. Should the condition not clear up at the end of a week or ten days, then the sooner more radical measures are adopted the more likely is the condition to resolve. It should be remembered that the *Bacillus coli* is an inhabitant of the intestine and in cases of constipation flourishes to a marked degree. Therefore it is important to promote a fairly free evacuation of the bowels daily. Without such an evacuation all other treatment will be unsatisfactory. In the second place it is well to give some intestinal antiseptic to hinder the growth of the organism, such as creosote or small doses of calomel (1/20 of a grain) after each meal. This latter drug in such doses has in his hands proved fairly satisfactory, but some prefer to try to replace the *Bacillus coli* with a lactic acid bacillus by means of artificially soured milk. Seeing that many of the preparations of lactic acid organisms contain no living bacilli this is less certain than it appears. The *Bacillus coli* flourishes in an acid medium; it is therefore advisable to alter the reaction of the urine, which should be rendered alkaline by the administration of the drugs usually employed to this end, to which urotropine in 5 or 10 grain doses may be added. This relieves the patient of many unpleasant symptoms and hinders the proliferation of the organism. The urine should be tested from time to time to see that enough alkali is being given, and it is sometimes advisable to give rather more than the usual dose the last thing at

night. This will often be successful in procuring a good night's rest without the employment of anodynes. Should this treatment not be successful in diminishing the numbers of the microorganisms in the urine and relieving symptoms it is advisable that inoculation should at once be resorted to. It is undoubtedly best to employ a vaccine prepared from the organism which is attacking the patient, and a vaccine can easily be prepared in the course of three days. Inoculations should be given every seven or eight days. The initial dose for an adult of 50,000,000 of dead organisms (estimated according to the method advised by Sir Almroth Wright) will be comfortably tolerated. The second dose should be half as much again, and so on. It is also advisable to have a fresh vaccine prepared each month, better results being obtained than when the same vaccine is employed continuously. This may be explained on one or two grounds. Either the vaccine loses some of its potency or the organism is able to develop power to protect itself from the antibodies produced by the host as a result of the vaccination. It will be remembered that this latter occurs in the case of trypanosomes against which atoxyl is administered. Whichever explanation is correct, the fact remains that greater improvement takes place when the vaccine is freshly prepared every month. It must always be remembered that the condition, when once well established, is very refractory, and it is well to start treatment early and to carry it out energetically. The general health must also be seen to and any abnormality should be rectified.

7. A Recent Case of Typhoid Spine.—Wilson describes such a case. In a sailor, twenty-eight years of age, typhoid fever developed while at sea. He was landed at Bombay, and after a few weeks in a hospital and ten days convalescence he rejoined his ship on January 24, 1907, apparently completely recovered. During his convalescence he had suffered from backache, but this entirely disappeared. The first definite sign of the sequela occurred three months later, in April, when after some sudden exertion he was seized with severe pain in the back, lasting about a minute. Three days later the same pain recurred while he was sitting still, and during the subsequent days he suffered from aching in the back on turning out of his bunk in the morning, the pain wearing off with exercise. He continued duty for a week, but this backache becoming steadily worse he was at length incapacitated, and again entered a hospital in Bombay on May 6th. Of his condition and progress while in the hospital the only information was as follows: His temperature for the first week was from 100° to 102° F.; his chief symptom was severe pain in the muscles of the small of the back, always worse on the left side, the pain extending round to the abdomen and being accompanied with cramps of the abdominal muscles. There were no "starting pains," but there was always intense pain on waking if the patient had turned on his side during sleep. On May 12th he was operated upon for supposed abscess in the region of the left kidney. During June there were two periods of high pyrexia, the temperature rising to 104° F. for three days on each occasion; the pyrexia was ascribed to malaria, from which the patient had previously suf-

ferred, although on these occasions there was no shivering fit, the only associated symptom being headache. Eventually the patient was sent to England, and on July 31st was admitted into the London Hospital. By this time the severity of the pain had subsided, and no further spasms of acute pain occurred. At this time the local condition was as follows: There were marked rigidity of the dorsilumbar spine, pain on jarring the spine, and deep tenderness over the first and second lumbar transverse processes. A radiograph showed much thinning of the intervertebral discs, with signs of necrosis in the vertebræ, and many osteophytes around them. An examination made to determine the patient's opsonin index with regard to the tubercle bacillus showed a high index and no evidence of autoinoculation with tubercle toxins. On the other hand, an examination of the blood with reference to the typhoid bacillus showed a marked reaction to Widal's test, instant agglutination occurring with a dilution of 1 in 100, agglutination also occurring with a dilution of 1 in 1,000. While in the London Hospital the symptoms completely disappeared, the latest persisting being rigidity. His recovery was uninterrupted, and he returned to sea at the beginning of 1908, since when he has enjoyed normal health.

BERLINER KLINISCHE WOCHENSCHRIFT

September 27, 1909.

1. My Experiences in Fifty-three Operations for Cleft Palate, with Contributions to the Technique, By CARL HELBING.
2. Thermopenetration, By VON KLINGMÜLLER and F. BERING.
3. Rice Body Hygroma of the Bursa Mucosa of the Shoulder, By K. HIRSCH.
4. Heterotopy and Metaplasia of Epithelium, By MÜNTER.
5. Opsonin, By H. REITER.
6. Biology of the Suprarenal Capsule System, By H. BEITZKE.

1. **Operations for Cleft Palate.**—Helbing asserts that the difficulties of the operation are no greater in very little children, less than three months old, than in older children, provided that sufficiently small instruments are used, while the separation of the involucrum palati duri from the upper jaw is on the contrary easier and attended with less loss of blood, and the hope of success is just as great if not greater. The danger to life from the operation he considers *nil*, while the dangers attendant on the faulty suction of a child with cleft palate are clearly pointed out. The functional results of the operation are likewise best when it is performed early. A few words are given to the technique of the operation.

2. **Thermopenetration.**—Von Klingmüller and Bering have obtained good results in gonorrhœal arthritis and old rheumatic arthritis from the penetration of heat rays (*Wärmedurchstrahlung*), but assert that it is wholly unsuited for the treatment of gonorrhœal epididymitis.

5. **Opsonin.**—Reiter says that the formation of antituberculin and opsonin do not run parallel; that the thermolability of the immune opsonin with tuberculin is very limited; that even inactive normal sera become reactive in respect to opsonin through diluted, fresh normal serum; that the strength of

the opsonin present in active normal serum and immune serum is markedly greater than that of the complement; that by bringing together præcipitin and a præcipitable substance complement is fixed, but no sure fixation of opsonin takes place; that in the serum of syphilitics the complement and opsonin fixation go hand in hand; that by determination of the opsonic fixation index the strength of the fixation can be expressed; and that in the serum of the tuberculous there seems to be in certain cases a difference between the complement and the opsonin fixation.

6. **Biology of the Suprarenal Capsule System.**—Beitzke discusses in this portion of his paper the pathology of the suprarenal capsules, their changes in the infectious diseases, in arteriosclerosis, and chronic nephritis, tumors of the suprarenal capsules, the symptoms of suprarenal insufficiency, and concludes with a study of Addison's disease.

MEDIZINISCHES KLINIK.

September 19, 1909.

1. Serum Diagnosis from the Clinical Standpoint, By F. KRAUSS.
2. The Operative Treatment of Epilepsy, By FEDOR KRAUSE.
3. Pyothorax and Pyopneumothorax, By N. ORTNER.
4. Can Insufficiency of the Tricuspid be Diagnosed Clinically? By HERING.
5. Prevention of Infection in Operations on the Eyeball, By A. ELSCHNIG.
6. Chronic Tuberculous Chorioiditis Disseminata, By ST. BERNHEIMER.
7. Operations on the Thyroid Gland, By H. SCHLOFFER.
8. Treatment of Lupus Vulgaris, By E. FINGER.
9. Secondary Scirrhus of the Skin, By C. KREIBICH.
10. Method of Determining the Acidity of the Gastric Juice, By MÜLLER.
11. Nerve End Organs and Muscle Fibres, By F. B. HOFMANN.
12. Serum Therapy (*Continued*), By F. BLUMENTHAL.
13. Diabetic Coma, By A. GIGON.
14. Studies of the Metabolism in the Mentally Diseased, By W. SEIFFER.
15. The Views Held To-day Concerning the Treatment of Chronic Purulent Otitis Media, By F. R. NAGER.

1. **Serum Diagnosis from a Clinical Standpoint.**—Krauss discusses the Wassermann reaction for syphilis and the tuberculin reaction, giving but the briefest mention of other forms of serum diagnosis. His opinion is that the internist and the general practitioner do not pay as much attention to this method of diagnosis as they should.

2. **Operative Treatment of Epilepsy.**—Krause passes briefly over reflex epilepsies of traumatic origin, as the operative treatment of such conditions has long been recognized, and considers at some length Jacksonian epilepsy. In thirty-eight cases of this disorder operated on he obtained five cures and several bad results. Twelve patients with general genuine epilepsy were operated upon, one was greatly improved, one has been free from attack for a year and a half, but no improvement worth mention was obtained in the other cases.

4. **Insufficiency of the Tricuspid.**—Hering asserts that the old teaching of the diagnosis of tricuspid insufficiency is erroneous. The positive venous pulse is not a certain sign of such a condition, it is present in many cases in which the clinical con-

dition excludes with great probability a tricuspid insufficiency, cases in which the positive venous pulse is certainly often overlooked. As a rule a constantly irregular pulse is combined with a positive venous pulse.

5. Prevention of Infection in Operations on the Eyeball.—Elschnig gives the following conditions as appertaining to the prevention of infection in operations on the eye: Normal conditions of the skin of the lid and of the lacrymal passages. Absence of gross inflammatory changes in the conjunctiva. Absence of pathogenic organisms, especially of streptococci and pneumococci, in the conjunctival sac. Absence of infectious general and organic diseases, particularly of the throat. Previous treatment of the patients when they are suffering from diseases of metabolism (autointoxications). Proper operative technique. All wounds opening the eyeball should be made subconjunctivally.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 27, 1909.

1. The Hereditary Transmission of Syphilis on the Basis of Serological and Bacteriological Studies. By BAISCH.
2. The Demonstration of the Cholera Poison. By EMMERICH.
3. Polyneuritis Syphilitica. By STEINERT.
4. The Elevation of the Auricular Portion of the Electrocardiogram in Mitral Stenosis. By SAMOJLOFF and STESHINSKY.
5. Studies Concerning the so Called Salt Fever and Concerning the Excretion of Chlorine in Infants. By FRIBERGER.
6. Miliary Tuberculosis in Childbed. By ROSE.
7. Studies Concerning the Little Bodies Found by Prowazek in Trachoma and Their Diagnostic Value. By GRÜTER.
8. A Contribution to Our Knowledge of the Dermoids of the Mediastinum Anticum. By KÄSTLE.
9. A Contribution to the Making of Homogeneous Sputum. By HAMMERL.
10. Typhoid Reinfection. By HUISMANS.
11. Oesophagoscopy and Bronchoscopy. By HEERMANN.
12. A New Nasal Splint. By ZENKER.
13. A New Method for the Determination of the Time of Coagulation of the Blood. By RIEBES.
14. Precautions Taken by the District Medical Officers Against Contagious Diseases (*Continued*). By HENKEL.
15. Heinrich Curschmann.

1. Hereditary Transmission of Syphilis.—Baisch has studied 140 cases in which hereditary syphilis was suspected bacteriologically and serologically. The cases were divided into three classes, those in which the serological reaction of the parents was negative and no spirochæta were found in the foetus, those in which there was a positive reaction of the mother and spirochæta present in the child, and those in which there was a negative reaction of the mother with spirochæta present in the child. He concludes that Wassermann's reaction alone is insufficient for an inquiry into the law of heredity of syphilis, but must be combined with the bacteriological examination of the foetus and placenta. With a negative reaction on the part of the parents syphilis can be excluded only by failure to find spirochæta in a not too greatly macerated child. The substance that prevents hæmolysis does not pass through the placental septum from the

mother to the child, or the reverse. The appearance of this substance is associated with the presence of spirochæta in the organism. Syphilis is the cause in eighty per cent. of the cases of maceration and premature death of the child; the causes in the rest of the cases include encircling of the foetus by the umbilical cord, malformation of the foetus, nephritis of the mother, and perhaps tuberculosis. The typical habitual abortion during the first four months does not belong to the symptomatology of syphilis. About seventy-five per cent. of all mothers of syphilitic children show either no clinical signs of syphilis, or only uncertain ones. The mothers of syphilitic children are truly syphilitic when they react positively, in spite of their clinical good health. Even the mothers who react negatively to the serological test are with the greatest probability infected. Colles's law of the immunity of mothers of syphilitic children, and Profeta's law of the immunity of children of syphilitic parents are both to be explained by the fact that these mothers and children are immune to infection with syphilis because they have already been infected with the disease. Colles's law has no exceptions. The best outlook therapeutically for the procreation of healthy children is to be found in an energetic and systematic specific treatment before, and especially during, pregnancy.

3. Polyneuritis Syphilitica.—Steinert raises the question whether there is a syphilitic polyneuritis, and whether we are justified in ascribing the condition to syphilis when we find a polyneuritis in a syphilitic patient, and answers it in the affirmative, giving his reasons at considerable length. He also makes some remarks on mercurial polyneuritis and professional paresis of neuritic origin.

7. Prowazek's Bodies in Trachoma.—Grüter investigated fifty cases of trachoma; a large number of cases of follicular catarrh, partly acute, partly chronic, some cases of vernal catarrh and a smaller number of other conjunctival diseases and of normal conjunctivæ. Thirty-one of the cases of trachoma presented the picture of fresh trachomatous catarrh with more or less abundant secretion. All of these patients except one had been untreated. In some the disease had been present for months, in others it had been noticed only a few weeks before. In twenty-one of these untreated cases Prowazek's bodies were found in very variable numbers. In nine of these untreated cases repeated examinations proved negative. Examination of the cases of trachoma in the cicatricial stage and of the cases of nontrachomatous disease gave in every case a negative result.

9. To Make Sputum Homogeneous.—Hammerl mixes antiformin with the sputum to render the mass homogeneous and facilitate the search for tubercle bacilli.

10. Typhoid Reinfection.—Huismans reports the case of a young woman who had an attack of typhoid fever during the spring of 1907, recovered, and was discharged cured in July. In November of the same year she had another attack that proved fatal. The autopsy showed both old typhoid cicatrices and fresh ulcers in the intestines. Huismans ascribes the second attack to a reinfection.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held in St. Louis, October 12, 13, and 14, 1909.

The President, Dr. JOHN A. WITHERSPOON, of Nashville, Tenn., in the Chair.

(Continued from page 988.)

The Latent Gallstone.—Dr. CHARLES N. SMITH, of Toledo, said that, in the light of our present knowledge of the initial symptoms of gallstone disease and of the slight or characteristic symptoms of latent gallstones, we must believe that in every case they had produced, did now produce, and would continue to produce a certain train of symptoms so distinctive in their nature that a positive diagnosis depended only upon a correct interpretation of them. The three symptoms, which were mentioned almost invariably when cholelithiasis was under consideration, were colic, jaundice, and putty colored stools. Every one of these symptoms was a late or terminal event, occurring after a more or less prolonged period of occupancy of the gallbladder by the stone, during which period distinctive and diagnostic symptoms were present and should be correctly interpreted. One of the most important advances in the surgical treatment of diseases in the upper abdomen accrued from the recognition of the fact that eighty per cent. of the cases of chronic pancreatitis were the result of gallstones and the consequent infections of the biliary tract. Medical and hydro-pathic treatment, both confessedly powerless in so far as absorption or removal of the concretion was concerned, aimed only at the control of the symptoms through abatement of the infection. Surgery, advancing on the limited possibilities of medicine, by one safe and eminently successful procedure, removed simultaneously the causal gallstones and the resultant infection.

Latent Duodenal and Gastric Ulcer.—Dr. WILLARD J. STONE, of Toledo, said that duodenal and gastric ulcers were more common than was supposed. Most of them were masked under the symptoms of functional hyperchlorhydria. The acute forms, with severe recurring hæmorrhages in certain cases, demanded surgical interference, although such patients were in an extremely critical condition and the surgical risk was extremely hazardous. Many recovered under medical care. Perforation demanded, first of all, early diagnosis. Fully sixty per cent. were wrongly diagnosed under appendicitis, ruptured gallbladder, intestinal obstruction, or acute peritonitis, not stating the cause. The earlier the interference the better the result. Goldstucker, who had recently reviewed 236 cases of perforation, found that of those subjected to operation within the first twelve hours the mortality was twenty-nine per cent.; after twelve hours the mortality was fifty-four per cent. Robson found among 155 cases of perforating ulcer in the literature of 1907 that the mortality among those of operation during the first twenty-four hours was 37.7 per cent.; after twenty-four hours the mortality was 85.5 per cent. In about one fourth of the cases in the literature of perforating duodenal ulcer no previous symptoms suggestive of the condition had existed. Fully seventy-five per cent. of uncomplicated

ulcer of the duodenum or stomach were cured by medical means; the remaining twenty-five per cent. became chronic and might be classified under: 1. Chronic ulcer with active symptoms, such as pyloric spasm, scar contraction, perigastric adhesions, or malignant transformation. 2. Chronic ulcer with latent symptoms, which might be defined as that type which gave rise to periodic attacks of distress at the height or end of gastric digestion and simulated in a large percentage of cases neurotic or functional hyperchlorhydria. Hæmorrhage or vomiting was not necessarily a symptom of chronic ulcer. The attacks were periodic, lasting a month or two, with recurrence after two or three months. The distress was relieved by taking food, milk, or an alkali. Supersecretion, which was a far more important diagnostic sign than hyperchlorhydria (which existed in about one half the cases), was practically always present. The finding, in the fasting stomach, of from 50 to 100 c.c. of a secretion, excessively acid, was extremely suggestive of ulcer. Patients often complained of raising a mouthful of acid secretion from the stomach when the organ was supposed to be empty. Elaborate laboratory investigations were not necessary. The longer the pain was relieved by food, the more probable was the lesion duodenal rather than gastric. The typical pain of chronic duodenal ulcer occurred from three to five hours after a meal. Pyloric stenosis in infants, when due to pyloric spasms from excessively acid contents (not the true congenital stenosis due to hyperplasia), might be the result of reflex irritation from a pyloric or duodenal ulcer. In an infant of six weeks dying in thirty-six hours with symptoms of laryngismus stridulus and pyloric obstruction, an ulcer one centimetre in diameter was found in the duodenum just below the pyloric ring. The diagnosis, in general, excluded cholelithiasis and, in particular, functional nonorganic hyperchlorhydria. Chronic ulcer of the duodenum and stomach was not, as a rule, cured by medical means. Such patients might, however, barring the contingency of severe hæmorrhages or perforation, be fairly comfortable with a carefully regulated diet and appropriate medical treatment. If these measures failed after a reasonable time, a surgical operation offered the best hope for cure when performed by those experienced in the surgery of the upper abdomen.

Dr. OCHSNER said that our attention had been directed constantly to the fact that we must look for gallstones, without complications, without the impaction of the stones in the ducts, whenever a patient complained of gastric symptoms, and that we could count on an early diagnosis in the majority of cases from now on. The mortality which followed operations for the removal of gallstones was small now as compared with what it was six or eight years ago. At that time patients were operated upon who were suffering from cholangitis. Another reason why the mortality was small now was that fewer harmful things were done during the operation. The gallstones were simply removed and drainage was established.

Dr. A. A. BATE, of Louisville, said that if we went back to the origin of gallstones, there was absolutely no reason why medicine should not remove every gallstone which was composed of ninety per cent. cholesterol. If the gallstones were distin-

guished, those that contained bilirubin calcium in greater proportion than ten per cent. might require surgical interference. Gallstones were formed in the gallbladder and in the ducts in very much the same way as mucin, and when stagnation of bile occurred the mucin caused putrefaction of the bile, and this in turn permitted the microorganisms which were not very hard to overcome, to pass up, and wherever cholesterin was deposited by the lecithin being broken up, the lecithin held the cholesterin in solution. There were three factors to consider in connection with gallstones—microbes of various kinds, alkalies, and acids.

Dr. TUHOLSKE said that a fairly large personal experience had taught him the important lesson that a gallbladder with stones in it could be relieved when the stones were mechanically taken out. He had spent considerable time at the great Mecca of the gallstone sufferers, Carlsbad. He had heard people say that there were enough gallstones passed in Carlsbad to pave the streets with them. He had come in contact with the best men of the profession there, had talked with them about gallstone cases, and he was sorry for any man or woman who had a gallstone that went traveling and left its comfortable little bed in the gallbladder, for then trouble was likely to begin. There was danger of lodgment in the narrow duct. There was danger of ulceration and perforation. Then came all the obstructive symptoms, the adhesions which muddled the picture and produced a serious condition. Where the gallbladder was in a fair condition, the dangers incident to the removal of the stone or stones was not great. The presence of gallstones not infrequently caused a change in the epithelium of the gallbladder, and we might find the typhoid bacillus as a nucleus in the gallbladder. All things considered, when a diagnosis of gallstones was made, it was better for the individual to have the stones taken out.

Dr. DANIEL N. EISENDRATH, of Chicago, said that, while olive oil had its function, there were cases where, either through some condition of the patient or a complication or some voluntary objection to the operation, the patient would not consent to operation. Such patients were benefited temporarily by olive oil and the Carlsbad waters; but let there be obstruction produced by the gallstones, or let there be retention of secretion, and there followed hyperemia and all the pathological processes incident to obstruction. What happened? There were cases of gallstones where the common duct stone became impacted, remained for a few days or a few weeks, and went back again. Fenger had called attention to this under the head of intermittent jaundice in connection with common duct stones. Carcinoma not infrequently developed from the constant mechanical irritation of a gallstone or gallstones. The only reliable and satisfactory treatment for gallstones was to remove them.

Dr. CARSTENS said that it was an outrage for a general practitioner or for a specialist in gastrointestinal diseases to treat patients month after month and year after year in different ways, without making a correct diagnosis. It would redound to the credit of such men to say, when they were in doubt, "I do not know whether you have duodenal ulcer or ulcer of the stomach, and I think you ought to go

to an abdominal surgeon who can make a small opening and find out whether you have gallstones or not. If you have, they can be taken out. On the other hand, if it is an ulcer, it can be excised, the opening closed, and a cure effected."

Dr. THOMAS B. NOBLE, of Indianapolis, said that several years ago he had the privilege of doing a pelvic operation which necessitated a suprapubic incision. During this operation he discovered two stones of the size of marbles in the free gallbladder. Directly thereafter that woman was given phosphate of sodium for a year. For another year she took olive oil three times a day, after which she was seized with intense pain due to a stone blocking the cystic duct and an infected gallbladder. He had to do an emergency operation, and he found these stones of the same size and the same character that they had been two years previously. Previous to that time he was not very much in favor of medical treatment in cases of preformed stones, and he was less so now.

Dr. BARR said that olive oil must be brought in contact with the gallstones to do any good, and one might as well rub olive oil on the outside of the abdomen as to give it internally, so far as concerned any effect it would have in preformed gallstones.

Dr. MCGANNON said that a member of the medical profession came under his observation two years ago as a patient who had had persistent jaundice for three months. It was not accompanied by pain. He was quite yellow at the time he saw him. He had lost flesh, and it was thought that he might be suffering from cancer. A diagnosis of cancer had been made by a very good internal practitioner. When he came under observation he was quite willing to agree with the internist in the supposition that it was a case of cancer, but, being a doctor, he put this argument before him: "If this is a cancer, you will certainly die from its effects. If it is not cancer, and you submit to operation, we may be able to give you relief. If we do not give you relief, we at least shall do you no harm. We shall not shorten your life with an exploratory incision to determine the character of the trouble." The operation was consented to and performed. The gallbladder was found to be completely shrunken, the duodenum involved in a mass of adhesions, bound down into a knuckle formation about the gallbladder and liver. The breaking up of the adhesions was effected with a great deal of difficulty. The stomach was opened in the dissection, but closed at the time. The breaking up of the adhesions relieved the condition. The gallbladder was removed, and to-day that gentleman, after four years, was able to ride horseback and is practising medicine in the State of Tennessee.

(To be continued.)

Letters to the Editor.

CHLORETONE IN CHOREA.

1250 PARK BOULEVARD,
CAMDEN, N. J., November 10, 1909.

To the Editor:

A girl, aged nine, with well marked symptoms of chorea, was removed from all excitement and placed among the best hygienic surroundings. The diet

was light and all the reflex irritations were attended to. Arsenic in the form of Fowler's solution was administered until the physiological limit was reached. The child did not seem to improve; the choreic movements were just the same as before treatment. The arsenic was stopped and in place of it I gave half a grain of chloretone three times a day, increasing by half a grain a day until two grains three times a day was reached, and then the dose was decreased by half a grain a day until it was stopped altogether. After the first day a marked improvement was noticed. The child had a soft systolic murmur at the base, which was entirely gone at the end of treatment. Ten months after treatment she has not had a relapse.

HENRY B. ORDON.

RETURNS OF VITAL STATISTICS.

LISSNER BUILDING, LOS ANGELES, CAL.

October 30, 1909.

To the Editor:

I desire to state the position California physicians are in—and also ask a question. In the first place, there is a State law requiring reports from attending physicians of all births and deaths, with appropriate fines, etc., but when I or any other physician desires to make this report he must supply his own envelope and stamp, and no provision is made for remuneration or costs. Furthermore, when out of "forms" required by law, I must either go or send a messenger to the health office for the same or inclose stamps for postage with a written request.

Can the State under these circumstances lawfully impose a fine for noncompliance with the law?

F. W. BASSETT.

P. S.—If other States want the physicians to pay the expenses of vital statistics, I don't wonder that our vital statistics are a laughing stock.

ESPERANTO AND ILO.

NEW YORK, October 23, 1909.

To the Editor:

The article on Esperanto published in the last issue of your esteemed journal is apt to mislead some of your readers. I should like, therefore, to show them briefly that it contains gross errors. The claims of its author relative to the continued successful progress of the Esperanto movement are but a repetition of the exaggerations and dreams—to use a mild expression—of the Esperanto crazed fanatics. It is not necessary to prove here this assertion nor to disprove the statement that Esperanto by virtue of excellent linguistic qualities is fit for an international language. It is sufficient to call the attention of those interested in the subject to the pamphlet I published last March (*Defects of Esperanto, Its Decline and the Growth of Ilo*, Univ. Lang. Publ. Co.), in which all these Esperanto bubbles have been blown up.

The author of the article cannot help mentioning that a very active and "vicious" attack is being made on Esperanto by a "trifling number of malcontents." It will be interesting to your readers to learn that this trifling number, as to quality, con-

tains the best former Esperantists and the most renowned scholars and linguists. I mention only Professor Wilhelm Ostwald, of the University of Leipzig, and Professor Otto Jespersen, of the University of Copenhagen. The list of illustrious names of "malcontents" given in my pamphlet can now be enlarged many times. As to the quantity of the trifling number of malcontents, it has grown so much since the appearance of the pamphlet that it probably surpasses now the number of conservative Esperantists. The former important Esperanto societies have all given up the so called "kara lingvo." I mention only the Philadelphia society, which had the most active leaders in this country and a membership of over one hundred.

Every one who has made a thorough study of the problem of an international language sees distinctly that the history of Volapük repeats itself exactly in Esperanto, and does not doubt that the latter will soon be as defunct as the former. It is, therefore, astonishing that intelligent men allow themselves to be deceived by the extant fanatic Esperantists and put so much faith in their stories about Esperanto's wonderful growth that they repeat them before the public, although they have long ago been shown to be nothing but inventions and dreams of fanatics. For further information the reader is referred to Mr. Andrew Kangas, president of the New York Ilo Society, former New York Esperanto Society, 575 Southern Boulevard, New York.

MAX TALMEY.

OPIUM IN THE TREATMENT OF CHILDREN.

NEW YORK, October 16, 1909.

To the Editor:

On page 586 of the *Journal* for September 25, a plea is entered for the advancement of the study of medical history. In the "foreword," on page 750, Pomeranz promises a series of articles to be entitled *The Infancy of Practice of Medicine and Surgery*. In the same number there appears an editorial on *Opium in the Treatment of Infants*, inspired by a paper read at the Budapest International Congress by Dr. Lust, of Brussels. Read the article and compare it with the views long held by one who has been called the "Nestor of American Medicine." Full of years, rich in honors, of ripe scholarship, and still in the active practice of his profession, Jacobi has for many decades taught the value of opium in the treatment of children.

The subject is discussed at length, in the reports on the Clinics for Diseases of Children (*New York Journal of Medicine*, 1861) and in the third edition of *Therapeutics of Infancy and Childhood*, pages 69 and 349.

In entering a plea for a more careful study of American medical writings, I should like to quote the following from Jacobi's address before the Ohio State Medical Association in 1907 (*Ohio State Medical Journal*, September, 1907):—

Opium.—We are told by the books that doses of drugs must vary according to ages. That is true, but they must also vary according to body, weight, digestion, constitution, and urgency. Moreover, there are cases of idiosyncrasy. Once I sat up all night with a gigantic man to whom I had given oedema of the throat and larynx with a single dose of five grains of iodide of potassium. On the other hand, a

little baby will bear two drachms of it daily in meningitis. But do not get frightened by what the books say merely because they say so. Maybe you are very innocent and do not know—though many of you are authors—how books and magazines and papers are liable to be made, evolved, and copied. Besides, when a mistake has been made a thousand times we call it experience, and when it has been printed a thousand times and copied and read, it is called scientific truth. For instance, you have read everywhere that *opium* is a dreadful thing to give to an infant; have been taught that the dose of a drug to be given to a baby of half a year or a year must be one twentieth or one fifteenth of that of an adult person—or very much less if the drug be an opiate. The Yale graduating class whom I told so a few years ago nodded their assent. Now, I have been in New York practice fifty-four years and have treated many thousands of babies with enteritis of different forms. You know that unless a severe diarrhoea is soon stopped the baby may die of exhaustion or of hydropencephaloid, so I stop it as soon as possible. I give one thirtieth or one fortieth of a grain of opium (Dover's powder, one third or one fourth) every two hours, with chalk or bismuth subcarbonate or subgallate—never the gritty, hard subnitrate. I have never seen a case of opium poisoning of my own making. Nor will it happen to you if you watch the first dose or the fifth or have it watched. But if you are guided by the books I warn you to watch the adult. If you give him fifteen or twenty times the dose of the baby, that amounts to half a grain or three quarters of a grain every two hours. I learned long ago that adults—unless you wish to sit up with them while they sleep—want watching after those doses. Please remember, however, I did not speak of the other aspects of the treatment of enteritis—there is more of it—but of opium only.

FRANCIS HUBER.

INDIAN SEVEN DAY FEVER AND DENGUE.

CALCUTTA, August 31, 1909.

To the Editor:

In publishing my paper entitled *Is Seven Day Fever of Indian Ports only Sporadic Dengue?* in your issue of 3d July, 1909, you did me the honor to comment on it in an editorial and inclined to the view that the two fevers were probably identical. The object of my communication to the American Society of Tropical Medicine was to elicit the opinions of those who were familiar with undoubted West Indian dengue, but, unfortunately, no discussion by the members present has been reported. In the preceding year's transactions of the society a paper on an epidemic of dengue in Cuba was recorded by Dr. Aristides Agramonte, so I sent him my original paper on seven day fever, and he has been kind enough to give me his valuable opinion on the disputed question of its identity with West Indian dengue or not, which is worthy of record. In his letter to me he points out that the 1905 Cuba dengue differed greatly from seven day fever in its epidemiological character, in that it was extensively epidemic in that year, yet was not present in a sporadic form either in the previous or succeeding years. On the other hand, seven day fever is yearly present in a sporadic form in Calcutta. Clinically the Cuba disease differed from the Indian one by rarely lasting more than four or five days, the secondary rise being of short duration and slight elevation; the pains were typically "break bone" in character (which has never been known in Calcutta in the sporadic disease, although well marked in the undoubted epidemics of dengue there in 1824 and 1872), while the convalescence was protracted, in some cases for months. The pulse, however, was often slow in the Cuba dengue. For these reasons Dr. Agramonte writes: "It is

evident that you have been enabled to call attention upon a disease which, in spite of its similarity with dengue fever, has certain features peculiar to itself and I think sufficiently prominent to differentiate one from the other. There is no doubt in my mind that we had to do with an epidemic of undoubted dengue fever, and the temperature charts as, well as the description of the 'seven day' fever you have observed denote a condition entirely new to me and one which I am sure has not come under my observation."

LEONARD ROGERS, I. M. S.

MOVING DAY.

611 WEST 114TH STREET, October 18, 1909.

To the Editor:

In our war on things unsanitary would it not be an excellent idea to start a crusade against the vans, pads, coverings, and methods employed by the majority of moving companies in greater New York city? The decrease in the death rate has occurred, I believe, in part by the change from May to October as the popular moving time. Household furniture and goods have had more chance for airing and ventilation after the warm summer than in the spring. Thus we may account for decrease in virulence of infectious diseases.

ALBERT E. KOONZ.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Practice of Medicine. A Textbook for Practitioners and Students with Special Reference to Diagnosis and Treatment. By JAMES TYSON, M. D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University; Physician to the Pennsylvania Hospital, etc. Fifth Edition, Revised and Enlarged. With Five Plates and 245 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xxv-1438. (Price, \$5.50.)

The fifth edition of this standard textbook appears in an enlarged form with many of the articles rewritten. The assistance of Dr. Trudeau and Dr. Baldwin has been sought in discussing the modern treatment of tuberculous disease, and that of the late Dr. J. Dutton Steele in describing the testing for occult blood in diseases of the stomach. Dr. John Rogers and Dr. Silas P. Beebe have been consulted on tetany and exophthalmic goitre, while Dr. Allen J. Smith has rewritten his contribution on the animal parasites. The section on diseases of the nervous system is very complete and unusually clear as to diagnosis. The nearly 1,500 pages are compressed into a very manageable volume by being printed on an excellent thin but opaque paper, and several handsome colored illustrations add to the appearance as well as to the value of the book. Most readers will be grateful for the full discussion of treatment.

Practical Dietetics. With Special Reference to Diet in Diseases. By W. GILMAN THOMPSON, M. D., Professor of Medicine in the Cornell University Medical College, New York, etc. Fourth Edition, Illustrated, Enlarged, and Completely Rewritten. New York and London: D. Appleton & Co., 1909. Pp. xxvi-928.

Since 1895, when Thompson's *Practice of Dietetics* appeared for the first time, great progress has

been made in the study of dietetics, and it is only natural that the present, the fourth, edition has been greatly changed, necessitating, as the publishers state, a printing from new plates. Comparison with the first edition will easily convince the reader of these changes, as, for example, in the paragraphs on the analyses of food, calorimetric computations, investigations into the dietetic habits of the different races and classes, the preparation of food, the dietetic treatment of chronic nephritis, typhoid fever, diabetes, intestinal autointoxication, etc.

Dr. Thompson reports the views held by himself and others without taking sides in the discussion, for example, in the chapter on Foods and Food Preparations, in which he also speaks of sterilization and pasteurization of milk. The reader is left to decide for himself whether he should advise pasteurization in certain cases or not. There are many tables and summaries of dietetic directions for the various stages of life, from infancy to old age, for different occupations, and for healthy and sick persons.

Dr. Thompson, whose book was well received in its first edition, can be assured that the profession will accept this new issue with even greater attention.

The Sexual Disabilities of Man and Their Treatment. By ARTHUR COOPER, Consulting Surgeon to the Westminster General Dispensary, London, etc. New York: Paul B. Hoeber, 1909. Pp. 184.

Sexual disabilities will always remain an interesting chapter in medicine. Cooper's account is very much to the point. It is a clean, practical book; and where the author cites cases there is nothing which will appeal to the debased taste which looks for descriptions to stimulate its phantasy; he only gives cold facts without the so often unnecessary embellishments. Dividing his book into two parts, the author deals with sterility and impotence in man and with the treatment if such is possible. The long experience of the author in this branch of medicine renders the book very valuable. It was over twenty years ago that Mr. Cooper translated Ultzmann's *Ueber Potentia Generandi und Potentia Coeundi* into English, which translation appeared in 1887 with annotations under the title *On Sterility and Impotence of Man*. The translation was well received, and we are sure the same will be the case with this original book of Mr. Cooper's. It will be of great assistance to the general practitioner and can be well recommended.

Physical Diagnosis. By RICHARD C. CABOT, M. D., Assistant Professor of Medicine in Harvard University. Fourth Edition, Revised and Enlarged. With Five Plates and Two Hundred and Forty Figures in the Text. New York, William Wood & Co., 1909. Pp. xxii-579. (Price, \$3.)

The fourth edition of Professor Cabot's book has not been much altered from its forerunners. The author treats of his subject in twenty-four chapters and illustrates his text with cuts. The field of physical diagnosis is a large one, and it was a good idea of the author to compile a book which would treat this subject only, including also a description of the instruments used. He has well carried out his plan. The text is well written and the arrangement of the matter is good. Some of the cuts are not so clear as they should be.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By PHILIP B. HAWK, M. S., Ph. D., Professor of Physiological Chemistry in the University of Illinois. With Two Full Page Plates of Absorption Spectra in Colors, Four Additional Full Page Color Plates, and One Hundred and Twenty-six Figures, of Which Twelve are in Colors. Second Edition, Revised and Enlarged. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xvi-447. (Price, \$2.50.)

The first edition of this book was the subject of a favorable notice in the issue of the *Journal* for June 8, 1907. That a second edition should be called for so soon would appear to argue well for the popularity of the work. Developments in the field of physiological chemistry have, however, been rapid and important during the past two years, and these of themselves have been sufficient to necessitate an early revision of the volume. This second edition is practically a new work, having been extensively revised, rearranged, and in parts rewritten, with the introduction of many new tests and reagents. The new classification of proteins has been adopted.

In this edition the author rectifies an inadvertent omission of credit in the former one. He expresses his obligation to the laboratories of physiological chemistry at Yale University and at Columbia University (College of Physicians and Surgeons), in the latter of which he was assistant to Professor W. J. Gies for two years.

The volume impresses us as being especially well adapted for class teaching, but it also forms a useful reference book, being especially rich in formulas and practical methods of work. A valuable feature to which we may again allude is the illustrations, which are usually well defined, clear, and informing.

Sprains and Allied Injuries of Joints. By R. H. ANGLIN WHITELOCKE, M. D., M. C. (Edin.), F. R. C. S. (Eng.), Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xi-241.

Minor surgery has seldom been presented in a more attractive form than in this little book from the Oxford University Press. It deals with the injuries of muscles, tendons, and ligaments received on the athletic field, and undergraduates furnish many of the disabled but still shapely limbs and torsos so well described and photographed. There is an abundance of local color, and the reader breathes the atmosphere of an old university town. As might have been expected, the composition is daintily precise, almost meticulous. As the result of exact observation prompted by unusual appreciation of mechanical details, the book has a positive value for the practical surgeon. Interesting pages are those given to the dislocations of tendons and the disorders of the cartilages of the knee and to the apparent ossification of muscles after sprains. The book might almost be called a treatise on military surgery, as a large proportion of the casualties cited occurred on the football field, where joints are dislocated, tendons ruptured, and muscles torn across, with collections of blood in the sheaths of the abdominal and upper femoral regions and other loose parts and spaces of the body. The mortality in these battles, however, is practically nil, contrasting agreeably with the fatality which attends the game in this country. The value of the book is increased by an admirable index.

MEDICOLITERARY NOTES

Baron Anselme Richand, a skillful surgeon and professor at the Ecole de médecine, who flourished from 1779 to 1840, was not only a scientist of authority, but a "stylist" of the first rank. Not the least of his titles to renown is the fact that to him Brilat-Savarin dedicated the sublime masterpiece, *La Physiologie du goût*; and with good reason, for it was at the earnest request of the doctor that the famous dietetician decided to print the work. The author carried out the playful threat he had made his friend, *viz.*, to publish to the world the doctor's only vice, that of eating too fast.

Cato, being a great general and otherwise distinguished, fell into a familiar error in imagining he alone had discovered in an old book the real secret of the cure of disease. He became anxious, probably after some discussion with one of the Greek physicians, that they should all be banished, and acted with the accustomed intolerance of such men toward all who failed instantly to perceive the inspired value of his methods. What the latter amounted to we may judge from the fact that Cato considered cabbage to be almost a panacea and that he treated fractures and dislocations by incantations, using such formulæ as *haut, haut, haut, ista, ista, ista, ardanuabon dunnaustra*—meaningless and untranslatable rubbish. He must have been a rare old crank. We can imagine the small boys running after him in the streets and shouting *Hey, Cato! delenda est Carthago*.

The asp's power of erecting itself when attacked caused that reptile to be credited with supernatural tributes. The two snakes on the caduceus are merely an emblem of peace; they are the couple pound fighting by Mercury, who separated them with his wand, to which they clung.

NEW PUBLICATIONS.

Wood, Francis Carter.—Chemical and Microscopical diagnosis. Second Edition. With 192 Illustrations in the text and Nine Colored Plates. New York and London: Appleton & Co., 1909. Pp. xxiv-767.

Keirle, Nathaniel Garland.—Studies in Rabies. Collected writings. With an Introduction by William H. Welch and Biographical Sketch by Harry Friedenwald. Testimonial edition. Baltimore, 1909. Pp. 381.

Neumann, Heinrich.—Otitic Cerebellar Abscess. Translated by Richard Lake, F. R. C. S. London: H. K. Lewis, 1909. Pp. 156. (Price, \$4.)

Ogden, J. Bergen.—Clinical Examination of the Urine and Urinary Diagnosis. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. Illustrated. Third Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1909. Pp. (Price, \$3.)

Adami, J. George, and Nicholls, Albert G.—The Principles of Pathology. Volume II. Systemic Pathology. With 9 Engravings and Fifteen Plates. Philadelphia and New York: Lea & Febiger, 1909. Pp. xv-1082. (Price, \$6.)

Aikens, Charlotte A.—Clinical Studies for Nurses. A textbook for Second and Third Year Pupil Nurses and a handbook for all who are engaged in Caring for the Sick. Illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 510.

Schnirer, M. T.—Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Kaiser u. a. deutschen Kliniken. Würzburg: A. Stuber, 1909. Pp. 408. (Price, 2 M.)

Dench, Edward Bradford. Diseases of the Ear. A Textbook for Practitioners and Students of Medicine. With sixteen Plates and 158 Illustrations in the Text. Fourth

Edition, Revised and Enlarged. New York and London: D. Appleton & Co., 1909. Pp. iv-718. (Price, \$5.)

Judd, Aspinwall.—Practical Points in the Use of X Ray and High Frequency Currents. New York: Reban Company, 1909. Pp. xiii-189.

Official News.

Public Health and Marine Hospital Service
Health Reports:

The following cases of, and deaths from, smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, United States Public Health and Marine Hospital Service, during the week ending November 12, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Alabama—Mobile.....	Oct. 17-23.....	1	
Georgia—Macon.....	Oct. 16-31.....	3	
Illinois—Chicago.....	Oct. 24-30.....	2	
Indiana—Muncie.....	Oct. 1-31.....	9	
Kansas—Labette County—Parsons.....	Sept. 1-30.....	1	
Kansas—Scott County.....	Sept. 1-30.....	1	
Kansas—Shawnee County.....	Sept. 1-30.....	1	
Nebraska—Topeka.....	Sept. 1-30.....	2	
Louisiana—New Orleans.....	Oct. 1-30.....	1	
Michigan—Saginaw.....	Oct. 10-16.....	3	
Montana—Dawson County.....	Sept. 1-30.....	2	
Montana—Silver Bow County.....	Sept. 1-30.....	1	
New York—Buffalo.....	Oct. 24-30.....	1	
Ohio—Springfield.....	Oct. 17-30.....	6	
Oregon—General.....	July 1-31.....	21	
Oregon—General.....	Sept. 1-30.....	15	
Oregon—Portland.....	Sept. 1-30.....	8	
Texas—San Antonio.....	Oct. 1-30.....	1	
Utah—General.....	Sept. 1-30.....	59	
Wisconsin—La Crosse.....	Oct. 24-30.....	1	

<i>Smallpox—Foreign.</i>			
Brazil—Bahia.....	Sept. 25-Oct. 8.....	25	15
Brazil—Pernambuco.....	Aug. 16-31.....		17
Brazil—Rio de Janeiro.....	Sept. 27-Oct. 10.....	3	
China—Shanghai.....	Sept. 25.....		Present
Great Britain—London.....	Oct. 3-9.....	1	
India—Bombay.....	Sept. 29-Oct. 5.....		4
India—Madras.....	Sept. 25-Oct. 1.....		2
India—Rangoon.....	Sept. 1-30.....		1
Italy—General.....	Oct. 11-17.....	37	
Italy—Genoa.....	Oct. 1-15.....	1	
Italy—Naples.....	Oct. 11-17.....	4	
Mexico—Medellin.....	Oct. 18-24.....		Present
Mexico—Monterrey.....	Oct. 18-24.....		1
Mexico—Soledad.....	Oct. 18-24.....	3	
Mexico—Veracruz.....	Oct. 24-26.....	10	
Russia—Moscow.....	Oct. 3-9.....	2	
Russia—Odessa.....	Oct. 3-9.....	12	
Russia—Riga.....	Oct. 3-10.....	1	5
Russia—Warsaw.....	Sept. 5-11.....		2
Spain—Almeria.....	Sept. 1-30.....		3
Spain—Barcelona.....	Oct. 12-18.....		4
Spain—Huelva.....	Sept. 1-30.....		14
Spain—Valencia.....	Oct. 9-16.....	1	
Spain—Vigo.....	Oct. 9-16.....		1
Uruguay—Montevideo.....	Aug. 1-31.....		8

<i>Cholera—Foreign.</i>			
Belgium—Boom.....	Oct. 26-30.....	9	6
China—Amoy.....	Sept. 19-25.....		22
China—Shanghai.....	Sept. 19-25.....		Present
Germany—Andreischen.....	Nov. 1.....	3	
Germany—Heydekrug.....	Nov. 1.....	1	
Germany—Lübeck district.....	Nov. 1.....	3	
Germany—Niederlungsdorf.....	Nov. 1.....	3	
India—Bombay.....	Sept. 29-Oct. 5.....		6
India—Rangoon.....	Sept. 12-25.....		10
Japan—Batavia.....	Sept. 12-25.....	200	100
Russia—St. Petersburg.....	Oct. 9-25.....	266	111
Russia—Moscow.....	Oct. 9-25.....		1
Russia—Riga.....	Oct. 10-16.....	4	2

<i>Yellow Fever—Foreign.</i>			
Brazil—Paraná.....	Oct. 9-16.....	4	2
Brazil—Pernambuco.....	Aug. 16-31.....		1
Mexico—Merida.....	Oct. 20-21.....	2	1

<i>Plague—United States.</i>			
California—Contra Costa County—Oakland.....	Oct. 26.....	1	

<i>Plague—Foreign.</i>			
Brazil—Bahia.....	Sept. 25-Oct. 8.....	18	13
Brazil—Rio de Janeiro.....	Oct. 3-10.....		
China—Amoy.....	Sept. 19-25.....		38
Japan—Kobe.....	Sept. 25-Oct. 2.....	7	
India—General.....	Sept. 19-25.....	657	3,595
India—Bombay.....	Sept. 29-Oct. 5.....		15
India—Rangoon.....	Sept. 12-25.....		5

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending November 10, 1909.

ATILES, P. DEL V., Acting Assistant Surgeon. Leave of absence granted for thirty days from August 18, 1909, with pay, and fifteen days from September 17, 1909, without pay, amended to read thirty days from August 23, 1909, with pay, and two days from September 23, 1909, without pay.

BURKHALTER, J. T., Passed Assistant Surgeon. Granted seven days' leave of absence from November 8, 1909.

CARTER, H. R., Surgeon. Granted fifteen days' leave of absence from November 10, 1909, on account of sickness.

CREEL, R. H., Passed Assistant Surgeon. Upon arrival of Surgeon W. G. Stimpson, directed to proceed to Baltimore, Md., and report to the medical officer in command for duty and assignment to quarters.

DE VALIN, HUGH, Passed Assistant Surgeon. Granted one month's leave of absence from November 10, 1909.

FRANCIS, EDWARD, Passed Assistant Surgeon. Detailed as assistant director of the Hygienic Laboratory, effective November 5, 1909; directed to proceed to Detroit, Mich., Chicago, Ill., and Milwaukee, Wis., upon special temporary duty.

GAHN, HENRY, Pharmacist. Granted one day's leave of absence, November 5, 1909, under paragraph 210, Service Regulations.

GIBSON, F. L., Pharmacist. Granted fifteen days' leave of absence from December 17, 1909, and twenty days' leave of absence from January 1, 1910.

MASON, M. R., Pharmacist. Granted two days' leave of absence in October, 1909, under paragraph 210, Service Regulations.

MASON, W. C., Acting Assistant Surgeon. Granted five days' leave of absence from November 18, 1909.

MCCOY, G. W., Passed Assistant Surgeon. Directed to proceed to Berkeley, Cal., upon special temporary duty.

MCINTOSH, W. P., Surgeon. Granted ten days' leave of absence from November 10, 1909.

MIRANDA, R. U. LANGE, Acting Assistant Surgeon. Leave of absence, granted for one month from October 8, 1909, without pay, amended to read seven days from October 8, 1909, without pay.

OAKLEY, J. H., Surgeon. Granted one day's leave of absence, November 5, 1909.

RICHTER, H. C., Acting Assistant Surgeon. Granted fifteen days' leave of absence from October 15, 1909.

SPRATT, R. D., Passed Assistant Surgeon. Granted twenty days' leave of absence from November 17, 1909.

STONER, G. W., Surgeon. Granted seven days' leave of absence from October 30, 1909, under paragraph 189, Service Regulations.

TERRY, M. C., Acting Assistant Surgeon. Leave of absence granted for twenty-one days from October 1, 1909, with pay, and nine days from October 22, 1909, without pay, amended to read twenty-one days from October 2, 1909, with pay, and two days from October 23, 1909, without pay.

WHITE, J. H., Surgeon. Granted four days' leave of absence en route to station.

WOLLENBERG, R. A. C., Assistant Surgeon. Relieved from duty at Naples, Italy, and temporary duty at Detroit, Mich., and directed to proceed to San Francisco, Cal., and report to Passed Assistant Surgeon W. W. King for duty.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 13, 1909.

CHRISTIE, A. C., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division; will sail on January 15th for San Francisco, Cal.

DEAR, W. R., First Lieutenant, Medical Corps. Relieved from duty at his present station; will proceed to San Francisco, Cal., and sail on January 5th for Philippine service.

DUNBAR, L. R., First Lieutenant, Medical Corps. Relieved from duty at his present station; will proceed to San Francisco, Cal., and sail on January 5th for Philippine service.

GOSTIN, B. S., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division; will sail on January 15th for San Francisco, Cal.

JARRETT, A. R., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hamilton, N. Y.; will proceed home and then stand relieved from active duty in the Medical Reserve Corps.

JENKINS, F. E., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division; will sail on January 15th for San Francisco, Cal.

JOHNSON, H. H., First Lieutenant, Medical Corps. Relieved from duty in the Philippines Division; will sail on January 15th for San Francisco, Cal.

KENNEDY, J. M., Major, Medical Corps. Ordered to take temporary charge of the office of the Chief Surgeon, Department of California.

MERRICK, J. N., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division; will sail on January 15th for San Francisco, Cal.

MURTAUGH, J. A., Captain, Medical Corps. Ordered to report at San Francisco, Cal., for examination for promotion.

TREUBOLTZ, C. A., First Lieutenant, Medical Reserve Corps. Relieved from duty at his present station; will proceed to San Francisco, Cal., and sail on January 5th for Philippine service.

WALLACE, G. S., First Lieutenant, Medical Reserve Corps. Granted leave of absence for fourteen days.

WEBBER, H. A., Major, Medical Corps. Granted leave of absence for two months.

WRIGHT, F. S., First Lieutenant, Medical Corps. Relieved from duty at his present station; will proceed to San Francisco, Cal., and sail on January 5th for Philippine service.

Navy Intelligence:

No changes in the stations and duties of officers serving in the Medical Corps of the United States Navy were reported for the week ending November 13, 1909.

Births, Marriages, and Deaths.**Died.**

ACKER.—In Hannibal, N. Y., on Thursday, October 28th. Dr. Dillon F. Acker, aged sixty-four years.

AMES.—In Fremont, Ohio, on Saturday, November 6th. Dr. William V. Ames, aged eighty-eight years.

BACON.—In Wellsboro, Pennsylvania, on Tuesday, November 2d, Dr. M. L. Bacon, aged seventy-two years.

CARD.—In Providence, Rhode Island, on Monday, November 8th, Dr. Frank E. Card, aged forty-two years.

CATLIN.—In Norfolk, Virginia, on Sunday, October 31st. Dr. Joseph A. Catlin.

DAVISSON.—In Los Angeles, California, on Monday, November 1st, Dr. John Harvey Davissou, aged sixty years.

GRANT.—In New York, on Monday, November 8th, Dr. Gabriel Grant, aged eighty-three years.

GRANT.—In Rochester, N. Y., on Monday, November 8th, Dr. Rolla C. Grant, aged fifty-four years.

HOGAN.—In New York, on Sunday, November 7th, Dr. Edward J. Hogan, aged seventy-two years.

HOLT.—In Newport News, Virginia, on Saturday, November 6th, Dr. M. Q. Holt, aged eighty-four years.

IVES.—In Long Beach, California, on Thursday, November 4th, Dr. Franklin B. Ives, aged eighty-six years.

JOHNSON.—In East Nassau, New York, on Monday, November 8th, Dr. F. M. Johnson, aged forty-five years.

KEATINGE.—In New York, on Thursday, November 11th, Dr. Harriette C. Keatinge.

RICKER.—In Fenton, Michigan, on Sunday, October 31st, Dr. A. M. Ricker, aged seventy-eight years.

ROBBINS.—In Vicksburg, Mississippi, on Thursday, November 4th, Dr. Samuel D. Robbins.

SEYMOUR.—In Utica, N. Y., on Monday, November 8th, Dr. George Seymour, aged seventy years.

STRONG.—In New York, on Sunday, November 7th, Dr. George W. Strong, aged seventy-two years.

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Original Communications.

THE RELATION OF TUBERCULOSIS TO INFANT MORTALITY.*

By CLEMENS F. VON PIQUET, M. D.,

Baltimore,

Professor of Pediatrics, Johns Hopkins University.

I think we are all aware of the frequency of tuberculosis among adults as well as among children, but I do not know whether we realize the great number of such cases among nurslings. You will find a ready proof of this by examining the statistics which have been very carefully worked out in the last years by post mortem examinations made in the hospitals. To give you some data, I should like to quote Beitzke, of Berlin, who found tuberculosis present at the post mortem examination of infants in the first year of age in ten per cent. of the cases. A larger percentage was found in Vienna, a city known for the prevalence of this disease. Hamburger and Ghon discovered among 318 post mortem examinations of children, who died within the first year, the following proportion of tuberculosis: Four per cent. of those who died within the first trimester; eighteen per cent. of those who died within the second trimester; and twenty-three per cent. of those who died within the third and fourth trimester.

Martha Wollstein, in investigating 882 cases in Holt's Children's Hospital in New York, gives as a result somewhat smaller figures, still they show that New York is not far behind Vienna in the number of tubercular cases. She found in the first trimester 1.8 per cent.; second trimester, eleven per cent.; third trimester, sixteen per cent.; fourth trimester, twenty-three per cent.

In comparing the figures for the second year, those of Hamburger and Wollstein are practically the same, Hamburger giving forty per cent. for the whole year, Wollstein thirty-four per cent. for the first half and forty-four per cent. for the second half.

The reason why, until the last years, the great influence of tuberculosis on infant mortality was not considered of so much importance is due to the fact that the clinical symptoms in that age do not so easily manifest themselves, as in later periods of life. Adults who die from tuberculosis, nearly always show plainly signs of lung tuberculosis months or years before their death, while infants meet death under several forms.

The first form of tuberculosis in infants, called chronic tuberculosis of the visceral glands, is very often mistakenly looked upon as gastrointestinal marasmus. Without showing any signs on the outside of the body, the children gradually lose in weight and die after a few months. In the post mortem examination you will find a tuberculous condition and caseation of nearly all the glands of the lungs, of the peritoneum and mesentery. Sometimes there is nothing to be found except this glandular degeneration: Sometimes the post mortem examination shows besides this, tuberculous knots in the brain, bones, spleen, liver, and, kidneys.—The second form resembles more the tuberculosis in adults. There is a slow emaciation of the entire body, but the chest is comparatively large, the latter being quite a contrast to the emaciated condition of the extremities and face. The children suffer with a chronic cough, and a great many râles can be heard over all parts of the lungs. On percussion there are generally some points of dullness. In the post mortem examination one finds, besides a tuberculosis of the bronchial glands, a lobular pneumonia of tuberculous character, very often combined with cavities.—A third form comprises the cases of caseous pneumonia which also give very definite lung symptoms on percussion and auscultation, whereas the cough is sometimes lacking.—The last form, which is more common than the others, is miliary tuberculosis, which is characterized on post mortem examination by the great number of very small tubercles spread over nearly all organs. Among the symptoms of the miliary form, the brain affection, tuberculous meningitis, nearly always predominates, that is, pressure is exerted by the cerebrospinal fluid, largely produced within the brain sinuses, through the presence of miliary tubercles. In fewer cases of miliary tuberculosis, the symptoms of the lungs prevail; we find a subacute bronchitis with high fever, and a marked swelling of the spleen, again a form in which tuberculosis is often not recognized. I am speaking of the deadly forms only, because in the first year nearly every infection leads to death.

There is a great difference between the consequences of a tuberculous infection in infancy, especially of the first year, and the later stages of childhood. We now know that a large number of children between the ages of six and fourteen are infected with tuberculosis without showing any clinical symptoms. In cases of this kind, tuberculosis is localized in the lymph nodes, and does not spread over the whole body. In infancy the power of localization of tuberculosis does not yet seem to be de-

*Read before the Conference on the Prevention of Infant Mortality, New Haven, November 11, 1909.

veloped. An incipient state of tuberculosis is suspected by a gradual decrease in weight without any signs of a disease of the bowels or the skin, or of any other acute infection. In some cases it is suggested by a difficulty in breathing, which appears especially as a slight tracheal snoring during the night, a symptom due to the enlargement of the glands near the division of the trachea. In other cases symptoms are seen on the skin, in the bones, especially an enlargement of the fingers and toes, subcutaneous tuberculous gums, and lately attention has been turned to various small eruptions on the skin which are called tubercules. In all these cases the diagnosis is best established by the different kinds of tuberculin tests, especially my cutaneous test. A drop of old tuberculin, which is an extract of tubercle bacilli, is put on the skin and then a small superficial scarification is made by turning, with some pressure, a vaccination lancet on the surface of the skin. The next day only those individuals show an inflammatory reaction at the point of vaccination who have already been infected with tuberculosis, whereas the healthy individuals show no reaction at all. Every time we find a positive reaction, we can say with certainty that the child is tuberculous, and it depends on the age of the child what the prognosis will be. In older children the prognosis is only fatal if the clinical symptoms are of a wide spreading nature. The reaction alone in an apparently healthy child has no serious indication. In an infant below one year, however, the prognosis will be a very doubtful one, even where there are no clinical symptoms, for we know by experience that at that age the disease is not likely to be localized.

Why is it that so many infants become tuberculous? It has now been proved that an infection of tuberculosis is very seldom inherited. Some cases have been found in which the newly born has tuberculous germs from a tuberculous placenta, but they are so rare that they practically play no part when compared with all the other cases which are infected after birth. If we go carefully into a detailed study of the possibilities of infection, we find in nearly every case of tuberculous infants another person in the neighborhood who has an open tuberculosis. Whether the infection is directly through droplets containing tuberculous germs which are coughed out by the infected person and then breathed in by the child, or by bacilli taken in from the dust of the room in which tuberculous sputum has been dried out, is a question which has not yet been decided. In comparison with the danger of infection from other human beings in the neighborhood, that of infection through tuberculous milk is probably rather small. Still, the milk of cows with tuberculous udders very often contains tubercle bacilli, and we must consider it dangerous, and therefore remove all tuberculous cows from farms that supply milk for babies; if this is not done, or if we do not know the condition of the milk, then it must be boiled.

The most important way to prevent tuberculosis in infants is, however, to be careful that the baby does not come in contact with anyone who is likely to have tuberculosis of the lungs. We can ascertain almost with certainty that tuberculosis can be stamped out as a whole if this were possible socially,

because in one instance it has been successfully carried out. In cattle, which are infected in a similar way as human beings, the disease was almost gotten rid of by adopting the system of Bang. It is carried out as follows: All cattle in one farm are tested with tuberculin, those which do not react are sent to a new farm. All calves which are born of tuberculous mothers are immediately separated from the mother and receive milk only after it has been boiled. Afterward they are sent to the healthy farm. After a number of years there are no more cattle in the infected farm and no tuberculous cases in the new farm. We cannot apply that system to humanity, except in orphan asylums, because it would interfere with our family relations, but still we can make people understand that a nursing is no toy for its relatives, and especially sick relatives, and that parents who have an open tuberculosis do better to apply as much caution as possible in kissing the child or coughing in its presence. America is now realizing the danger of tuberculosis, and I hope it will also realize the importance of raising a healthy generation by keeping it free from that dreadful disease.

118 WEST FRANKLIN STREET.

THE SURGICAL TREATMENT OF POSTERIOR DISPLACEMENTS OF THE UTERUS.*

BY CHARLES CLIFFORD BARROWS, M. D.,
New York.

In an active practice of gynecology extending now over a period of almost twenty years, experience has shown me that displacements of the uterus, with the pathological conditions, dependent upon them, comprise a large share of the noninflammatory troubles peculiar to women. Of these displacements, those which result in a position of the uterine body posterior to that which it occupies in its normal state form much the larger share. Except in few instances, nonsurgical measures prove purely palliative, and in most instances are unsanitary and unsatisfactory.

My purpose in offering for your consideration tonight these personal experiences with the surgical treatment of posterior displacements of the uterus is to provoke, if possible, such a discussion as will illustrate the advantages of those operations which have proved satisfactory in your hands and mine, and to point out, if possible, some of the disadvantages and dangers of those procedures which have failed to meet with our approval.

In general medical and surgical gatherings such as compose the meetings of the Bellevue Alumni Society, a discussion of this character is of vastly more benefit than in a society composed entirely of gynecologists. This is particularly so in this case, because in probably a majority of instances these patients come into other hands before they reach the office of the specialist. These men should be in a position to at least discuss with the consultant the advantages or disadvantages of any particular surgical procedure which he may suggest to the patient.

I shall not attempt to describe all or any great

*Read before the Bellevue Alumni Society (New York) held in June, 1909.

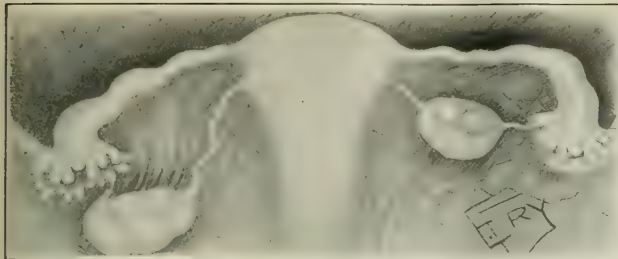


FIG. 1.—Position of Fallopian tubes and uterus. Case II.

part of the many operations which have been put forth for the relief of this very common complaint. Some of them are good and safe, others are safe and inefficient, and others should demand the intervention of the police if suggested to an intelligent physician or patient—such for instance as that brutal and barbaric form of torture disguised under the name of operation, by Schuching. In this procedure, you remember, a needle concealed in a curved cannula and armed with a stout cord was introduced into the uterus and thrust through its anterior wall to return again into the vagina. The cord was then drawn through and tied in front, thus bending the uterine body upon itself anteriorly. At times the needle might pass through the bladder or again perhaps through a coil of intestine, but these "accidents" the author tells us were not very common. Could one conceive, possibly, of a more dreadful proceeding?

It seems to me that the object of all surgical procedures in these cases should be to restore the uterus to a position as nearly as possible to the normal and to maintain it there with comfort and safety to the patient, this, of course, carrying with it a relief of the symptoms from which the patient has been suffering.

I believe we can safely leave out of the question vaginal fixation and all those operations having this plan of approach for their base, since I think I am correct in saying that except in the hands of a very few surgeons they have been proved to be distinctly unsatisfactory.

This brings us then, naturally, to the consideration of two distinct principles of procedure, the first having for its basis the artificial suspension or fixation of the uterus to the abdominal wall by means of inflammatory adhesions between that organ and the parietal peritonæum; the second depending for its success upon the restoration of the uterus to its correct position in the pelvis, and the maintaining of it there free from adhesions by utilizing its own natural supports.

Nature has been almost prodigal in its supply of ligaments to the uterus, since weight for weight, there are very many more such ligaments furnished this organ than any other organ in the human body. But the reason for this is very clear, since no other organ undergoes the enormous changes in size and position that the uterus does during the period of gestation. These supports are so constructed as to accommodate themselves to the changes taking place in their supported organ. This fact itself would

lead us to turn to these natural means of support for a correction of the displacement, and by utilizing them leave the uterus in a position to undergo its changes without difficulty or danger.

In the study of all the cases of retroposition of the uterus that have come into my hands for operation, I must divide them into two simple groups: 1, Hospital patients; 2, private patients. In the first group—that is, patients operated upon in the hospital—not private patients—296 cases. In the second group—private patients—102 cases, making a total of 398 cases.

The wisdom of this division for purposes of study can be easily understood when one comes to look up his hospital histories. The patients are discharged "cured," with careful instructions to report or return if the cure is not complete or permanent, and they disappear never to be seen again. This is particularly so, as we all know, of the class of patients coming to us in Bellevue Hospital, and it is there that by far the greater part of my operative work has been done. In attempting to draw conclusions from one's operative work it would plainly be unfair to assume that all of these patients were actually cured or relieved of their symptoms. We can only



FIG. 2.—Position of fetus in uterus which has been opened (Case II).

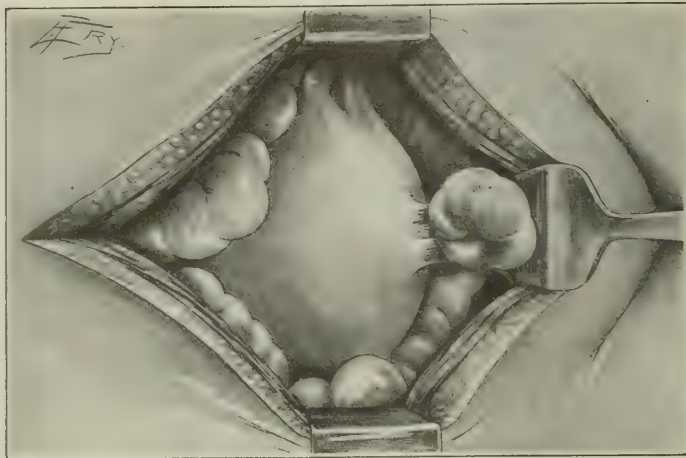


FIG. 3. Showing condition of abdomen in Case III.

say that they left the hospital anatomically cured of the displacements.

But the 102 cases which come under the head of private patients furnish in themselves sufficient material for an intelligent study of the results obtained by me in my attempts to relieve posterior uterine displacements by surgical means. I have been able to follow closely practically all of these cases, and five of them have been under my obstetrical care subsequent to the operation for displacement.

Of the 398 cases demanding operation for posterior displacement of the uterus, 361 patients were subjected to some form of shortening of the round ligaments, and thirty-seven to some form of attachment of the uterus to the anterior abdominal wall. Of the 361 cases in which the round ligaments were made use of for the correction of the displacement and the maintenance of the organ in its normal position, the procedure devised by Mr. Alexander of Liverpool, was employed in 302 cases. In fifty-one of these 302 cases the abdominal cavity was opened, either by an incision through the anterior abdominal wall, or by means of posterior or anterior colpotomy. In fifty-nine cases the round ligaments were shortened within the peritoneal cavity, usually by means of the procedure suggested by Wylie, and in three instances by bringing two loops of the round ligaments together in front of the uterus and securing them there with sutures.

as done some years ago by Polk.

In twenty-four cases the uterus was attached to the anterior abdominal wall, in a large majority of these a suspension being the result sought. In many of the cases in which this procedure was adopted, as well as in which internal shortening was the plan preferred, other intrapelvic work was demanded, such as the breaking up of adhesions, removal of tumors of the uterus or its appendages, conservative operations upon the uterine annexa, or the shelving of a displaced ovary.

I shall dismiss now the analysis of the total number of cases and confine

myself to the 102 cases of private patients.

Of these patients two have been the subject of suspension or fixation. Suspension was attempted, but in one patient at least, fixation seemed to be the result. In ten patients the ligaments have been shortened within the peritoneal cavity, four of these cases being in conjunction with the operation devised by me for shelving prolapsed ovaries. In the other ninety patients the round ligaments were shortened by means of the Alexander operation. The two operations of ventrosuspension were done early in my experience. For more than ten years now I have not resorted to this operation, either in private or hospital practice. In one of the cases of ventrosuspension the patient seems to have complete relief of her symptoms, and the uterus remains in an apparently normal condition. In the second case preg-

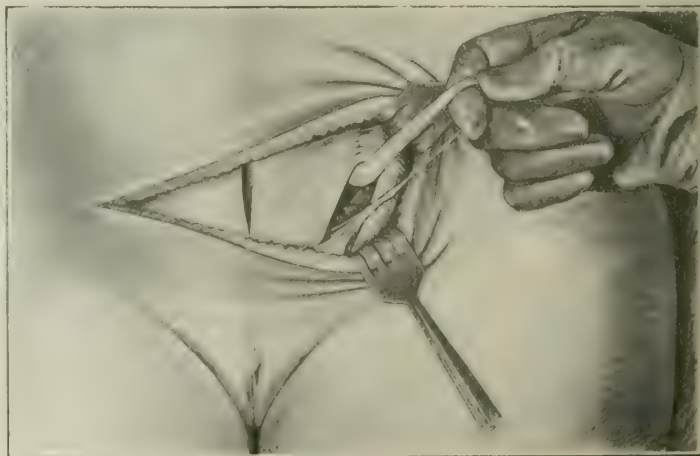


FIG. 4. Shortening of round ligaments.

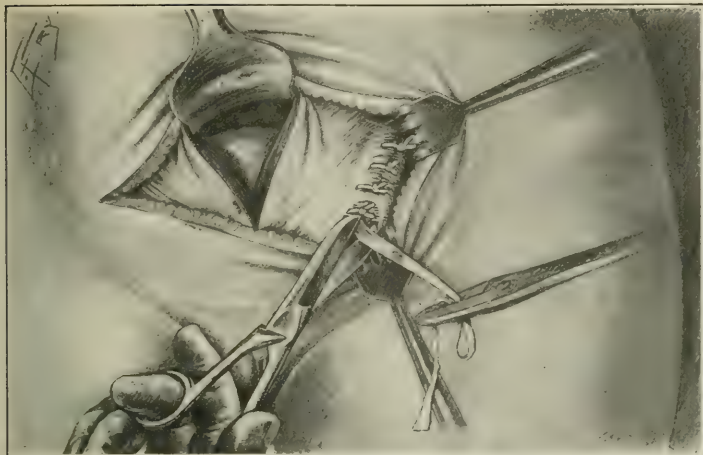


Fig. 5.—Prolapse of the ovaries from elongation of the mesovarium.

nancy followed about one year after the operation. The patient was a multipara, having had two easy normal confinements prior to the operation. During the pregnancy she suffered unusually from dragging pains, and toward the latter part of the pregnancy almost constant pain in the costal regions. I did not see her during the latter months of her pregnancy, but was called after her labor pains had begun. The cervix was very high in the pelvis, having been carried upward and backward almost to the promontory of the sacrum. I finally delivered the child by version, with great difficulty. There was an extensive tear of the cervix, extending well up into the broad ligament. Convalescence was tedious, and extensive secondary operations were necessary. I determined then that this should be my last experience with this procedure.

In the ten cases of internal shortening I have had two relapses, the uterus within a few months finding its way back to its old retroverted position; so that this operation has not brought me the results that would impress me with its excellence.

In the ninety cases in which I have had occasion to resort to the Alexander operation, I have had one relapse, and with this an inguinal hernia, the only instance of this kind that has come under my observation. This patient—an artist's model—contrary to my instructions, went back to her arduous duties within two weeks of the date of her operation. At the end of two months she returned to me with as complete a retroversion as she had had in the beginning, and with a small, easily reducible, left indirect inguinal hernia. I opened the wounds again and found the attachment of the ligaments intact but the ligaments thinned out almost to a thread. I opened the inguinal canals, followed the round ligaments up and again shortened them in the usual manner, at the same time doing a radical herniotomy on the left side. She made an excellent recovery, and shortly afterward was married. She soon became pregnant and went to term with no unusual discomfort. She had a normal confinement and sat-

isfactory recovery under the care of Dr. R. Ewell Brown.

I have had occasion to attend in labor four other women upon whom I had previously done the Alexander operation. In no case was there complication of any kind, the labors being satisfactory in every way. In one instance low forceps was applied to the head on the perineum. This was a young married woman referred to me by Professor W. Gilman Thompson, because of sterility, where a posteriorly displaced uterus was doubtless the cause. Following the Alexander operation she soon

became pregnant, and was delivered, as reported. Her child is now six months old, and her uterus is in its normal position. So much for my own experience. Let us now consider the operations in themselves.

I. Operations depending for their success upon ar-



Fig. 6.—Single incision to reach the peritoneal cavity and external inguinal rings.

tificial adhesions between the uterus and the abdominal parietes. This operation, devised by Olshausen and made practical and popular by Kelly, is, I believe I can safely say, resorted to more frequently for the relief of posterior displacements than all other operations combined. By the masterful force and the brilliant skill and earnest advocacy of its accomplished inventor, this operation has become, I believe I am safe in saying, a routine procedure at the hands of many gynecologists and certainly of most general surgeons who do gynecological work. And it is to these gentlemen largely that I desire to address myself tonight, because even in this city, and certainly outside of large medical centres, a large proportion of these cases fall into their hands.

The things to consider about this operation, as about all surgical procedures, are: A. Will it relieve the condition for which it is applied, and is the cure a permanent one? B. Does not the operation entail great risks to the patient?

In the consideration of the so called suspension of the uterus, it seems fair to assume that the surgeon cannot depend upon definite results. Kelly says that in seventeen cases in his clinic, operated on at periods varying from ten months to three and one half years after a successful suspension, there was a single ligament in twelve cases, of varying lengths and thickness; in four cases two slender cords were found, and in one case there were three cords. Lynch reports two cases, the subjects of Cæsarean section, where suspension was attempted and fixation resulted. It does not seem unreasonable, therefore, to assume that the number, the length, and the size of the suspending cords are largely problematical, or that fixation may take place where suspension is intended.

This whole matter, it is readily seen, depends upon the extent and depth of the inflammatory process, which unites the peritoneal covering of the uterus to the parietal peritonæum. This is a matter of chance—of good luck—rather than of scientific accuracy.

Goffe (in Bovée's *Practice of Gynecology*) reports a case in which he operated four months after suspension of the uterus, in which that organ lay in the hollow of the sacrum, the lax bands or "ligaments" being four and one half inches long. Through the kindness of Dr. Polk I am able to show you just such a band occurring in just such a case, which recently came into his hands for a second operation, the suspension having been done by a surgeon in Baltimore. It is quite possible also that a suspension by reason of an inflammatory action set up at the site of the attachment may become a fixation, a condition, I believe, that all are agreed is not to be desired. Such a condition is well described in one of five cases of Cæsarean section reported by Cragin (*Transactions of the American Gynecological Society*, 1908):

Mrs. S., age twenty-six, birth No. 21,080. In October, 1902, a very able New York surgeon, realizing full well the obstetrical dangers of a ventrofixation, performed with me a suspension of the uterus. The patient was much benefited by the operation, and in March, 1903, about five months after the ventro-suspension, she became pregnant. On December 5, 1903, she was delivered by the writer after a very easy and rapid labor. The fetus was born with a very short umbilical cord, and the placenta was attached to the posterior surface of the uterus.

at 8 p. m., just as she was starting for the theatre. The baby was born at 10:30 p. m. The position was left occipito-anterior.

It was thought by the surgeon who performed the operation, by her attending physician, and by myself, that the ventrosuspension had been a marked success and that no obstetrical complication from it need longer be feared.

In June, 1907, patient became pregnant again, and on the evening of March 26, 1908, the writer was again called to deliver her. On examination, the following conditions were found: The cervix was high up posteriorly and with difficulty reached. The child lay transversely, and the anterior uterine wall was thickened. As no progress had been made on the following morning, she was taken to the Sloane Maternity Hospital and Cæsarean section performed by me soon after her arrival. The suspension band, which in the first postoperative pregnancy allowed such normal uterine development and such a normal delivery, had in this pregnancy become thick and unyielding; whether as a result of the puerperal involution at the former labor (the puerperium was afebrile), or as a result of the present pregnancy, I know not. The condition was that of a ventrofixation and a Cæsarean section was the positive indication.

There can be no question, then, that ventrosuspension is an uncertain procedure, both in its accomplishments and in its results. Not only does it fail at times to relieve the conditions for which it is employed, but on some occasions at least produces symptoms which may be extremely annoying to the patient. Irritability of the bladder is certainly a common accompaniment. More than ten years ago I pointed out, I believe, the correct explanation of this. The act of urination may be easily divided into three stages: 1. A positive voluntary act—starting the flow of urine; 2, a passive middle period, during which the urine continues to flow until the bladder is almost emptied; 3, a last positive bearing down effort, crowding the abdominal contents down on the bladder and thus forcing out the last few drachms of urine.

Now, when the uterus is fixed like a roof over the fundus of the bladder, this final act is of no avail, and a certain amount of residual urine remains in the bladder and is responsible for its irritability. This applies to all attachments of the uterus to the abdominal wall, suspensions, of course, being, primarily, fixations depending for the formation of the suspensory cords upon the stretching out of the adhesions between the uterine and parietal peritonæa.

I have had three patients come to me upon whom suspension had been done, all by competent surgeons, complaining of constant dragging pain in the hypogastrium, in addition to the urinary symptoms. One of these cases is of such interest that I shall report it briefly:

CASE I.—A. B. came under my care in Bellevue Hospital, with the following history: Prior to the time that she had been admitted to the German Hospital for the purpose of having an interval appendectomy done, she had never had any pain or discomfort referable to the uterus. Shortly after she left the hospital she began to suffer from dragging pain in the hypogastrium, irritability of the bladder, and marked dysmenorrhea. Vaginal examination showed the uterus in its normal position, but with limited mobility, apparently due to some attachment to the abdominal wall. I showed this patient to the students of Cornell Medical College, in Professor Polk's clinic at Bellevue, as a case with ventrosuspension. On opening the abdomen it was seen that the appendix vermiformis had been removed and that the uterus had been suspended to the anterior abdominal wall. The suspensory cord—about one inch long and as large as a large lead pencil—was removed. The patient was relieved promptly of her abdominal pain, her

irritability of bladder, and her dysmenorrhœa, and reported to me a year after as being entirely well.

That this procedure entails grave risks to the patient in not a few cases, I believe its most ardent advocates will allow. From what has gone before I believe we must admit that it is impossible to predict, or at times distinguish between ventrosuspension and ventrofixation, and as pointed out by Cragin, suspensions at times become fixations and fixations suspensions.

Lynch reports twenty-five Cæsarean sections and Cragin adds five of his own, necessary because of this procedure, and I desire to report here a case of my own, occurring at the Manhattan Maternity, which should prove of interest in this connection.

CASE II.—The patient, A. D., a German woman, second-opara, aged twenty-four, was admitted to the Manhattan Maternity Hospital on April 8, 1907, in the first stage of labor. She gave no history of miscarriages. Her previous pregnancy was normal; a child was delivered stillborn instrumentally. The external examination showed a full term fetus, head below, back to the left, shoulder presenting, left scapula anterior. Internal examination, old laceration of the perineum, cervix retracted, three fingers dilated. Diagonal conjugate 10 cm., true conjugate 8 cm. Diagnosis: Simple flat pelvis, neglected shoulder presentation, patient in labor thirty-four hours before admission. Liquor amnii drained; hand prolapsed into vulva. Cæsarean section done by Dr. Barrows and a live child delivered; weight, 6 pounds 4 ounces. Resuscitation by combined method for twelve minutes. Left forearm showed marked contusions. Diameters of fetal head.—Biparietal, 8.3 cm.; subbregmatic, 9.3 cm.; occipital frontal, 10.7 cm. Puerperium uneventful except for slight stitch infection at the upper end of the incision. Examination at the time of discharge showed adhesions between the uterus and abdominal wall. The uterus was at the umbilicus.

This woman left the hospital in excellent condition with the exception of this adhesion, which had taken place between the anterior face of the uterus near its fundus, and the anterior abdominal wall. She was instructed that in case she should again become pregnant to report to us promptly.

On March 10, 1908, she returned to the hospital, telling us that a pregnancy had begun on July 23, 1908, fourteen and one half months after her previous operation. Measurements at that time showed externally between the spines, 24 cm.; between the crests, 29 cm.; external conjunctiva, 17 cm.; right external oblique, 21.5 cm.; left external oblique, 21 cm.; diagonal conjunctiva, 10 cm.; transverse outlet, 8 cm.; posterior outlet, 9 cm.; true conjunctiva, 8 cm. Examination also showed a fetus in the transverse position, head to the right dorsal plane below. The fetus was easily movable. The position could readily be changed to breech or vertex presentation. The fetal heart was heard clearly. The patient's general condition was good. The patient stated that for the past month or more she had suffered a great deal of pain and pulling, dragging sensation in the hypogastrium, and a severe painful pressure in the costal regions. She was examined by me on April 7th. The conditions were found as noted, and on vaginal examination it was practically impossible to reach the cervix. The uterus had evidently developed posteriorly and carried the cervix high up, apparently above the promontory of the sacrum. It could be easily demonstrated that the uterus was attached to the anterior abdominal wall, but could be moved to a limited degree. The whole uterine tumor lay high in the abdominal cavity and was well up under the costal margins.

I advised the woman to return on April 13th, a week from the date of my examination, this being a week or ten days before she was due for delivery. I did a second Cæsarean section on April 14th and delivered her of a living child. The measurements of the child were: Biparietal, 9.5 cm.; subbregmatic, 10 cm.; occipital ment., 13 cm.; occipital front, 12 cm.

The woman was instructed to return, and an operation was done at this time a week or ten days prior to term, because I believed that the uterus in all probability had thinned out very much posteriorly, and that if any labor

pains should begin, there would be great danger of rupture of the uterus. On opening the abdomen I found a band about one and a half inches long and as large as a large lead pencil, connecting the uterus just below a line between the origin of the Falloppian tubes with the anterior parietal peritonæum. This peritonæum on the parietal side was drawn out in a fanlike shape. The development of the uterus had occurred posteriorly, the uterus evidently rising in the pelvis as far as this connecting band would permit. Then the tension on the band had swung the uterus around so as to make a half torsion of its body, the left cornu and Falloppian tube presenting in the wound when the abdomen was opened, and the right one being well behind the uterine body as it lay in situ, as shown in Fig. 1.

The band was tied off and removed. The scar of the former section showed faintly along the anterior uterine wall (Fig. 1). The uterus was opened in the same line, it being found about two or three times the ordinary thickness of the uterine body toward the lower part of the incision (Fig. 2). The child was presenting as a breech and was easily delivered. The placenta was situated posteriorly near the fundus at a point where the uterus was thinnest, the uterine wall at this point being not more than one sixteenth of an inch thick (Fig. 2). This showed very clearly the wisdom of not permitting this woman to go to term, as any uterine contraction might, in all probability, have produced a rupture of the organ.

The woman made an uneventful recovery and left the hospital well. We have tried to impress upon her the necessity of returning to us immediately in case she should again become pregnant.

This accidental ventrosuspension was as perfect a one as could have been done intentionally. It is the only one that I have done for a long time, and I regret that I was unwittingly the indirect cause of this. With the pelvic measurements a little below the normal I believed that a viable child could be delivered through the natural ways, and for that reason I had instructed this woman to return to us early in her pregnancy, if it should occur, in order that we might take measures to accomplish this result. When she did return, she had passed the point where it would have been possible to have delivered her through the natural channels. As I have said before the cervix had been carried up so high and so far backward that the presenting part could not be felt. The uterus was so high in the pelvis, and there was such a mass of thickened anterior uterine wall in front of the child, that it was clearly a case for a second Cæsarean operation.

Von Gerhard, Dickinson, Brodhead, Clark and Bowley, and Edebohls and Ingalls have all reported cases of rupture of the uterus during labor because of the thinning of the uterine wall behind the point of suture attachment. Dr. R. Condit Eddy reported such a case to me as occurring in a hospital in a neighboring town while he was in attendance in the same hospital upon a patient in an easy labor, upon whom I had previously performed the Alexander operation. The patient was brought into the hospital dying from a rupture of the uterus. She had been easily and successfully delivered of five children prior to the suturing of her uterus to the abdominal peritonæum, and she lost her life in the first labor following that operation. Two cases of rupture of the uterus following suspension have been reported to me by Dr. A. A. Moore.

I believe, then, that we may safely assume that ventrosuspension is an unsafe operation for posterior displacements during the child bearing age.

A malposition of the child is the rule in those cases where Cæsarean section has been done under these conditions. In fifteen of the twenty-one cases

reported by Lynch, and in all five of Cragin's cases breech presentations were found; in my one a breech.

In this connection it is an interesting study to see at what age women apply for operative relief from posterior displacements. In 456 cases collected from the reports of Dr. Polk's service at Bellevue I find that ninety-six per cent. of the patients were below the age of forty, and that the average age was less than thirty-one. In my own cases forty-two years was the oldest age of 398 patients, and the average age was less than thirty; so that practically all patients who seek surgical relief from posterior displacements are of the child bearing age. If we look no farther than this, the cases to which this operation can be offered with assurance of safety are very few.

But it carries with it another danger which even the few who escape the child bearing age limit are not safe from. Nature is extremely careful in her plan of procedure within the peritoneal cavity, in the adjustment of the organs and viscera, and their fixation by ligaments, never to leave free bands under which or apertures through which coils of intestine may pass and go on to strangulation. All these have been so cleverly covered with the enveloping peritoneal membrane as to practically make intraperitoneal strangulation impossible. Such is not so when adhesions have taken place and artificial bands and cords have been developed. Fatal cases of strangulation of the intestine following ventrosuspension have been reported by Lindfors, Jacobi, Ohlshausen, and Montgomery. In this connection the following case is of interest:

CASE III.—MRS. M., age thirty-two, secundopara, referred to me by Dr. Bullard, of Larchmont Manor. About one year before I was called to see the patient she had had a laparotomy done by a prominent New York general surgeon, who, it was said, had done some conservative operation on one tube and ovary, and at the same time had done Kelly's operation for ventrosuspension of the uterus. She had not had much relief following the operation, but was able to be up and about and attend in a way to her household and social duties. The day before I was called to see her she had been suddenly seized with a severe pain low down in her hypogastrium. This was accompanied by nausea and vomiting, with inability to secure a satisfactory movement of the bowels. Her abdomen was immediately opened and the condition shown in the sketch found (see Fig. 3). A knuckle of small intestine had slipped under one band of a ventrosuspension and passing up between the two cords had become partially strangulated. The gut was deeply congested but not yet gangrenous. The cords were cut, the gut liberated, and the abdomen closed. The patient made a good recovery, and is to-day—a year after the operation—well. If it had not been for the possibility of prompt surgical relief she would have been added to the list of fatal cases.

Now let us consider ventrosuspension as far as the effect on the symptoms and results to the patient go. Kelly, in his *Operative Gynecology*, quoting Dr. Holden, says that "109 out of 182 women were absolutely cured or their symptoms were greatly relieved," that is, sixty per cent. of these patients as quoted by Dr. Kelly showed either cure or great relief; forty patients, or twenty-one per cent., had no relief; and the remaining thirty-three patients out of 182 cases were but slightly improved.

When we consider the possible disastrous results I have just tried to demonstrate to you and then look at the comparatively unsatisfactory conditions

dependent on this operation, quoting as I have from Kelly, himself the author and strongest advocate of the procedure, it seems to me that it is a very poor return to offer to the patient when we can only promise about half the cases as cured or relieved, and when we have, on the other hand, the array of dangers and disasters which I have cited.

I am prepared to say, therefore, after a careful study of the literature of the subject and from my own personal experience, that at no time is ventrosuspension a procedure which we can offer to the patient with safety and satisfaction.

Let me say that since 1895 (about fourteen years) in the gynecological service in Bellevue Hospital of which Dr. Polk is chief, only eight ventrosuspensions have been done. Of these, six have been done by general surgeons who have had charge of the service at times in the summer months during the absence of Dr. Polk, Dr. Hamlen, and myself.

Now let us consider those cases which come under a second caption, suspension of the uterus by means of its own ligaments, and for the sake of brevity, I will confine myself to shortening of the round ligaments by one method or another. If we expose the internal inguinal ring and draw the round ligaments out through the canal, in a large number of cases we will find that about the first half of the ligaments that is drawn out is slender and sometimes fragile, and easily broken if care is not taken in its handling. As the ligament is further drawn out, it becomes thicker and stronger and shows more clearly its muscular origin. I preface my remarks with this because the success of a correction of posterior displacement of the uterus by shortening these ligaments depends largely on this fact. When the abdominal cavity has been opened and the uterus is found in a retroverted condition, such operations as those advised by Wylie and others for internal shortening of the ligaments appeal to one on account of their simplicity, ease of execution, and apparent anatomical correctness, but the fact mentioned that the ligaments are thinned toward their outer extremity and thicker at their uterine end, brings about in this operation the removal of the strong part of the ligament by its inclusion in the loop, and leaves the weak part to serve as a supporting cord. For this reason I have not made use of internal shortening of the round ligaments when it was possible to resort to the procedure devised by Mr. Alexander.

Many objections have been offered to Alexander's operation. Some have said that it was a difficult procedure. I can answer this by saying boldly that it is not a difficult procedure to any person who knows the anatomy of these parts, and who has fair surgical skill. I have on many occasions exposed and drawn out both of these ligaments safely and without hurry in less than five minutes, and I have seen house gynecologists at Bellevue Hospital frequently do practically the same thing. In the 296 cases to which this procedure has been applied by me, I have never failed to find the ligaments in their proper position. To my mind they are as fixed and well established anatomical structures as the uterus itself, because they are prolongations of the muscular structure of the uterus, from its cor-

nua along the top of the broad ligament and through the inguinal canals. At times I have found these ligaments so thin and fragile that I have been obliged to slit up the wall of the inguinal canal and follow them carefully until I came up to a thickened portion of the ligament, lying within the peritoneal cavity. On several occasions I have broken one ligament, but by entering the peritoneal cavity through the internal abdominal ring after the manner of Goldspohn, I have found no difficulty in securing the broken end. When the ligament breaks—and it ought never to break in the hands of a good surgeon—the rupture takes place in the thin outer part of it and not in the thickened uterine end. In the ninety cases which I have reported, outside of the one in which the relapse and hernia occurred and which has already been cited, I have had one complete failure anatomically. The uterus now occupies the same position which it did before the operation, but strange to say the patient has no symptoms and declares herself as well, and I have been unable to get her to submit to a second operation. In three of the cases my patients complain of discomfort and pain of a dragging nature, but the uterus occupies a correct anatomical position. Subtracting these four cases from the ninety cases occurring in my private practice leaves me eighty-six cases, the patients in which I can safely say are cured. None of these cases are less than a year old, so that there has been fair time to test the question of relapse.

Now, I am quite conversant with the fact that these results are not such as are commonly believed to exist after operation, and I believe that such a good percentage of recoveries depends upon the great pains and care taken in the diagnosis of this condition. This operation should only be applied to those cases for which it is suitable. It is easy to see that if there are adhesions behind the uterus holding it in a fixed retroverted position, to draw out the ligament and make tension on the uterus in a forward direction would only add to the woman's discomfort, and yet this is one of the reasons why this operation has failed in the hands of a good many. We can also easily understand that if the woman has, in addition to her retrodisplacement, inflammation of her tubes or ovaries, or other pelvic inflammations, her symptoms are not relieved by restoring the uterus to its normal position.

Again—a condition exists in many of these cases of retrodisplacement which is not recognized by many gynecologists and surgeons and indeed is said by many not to exist—namely, prolapse of one or both ovaries. When this prolapse of the ovaries depends simply upon their being carried backward and downward by the backward displacement of the uterus, a restoration of the uterus to its proper position will carry with it a relief of the displacement of the ovaries; but in a large proportion of cases such as I have described in an article published in the *Medical Record* some ten years ago, ovaries are frequently prolapsed because of the elongation of the mesovarium or fold of peritoneum which holds the ovary against the posterior face of the broad ligament (Fig. 5). It can be easily understood if this occurs, elevation of the uterus in no way corrects a displacement of the ovary.

Then, again, I have found of late that in a fair

proportion of posterior displacements of the uterus we have an enlargement of the veins of the pampiniform plexus to such an extent as to produce a condition analogous to that of varicocele in the male. Restoration of the uterus to its normal position in these cases relieves in a measure the congestion which exists in these veins, but it does not cure the dilatation of the veins, and they still remain a source of discomfort to many patients.

Such cases as these on which Alexander's operation has been done without a thorough investigation in advance of the existing conditions have been frequently set down as failures of the operation.

I think that the success of the operation also depends largely upon technique, and the technique devised by Mr. Alexander, himself, I am free to confess seems to me as nearly perfect as one could wish for, with one single exception, and this does not apply absolutely to his suggestions because he leaves you a choice of two methods. The exception lies in the disposal of that portion of the round ligament which has been drawn out. He in some cases removes this, but he tells you that if you choose to do it, you can tuck this into the wound and leave it there. Now, when we consider the fact that we have torn this muscular structure from its bed, and in doing so we have handled it more or less and broken up its nervous and vascular supply, and in addition to that, when we come to fix it and leave behind a portion which has no connection, practically having been shut off from the other part of the ligament by our sutures, I cannot find any excuse for not removing this, because it seems to me that it may act as a foreign body and result in a failure of the wound to close by primary union (Fig. 6).

Primary union is absolutely necessary for the success of the operation, as you can readily see that suppurative at the point where the ligature is attached will, in all probability, result in a failure to fix the structure firmly. If there is any question about the presence of adhesions or of other intrapelvic difficulties besides the displacement of the uterus, it is a wise thing to follow the plan suggested by Dr. Polk, twenty years ago, to open the abdomen from above, correct these conditions, and then do a secondary shortening of the ligaments. It was customary at that time to resort to some intrapelvic method of shortening the ligaments, but more than twenty years ago I have seen Dr. Polk open the abdomen, break up adhesions, close the median abdominal incision, and restore the uterus to its position by shortening the round ligaments after the Alexander method.

Of late I have been using the transverse (Pfannenstiel) incision, from a point about one inch above the spines of the pubis. A transverse incision is made, the skin is drawn upward by retractors, and the abdomen opened in a median line. This is well portrayed in an article published by Peterson, of Ann Arbor, on Shortening the Round Ligaments within the Inguinal Canals through a Single Suprapubic Transverse or Median Longitudinal Incision, in *Surgery, Gynecology, and Obstetrics*, July, 1906. This is a very satisfactory method of reaching the peritoneal cavity, and at the same time the external inguinal rings, through a single incision of no great extent (Fig. 6).

In closing this paper let me ask your forgiveness for having presented it in such a general way, but the subject is such a large one that I have found it difficult to confine myself within the necessary time limit.

63 EAST FIFTY-SIXTH STREET.

THE SIGNIFICANCE OF POSTURE IN OBSTETRICS.

Address Delivered at the Meeting of the Alumni Association of the Lying In Hospital of the City of New York, Held on November 9, 1909.

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Before proceeding with the main purpose of this paper, which is the importance and utility of posture in transverse presentations and other cases of dystocia, I should like to call attention to the fact—not generally recognized—viz.:—that we obstetricians during the few centuries of modern obstetrics, in our humane efforts to assist parturient women, have unconsciously, in many instances, done harm by our interference, and in such a manner, that we have actually created, artificially, conditions that rendered treatment necessary, and which conditions, without our interference, would not have occurred.

To illustrate my meaning in the simplest possible way: We find it necessary (or desirable, at least) to ligate the umbilical cord to prevent its bleeding. But this necessity was produced, *solely and entirely*, by our cutting the cord with a sharp instrument. Without this sharp incision, ligation would be no more necessary now than it was during the thousands of years before scissors and the ligature had been invented. In prehistoric times the cord was severed by laceration, as it is in animals, or by friction with shells, stones, or by the teeth perhaps.

I do not desire to revive the old discussion of 1867 and 1868 as to the management of the cord without ligation, which was introduced at that time. I merely refer to it as a pointed illustration of a recognized condition requiring treatment, artificially produced by ourselves.

To illustrate again: We find it necessary or desirable, after a child is born, to press upon and manipulate the uterus in a particular way, to promote its contraction, to expedite delivery of the placenta, and prevent hæmorrhage. But observe again that we have created this necessity artificially, by keeping the woman upon her back and taking away her child and consigning it to the nurse. Had the conventions of civilization and of modern obstetrics not interfered, the natural mother would have cared for her newborn child in the natural way. See then what would happen; the mother, if recumbent, would rise to a sitting, kneeling, or possibly standing posture; she would lean forward and take the child in her arms, and with maternal affection fold it to her bosom. The unbroken cord would be long enough, counting the length of the infant's body from the navel to the mouth, to allow the child to

suckle the nipple, which it would immediately proceed to do; thus producing reflex uterine contractions, which would be farther strengthened by the pressure of the child's weight and the perpetual motion of its feet, upon the fundus uteri. The uterus would also receive additional pressure upon the fundus, from the weight of the abdominal organs pushed down upon it, by the woman leaning forward and thus lessening the space between her diaphragm and pelvis. In prehistoric times this was the method—the natural method—by which uterine contraction, placental expulsion, and the prevention of hæmorrhage, were secured.

I do not desire to dispute the utility, advisability, and necessity even, of our modern methods of manipulating the uterus for the purposes mentioned, but I beg to insist that this necessity has arisen artificially by our own interference, in obedience to the conventions of custom; by our keeping the woman upon her back, and consigning her newborn child to the care of another individual of the same species.

To illustrate again: We often find it necessary after labor to empty the bladder by a catheter. The woman cannot pass her water. We say the urethra is swollen or has been the subject of pressure, or bruised, etc., during delivery. In many—very many—instances this retention of urine has been produced artificially by ourselves, simply by our keeping the woman upon her back in bed. If we let her sit up on a chamber vessel—the natural posture for urination—she will, in the great majority of such cases, pass her water, and the necessity for a catheter will be obviated.

To illustrate yet once more: For several decades, the obstetricians of the civilized world have wracked their brains to seek out means of cure for puerperal septic infection and to prevent the dreadful mortality resulting from it. Yet we all know the necessity for these remedies has been again *artificially produced by ourselves*—produced, for the most part, by our infected fingers during vaginal examinations in labor. It is probably true that before the advent of Listerism—before the antiseptic era—more women were killed by this artificial infection than were saved by skilled assistance in such cases as pelvic deformity, placenta prævia, eclampsia, uterine rupture, cross presentations, and others of like serious import. Happily we have learned of late to forestall the difficulty by a rigid aseptic technique; and especially by abstaining, as far as we can, from repeated vaginal examinations.

As most of you know, Leopold in 1907 (?) (see *American Journal of Obstetrics*, February, 1908, p. 235) reported 919 cases of obstetrics—some of them being abortions—in which he made no vaginal examinations at all—not one. All the patients recovered. In the whole lot there were, it is true, two cases of infection, supposed to have been auto-infection cases. Leopold was led to this method of conducting labor from his having found that there were, annually, in Saxony in 1907 or 1908, between 300 and 400 deaths from puerperal infection. In Prussia there were 4,339 deaths in one year, and in the German Empire, 6,000 women died in one year from the same cause.

In the out door maternity services of some of our

own large cities, where the women are delivered in the hovels and homes that are anything but aseptically clean, it has been shown that septic infection will still be a rare occurrence, provided no infecting vaginal examination be made by physicians, students, or nurses.

This is an old story to most of us nowadays. I only mention it as another illustration of the necessity of relieving dangerous abnormal conditions that have been artificially produced by ourselves—produced by our well intended but disastrous interference.

Thus have I laid the foundation for the main subject of the present paper, for the cases to which it especially refers again come within the category of abnormalities artificially produced by our own humane but prejudicial interference.

My chief contention is that the recumbent posture during labor is much overdone; that it is often persisted in—either by custom or by direct order of the obstetrician—when it does positive harm, by prolonging labor, by exhausting the woman, and sometimes leading to the persistence of faulty presentations, as well as increasing the duration and intensity of the woman's suffering.

Let it be especially noted that by persistently maintaining the recumbent posture, we deprive the woman of one of the chief factors of power by which, in the natural order of things, her child is forcibly extruded. I mean the factor of *thigh pressure* upon the walls of the abdomen and uterus, which comes into play when she assumes a sitting, kneeling, or squatting posture, but of which she is completely bereft in the dorsal decubitus.

Obstetric science of to-day teaches that the forces of labor consist of, *first*, uterine contractions, and, *second*, contractions of the abdominal walls and diaphragm in the act of straining or "bearing down." Nowhere do we find any recognition of or reference to the pressure of the thighs upon the abdomen as an additional factor of power, when the woman assumes a sitting, kneeling, or squatting posture. I plead for a due recognition of this additional source of power. And now I proceed to demonstrate its utility.

Let it first be noted that of all the different postures during labor recorded among primitive peoples, nowhere do we find any references to the dorsal decubitus. Our maternal ancestors, in prehistoric times—women of the forests and the fields, educated in the School of Nature (so to speak) adopted for the most part a squatting posture, in fact, the posture of defecation. The woman to steady herself during labor, grasped with her hands a sapling of the woods. If no suitable young tree were available, a stake was firmly driven in the ground for the same purpose. In our parturient women of to-day, there still survives the inherited desire to grasp something in front of them with the hands during labor pains; and thus we furnish them with the very poor substitute of a sheet fastened to the bed post which they can grasp and pull.

If any one of you will place his closed fist in the neighborhood of Poupart's ligament and then assume a squatting posture, you will easily demonstrate how forcibly the fist will be compressed to-

ward the abdomen by pressure of the thigh column. And it is inevitable that this thigh pressure would be still very much greater upon the distended abdomen of a pregnant woman. Thus the intraabdominal pressure is increased; the contracting walls of the uterus and abdomen are reinforced.

And now we come to the extremely interesting point that this beautiful provision of thigh pressure (which we have so long ignored) is not only a factor of power, but is also the natural means by which transverse presentations are either altogether prevented or, when they occur, are corrected. It is Nature's method of so called "spontaneous version" in arm and shoulder presentations.

To understand the *modus operandi* of thigh pressure in thus turning a child, it is necessary to realize that the act of squatting as usually practised, is *not* a symmetrical proceeding. Both thighs do *not* press equally upon the abdomen, nor is the *direction* of this pressure the same upon both sides of the abdominal surface.

Usually, in squatting, one foot is placed flat upon the ground and in advance of the other, while this

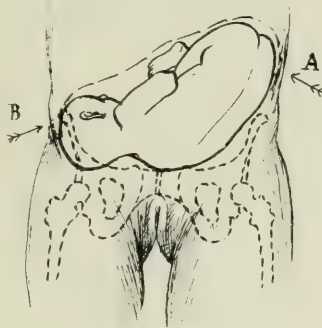


FIG. 1.—Left shoulder presentation; head in right iliac fossa.

other foot, considerably posterior to the first, rests its toes only upon the ground. The thigh of the forward foot will assume a more or less acute angle with the woman's spinal column and will come in contact with the abdomen over a large surface extending from the groin to a line considerably above the umbilicus; while the thigh of the posterior foot will be almost horizontal, and will have a much more limited surface of contact on the lower lateral part of the abdomen only.

The *direction* of pressure by the thigh of the forward foot will be obliquely upward and toward the median line; the *direction* of pressure by the thigh of the posterior foot will be almost horizontal from without inward with a little upward lift.

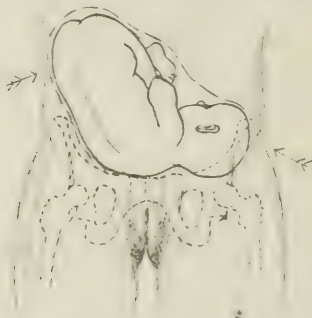
Now in shoulder (and arm) presentations we know the child's head usually rests low down, upon one of the iliac fossæ, while the back extends obliquely upward on the other side, to terminate in the breech end of the fetal ovoid situated nearer the fundus uteri at a considerable distance above the crest of the ilium. Now if we take care that the

woman in squatting shall always place that foot forward which agrees with the side of the abdomen toward which the child's breech is directed, it is evident the pressure of this thigh will come into forcible contact with the back of the child and lift



FIG. 2.—Squatting posture; for case shown in Fig. 1.

it and the breech end up toward the median line and ensiform cartilage; while the other thigh (corresponding to the foot that is placed posteriorly and resting on its toes) will press upon the abdomen low down, over a smaller surface, and coming in contact with the projecting head of the child, will lever it off of the iliac fossa, inward toward the me-



dian line, and thus into the pelvic brim; and so a head presentation is produced.

In practising this proceeding do not forget the rule of placing that foot forward corresponding to the side toward which the breech end of the child is directed. And if instead of squatting, the method of unsymmetrical kneeling is adopted, in which the woman again plants one foot flat upon the ground and kneels with the other lower limb only, the same rule is to be followed, viz.: the foot flat upon the ground must be the one corresponding to that side

of the abdomen toward which the breech is directed; or, what is the same thing, the woman kneels only on that knee corresponding with the side toward which the child's head is directed.

Whichever method be tried, it is important that the woman maintain the selected posture long enough to have a few labor pains; these pains themselves contribute to straighten the uterus and lift the breech toward the median line to some extent, and when aided by forcible mechanical leverage of thigh pressure, properly applied, there are but few, if any cases of transverse presentations (in my opinion) that would not be rectified by this spontaneous version process.

In presenting this subject to the American Gynæ-



FIG. 4.—Squatting posture; for case shown in Fig. 3.

ological Society, three years ago, I was able to report one case, in which the woman had been in labor for twenty-eight hours, ergot had been given by the midwife, the waters had of course been discharged, and the uterus was tetanically contracted round its contents, yet by placing the woman in a kneeling posture with her head and body bent forward as far as possible, the arm began to recede in five minutes, and in twenty minutes the child was delivered, head first, and mother and infant both survived and did well. In my opinion it was the two thigh columns acting against the column of the lumbar spine—the three columns like the legs of an inverted tripod, converging below, diverging above, caused the child to escape in the direction of least resistance, namely upward, thus it was lifted out of its impaction in the pelvis, the arm was withdrawn, and a head presentation produced. This case was reported by Dr. E. E. Barnum in the *Buffalo Medical Journal*, February, 1892, pp. 385-389. I mention it to show that even in the very worst cases, and under the worst conceivable conditions, the factor of thigh pressure may still be effective in relieving the condition by causing a change of presentation.

In the discussion of my paper in 1907, your own distinguished colleague—the late Dr. Robert A.

Murray—mentioned two cases of transverse presentation in which he was about to perform version in the usual way, but in both cases the woman had occasion to sit on a commode, in a squatting posture before the operation, with the result that both were changed to head presentations, and delivery occurred, in one immediately, in the other within fifteen minutes, without any operative procedure whatever.

In the paper referred to another successful case by Dr. Medford, of Washington, and one of my own, were also recorded.

In the history of transverse cases it has repeatedly happened that the obstetrician, having made his diagnosis, leaves the patient for a short interval, perhaps to obtain an anæsthetic, or an assistant, or a consultant, and when they return the case is found to be a head presentation. We say, commonly, spontaneous version has occurred, and some of our textbooks tell us, it was produced by an uneven or unilateral contraction of the uterus. Do you think this is as good an explanation, and a more reasonable hypothesis, than supposing the woman may have used a commode in the absence of the obstetrician and thus have changed the presentation by thigh pressure, as in Dr. Murray's cases just mentioned? Perhaps you do, but if so, I cannot agree with you.

In examining the literature of spontaneous version, I have been disappointed in not finding many cases in which any change of os posture is mentioned. It should be remembered, however, that in many instances the patient may have used the commode without mentioning it to the physician; and again, even if she did mention it, the obstetrician, considering it a matter of no consequence, may thus have omitted it from his clinical report, as a circumstance of negative import.

It should be accentuated that the method of version by thigh pressure is absolutely harmless; it is entirely free from the usual dangers—of uterine rupture and others—to which the ordinary performance of version is liable.

In some cases of transverse presentation where the lower segment of the uterus has become very thin and distended, and the ring of Bandl has risen high up in the abdomen, version is out of the question; i. e., the certainty of rupture prohibits it. There is here no resort for the obstetrician except embryotomy (usually decapitation) or a cutting operation upon the mother. Version by thigh pressure, however, may still be accomplished (as in Barnum's case) without any increased danger of rupture. In fact the forcible contact of the thighs against the abdomen would tend to support and relieve tension in the thinned lower uterine segment where rupture is so apt to occur. It squeezes the distended walls of the uterus together; it does not subject them to further distension, as the introduction of the hand necessarily does in the usual process of version.

In late neglected cases where the woman may be too much exhausted to assume a squatting or kneeling posture the factor of thigh pressure may still be brought into play by the obstetrician grasping the lower extremities and manipulating them so as

to bring the thigh columns in contact with the abdomen in the manner already described by squatting and kneeling.

Before dismissing this part of the subject, I beg you will remember that it is not only as a corrector of cross presentations that I advocate thigh pressure; but I insist that this pressure is one of the *normal factors of power* in perfectly natural labors; a power of which we have no right to deprive the woman by keeping her in the recumbent posture, or by supinely allowing her to remain recumbent—according to traditional custom—when a change to the ancestral posture of kneeling or squatting would probably accomplish her delivery in a few minutes.

In discussing this subject in Washington last spring, Dr. Joseph Taber Johnson related a case of natural labor in which progress was so slow and discouraging that the woman got up and kneeled by her bedside to pray for assistance; but the kneeling posture produced an immediate delivery, before her prayer could be uttered.

Dr. Max Samuel, of Posen, Germany, reports (in the *Centralblatt für Gynäkologie*, Leipsic, February 22, 1908) the case of a woman who was being put in position for forceps. She lay across the bed with her legs flexed on the abdomen, while the nurse was bringing two chairs for her feet. Then a pain came on, and the woman suddenly seized her own legs above the knee and pulled her thighs forcibly upon the abdomen. The head was at once born, and no forceps operation was necessary. Dr. Samuel adds that he has, since then, applied this posture in all cases of difficult delivery and has thus been able frequently to dispense with forceps. He says: "The woman pulls on her legs just above the knees, the thighs flexed to the utmost, and she raises her head a little at the same time."

Years ago (1886) I published a limited number of cases of prolonged labor due to short and coiled funis and in which most obstetricians would have used forceps, as indeed I had myself previously done, but all of these women were rapidly delivered when they assumed a squatting or sitting posture.

I think it would be a good rule never to apply forceps, in normal pelvis, without first trying the effect of thigh pressure induced by posture as I have indicated.

Finally, if you will allow me to tax your patience yet a little longer, I want to explain how a *kneeling* posture may be instrumental in producing rotation of the occiput from the acetabulum to the pubes, when this rotation fails to take place in the *recumbent* posture. In these cases of delayed rotation we usually put on the forceps in one of two ways; we either apply them to the sides of the *head* when rotation occurs from the pressure of the blades of the instrument; or we apply them to the *sides of the pelvis* (a much more difficult proceeding) and then produce rotation by swerving the handles over to the centre of the interfemoral space.

It would be much easier for us and much less risk to the patient, if the rotation of the occiput could be made to occur, before applying the forceps. This can be accomplished by a kneeling posture, as follows: When a woman kneels and leans back upon her folded limbs, so that her pelvis comes in

contact with her heels, the length of the lower extremity, in normal women, is such as to bring the protuberance of the heel in contact with the skin at a point exactly over the great sacrosciatic foramen. If the occiput was toward the left acetabulum, the forehead would be toward the opposite sacroiliac synchondrosis, one of its frontal eminences in contact with the sacrosciatic foramen; hence the pressure of the heel at this point will push the forehead into the hollow of the sacrum and cause the occiput at the opposite acetabulum to go to the symphysis pubis.

In experimenting with recent cadavers by placing a fresh foetal head of good size in the pelvis, with its occiput toward an acetabulum, I have been surprised to find how easily rotation could be accomplished by digital pressure upon the outside over the great sacrosciatic foramen. I have tried it over and over again in plump cadavers as well as thin ones, and always with the same result. Moreover if a forceps blade is introduced, the tip of the blade can be felt on the outside, over the foramen, when the handle is moved; and when pressure is made upon the tip of the blade upon the outside, the impulse can be distinctly felt by the hand holding the handle of the instrument.

When a living woman's pelvis is poised upon her heels, by kneeling in the manner I have stated, the pressure is greater—perhaps many times greater—than could be exerted by digital pressure. But however great it may be in the living woman, there is not the slightest fear that any harm could result from it.

With regard to this matter, then, may we not reach the following practical conclusion, viz.: before applying the forceps to an unrotated head (I mean at the lower strait of course; not "high forceps" operations), and before attempting to produce rotation by any of the vaginal methods commonly practised, let the woman kneel in the manner suggested and thus test the power of heel pressure in producing the desired rotation. If it fail, no harm can possibly result, and what is more, the method entails no vaginal manipulation, and no dangers of infection, which are inseparable from the customary methods of securing rotation.

Perhaps this idea may be considered a somewhat fanciful one; but should we not regard it as one of those surprising evidences of design—the beautiful adaptation of means to ends—so often found in the organic machinery of animal mechanisms?

As Pope, in the *Essay on Man*, tells us:—

"In human works though labor'd on with pain,
A thousand movements scarce one object gain,
In God's a single can its end produce,
And serves to second, too, some other use."

Thus a woman's heel besides contributing to her locomotion, and serving on occasion perhaps, to bruise the serpent's head, is also instrumental in rotating the head of her unborn child in the pelvic cavity.

In closing, let me again repeat the suggestion already made in the beginning of these remarks, viz.: that as we created the necessity of ligating the umbilical cord by cutting it with a sharp instrument, so have we created the necessity of manual ver-

sion (with all its dangers of infection and uterine rupture) by depriving the woman of the natural method of rectification by thigh pressure in the squatting or kneeling posture. So again we find it necessary to apply forceps in hundreds of cases when the head is on the perinæum, a necessity artificially created by ourselves, by our having deprived the woman of the power of thigh pressure, by which she could be readily delivered, had we not kept her in the recumbent posture.

A medical friend in Vermont related to me the case of a woman, too poor to employ a physician, who had one child squatting on a piece of carpet by the side of her bed. With the next child—her financial condition having meanwhile improved—she was persuaded to have a medical attendant. "And," she afterward said, "what do you suppose that doctor did? He kept me flat on my back, so that I could not help myself one bit." The result was, this woman had eight other easy and successful deliveries, on the carpet, and without any interfering medical attendant.

Once again; if pressure of the heel over the great sacrosciatic foramen is Nature's method of securing rotation, then the necessities of vaginal manipulation and difficult application of forceps, have been artificially created by ourselves, in that, by keeping the woman recumbent, we have deprived her of the mechanical influence of heel pressure in promoting the desired rotation.

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THE PERCENTAGE PRINCIPLE AS APPLIED IN INFANT FEEDING.

BY HENRY KOPLIK, M. D.
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The percentage principle in infant feeding is not a new one. It has its origin in an effort which has been for decades uppermost in the minds of physicians to feed infants with a substitute for breast milk approaching it in chemical composition. Thus, in the records of the past there is in Routh's *Treatise upon Infant Feeding* a formula by H. W. Lobb, who made an attempt to construct a milk similar to breast milk by a mixture of whey and cream. This must have been some four decades ago. The old theory that the curd of cow's milk was particularly indigestible led to many modifications, all uncertain in their composition as well as their digestibility. It may be said that all these early efforts crystallized into the work of two men, Biedert in Germany and Meigs in America, the pivotal idea in the method of these two men was that any substitute for breast milk should at least resemble it in composition. Meigs was insistent as to the amount of casein, the percentage of which should not exceed that which he showed was present in breast milk. He stated that the proteids ranged in breast milk from 1.2 to 1.5 per cent. and constructed only one mixture containing these percentages of proteids, 3.5 per cent. of fat, and 6 per cent. of sugar. He constructed his formulæ at home, with top milk, cream, water, and milk sugar. All children were fed on practically

the same formula, the quantity only of each feeding varied with the age of the infant or child, and as far as history goes, Dr. Meigs was a very successful infant feeder in his day. Biedert, his German contemporary, was not satisfied with one formula, but constructed from top milk, containing 10 per cent. of fat, some six formulæ containing from 1 to 2.3 per cent. of proteids, 2.5 to 3 per cent. of fat, and 5 per cent. of milk sugar. Biedert also was quite successful in rearing infants, to such an extent, that in commerce an attempt, some years ago, was made to introduce for general use the so called Biedert cream mixture. Thus, from earliest times, the percentage method was the first weapon chosen by those who felt the need of something more than simple dilution of whole milk to meet the needs of the infant deprived of the mother's breast.

The fact that the field of infant feeding to-day is still in many spots untilled soil, shows that these methods, as others which have succeeded them, did not meet all cases, and their abandonment, is the true estimate of their ultimate value. If they failed in solving the present and future problems of infant feeding, they were a step in advance by teaching the physician to think in food elements and percentages. It was no longer simple gross dilution, but an estimate of food values in percentages of proteids, fats, and sugar; the thought that an infant must have a food of some definite composition was the leading idea. In 1892 Dr. Rotch read his first paper before the American Pædiatric Society upon milk laboratories, and this paper was the first of many in which this distinguished pædiatrist elaborated a system of infant feeding, the so called percentage or American system. The elaboration of Rotch's method lays particular stress on the fact that small variations in the elemental percentages of the baby's food are of vital importance, the infant's food should be as accurately constructed as any prescription of the physician to the pharmacist. The food of an infant as a substitute for the breast should resemble as closely as is feasible, with slight variations of the percentages of fat, proteid, and sugar, human milk. To carry out his ideas, Rotch advocates the so called milk laboratory, in which the cow's milk is separated into cream and skim milk, and then reconstructed into definite formulæ, the preparations of which are given to the infant. As percentage feeding developed, there appeared many men who exhibited marvelous ingenuity in the construction of formulæ in which the proteids, fats, and sugars were given in percentages cut up into fractional quantities; thus one infant receives 0.5 of one per cent. of proteids, another 0.6 per cent. or 0.7 per cent. of proteids in its mixture. Happily, the minutæ which may be looked upon as an excrescence on the original method have not survived. The Rotch method as originally advocated by Rotch is the simple modification of milk at the laboratory into definite percentages of proteids, fats, and sugar.

Rotch and his pupils, having discovered, as they think, difficulties in the digestion of the proteid, have elaborated a second method of so called split proteid feeding. That is, the proteid of the milk is split into the caseinogen (curd casein) and lactalbumin and recombined. The main idea in this is to obtain

a proteid constructed from cow's milk, which will resemble the proteid of human milk, in which the curd, caseinogen, is thought to be in lesser proportions than in cow's milk. This is accomplished by recombining top milk with whey, or percentage cream and whey. The whey containing about one per cent. of soluble proteid, it is evident that by recombining it with a very limited curd caseinogen, a milk is obtained in which the curd will not enter in as great a proportion as in the original cow's milk. This idea goes hand in hand with the idea that the curding of cow's milk is the main obstacle to infant digestion, an idea which is seriously questioned to-day in other quarters.

The physician in using the percentage method of feeding infants prescribes to the laboratory the amount or percentage of proteids, fats, and sugars he desires. If the formula does not agree with the infant, he is supposed to change one or other ingredient until the correct percentage is obtained, which will conform to the digestion of the infant. The intelligent use of the percentage method must presuppose a knowledge on the part of the physician, of the effect of the various percentages of fat or proteid on the infant. The mere prescription of various percentages means little. An injudicious use of formulæ may upset an infant beyond all remedy. Though the percentage method is a great step in advance in the education of the physician as to the exact composition of the infant's food, it tells him little beyond a few primary facts how to feed an infant. We can understand this better by taking up seriatim the various ingredients of the infant's food.

The Proteids. The teaching of the percentage method is that the physician must begin with a low percentage of proteids, fully 0.5 of one per cent. in the newborn infant, and as the infant reaches the end of the first month, the percentage is increased to one per cent. The digestibility of the young infant in the first month is considered low or difficult for the proteids of cow's milk. After the fourth month, Rotch advises an increase of proteids to 1.5 per cent., and later on to 2 per cent.

The Fats. The newborn infant will digest two per cent. of fat, and a few weeks after birth, three per cent. of fat. The sugars are given in five per cent. to seven per cent. mixtures.

Most infants will thrive on such feeding and a variation of 0.2 to 0.5 per cent. of proteids or fats, either more or less, will scarcely be indicated by any disturbance of the digestive powers of the infant. The exceptional infant, however, that is, the infant on whose account all the agitation and the investigation in the science of infant feeding has had its origin, will not thrive if simple formulæ fail, on any variations of the percentage formulæ. The fault lies in such infants, not in the failure to strike the correct note in percentages, but in the inability to digest cow's milk.

Strange to say, it is difficult to reconcile the persistence of those who insist on the universal applicability of percentage formulæ with the readiness with which new mixtures and methods are taken up as soon as they appear in print. The truth is, that if a formula disagrees with an infant, and a few changes in the proteids and fats do not improve

the symptoms, we have reached the limit of that infant's tolerance of the food. If we persist in changing one or other percentage, the infant begins to show more palpable signs of nutritional disturbance, in the form of flatulence, colic, sleeplessness, loss of weight, and deterioration of tissues. In other words, though the percentage system has been a great teacher of food percentages, it has not materially added to our knowledge of the physiology or the physiological chemistry of infant feeding. The insistence of the advocates of percentage feeding upon a low proteid percentage for early infancy is met with equal positiveness by some men such as Czerny, Variot, Budin, Keller, Escherich, who cannot see that the old theory of indigestible curd or casein of cows' milk has at all been proved. According to these authorities, there is no one symptom, in all the gamut of symptoms, of non-assimilation in artificially fed infants which can be traced to the proteids. On the contrary, they point to the great tolerance of the youngest infants for high proteid percentages, as seen in buttermilk mixtures and malt soup mixtures. The large degree of disturbances are due to an intolerance of infant digestion to the fats of cow's milk.

I do not wish to enter too far into a discussion of the views involved in the study of the metabolism and assimilation of cow's milk, but when the advocates of percentage feeding insist that the physician or laboratory clerk can, by changing the percentages of formulae, find the correct food for the infant, they lead the physician along a mathematical and mechanical path to solve some of the most intricate problems of physiological chemistry. The caloric method has the same deficiencies, except that it does not mislead into intricate percentages of proteid and fat.

What then has the percentage method done for infant feeding? It has simply given the physician a means of obtaining a food for the infant accurately put together. It has shown him that he can give to young and old infants certain percentages of proteids and fat. To a limited degree, if he exceeds certain limits in the administration of fats he will see certain disturbances result. To feed an infant successfully, the physician must be thoroughly at ease in the knowledge as far as we have advanced, of the tolerance of certain infants, of the fats of cow's milk, and the disturbances which result from the ingestion of the fats of cow's milk, as compared to human milk. Nature, in the breast milk, presents a food of average, but ever changing, percentages of proteids and fat. A woman's milk not only varies from day to day in composition, but from hour to hour, and still the infant thrives. This truth should teach us that the kernel of infant feeding does not lie in the percentages, relative or otherwise, of the proteids and fat in the food, but in the nature of these proteids and fats. Our knowledge is as yet not deep enough to enlighten us as to the essentials in which cow's milk or any animal milk differs from human milk. With the thought uppermost of a milk similar to human milk in composition, which might take its place, an animal milk was long sought, which could be given, as obtained to infants. Such milks as ass's or goat's milk have signally failed to completely replace in nutritional value human milk. The insurmountable difficulties in the way

of obtaining these milks, and the unsatisfactory results when exhibited to the infant, has thrown us back to cow's milk as the only available substitute milk for the infant. It may be maintained without fear of serious contradiction that, if we wish to utilize the percentage principles in infant feeding, the exquisite accuracy of the laboratory is not absolutely essential, nor will a slight difference between the apparent and real composition of the infant's mixture militate against a successful result, if such a success is attainable in any given infant. What I mean is that a percentage mixture can be easily put together at home, which will be as accurate for practical purposes as our knowledge to-day demands. Thus we can construct from a top milk, at home, a mixture which will contain approximately within a small fraction of a per cent., 3 per cent. of fat, 1.3 per cent. of proteids, and 5 per cent. of milk sugar. This is to-day the more general method in use in this country.

The cow's milk is delivered to the humblest homes in quart bottles in which the milk has separated into so called top milk and a milk so poor in fat as to resemble skim milk. By utilizing this fact, Chapin has shown that by removing the top of a quart of milk to the extent of the first nine or sixteen ounces in a milk which originally contained four per cent. of fat, a top milk is obtained, which contains twelve per cent. and seven per cent. of butter fat respectively. By simple dilution of these top milks, the percentage of proteids being always constant, percentage mixtures are easily obtained which can be utilized for infant feeding with as great success as the most carefully prepared laboratory mixtures. But the same criticism obtains here, that I have been careful to emphasize in the preceding, that having constructed formulae within fixed limits for certain infants, they fail to thrive as on the laboratory mixtures. Why? Simply because, as in the days before percentage feeding, the infant's intestine cannot assimilate cow's milk. Heubner, who has spent many years at this problem, says that in elaborating the cow's milk into an assimilable food, there is so much energy lost in the intestine that distinct traumatism to the gut is ever going on with resultant injury to the infant. Czerny and Keller have shown quite well that in such infants, the cow's milk becomes a foreign body with the production of a fermentation in the intestine of an acid character (an acidosis) in which ammonia is drawn from the tissues to the detriment of the infant.

I have thus endeavored to lead you to the thought that success in infant feeding lies, I am sorry to say, in no particular method of feeding. It is the individual infant that the physician is called upon to feed. Else how can we explain the fact that, given two infants, fed on the same breast—one will thrive, the other will not. Taking two infants, twins, fed on the same substitute food—one will thrive, the other will not. Thus, the last word to-day, I feel on the percentage principle, is that it is an instrument to an end. This end must be attained through a thorough knowledge of the physiological chemistry of infant feeding. It has the standing of a prescription, which is dictated by an intimate knowledge of the capabilities and deficiencies of the assimilative powers of the infant to be fed.

30 EAST SIXTY-SECOND STREET.

BIOLOGY AS THE BASIS OF INFANT FEEDING.*

BY HENRY DWIGHT CHAPIN, M. D.,
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In studying the literature of infant feeding that originates in different parts of the world, it is most apparent and unfortunate that a common standard is not employed. In one country the calorimetric basis is advocated, while in another stress may be laid upon the percentage composition of the food, and perhaps in another locality efforts at a solution of the problem take the form of chemical manipulation, such as the addition of sodium citrate to cow's milk, and some lay great stress upon adjusting the proportions of casein and albumin in the food, or upon peptonization.

The calorimetric method, based upon the amount of heat excreted, really belongs to the science of physics as it is an attempt to apply the principle that energy and heat can be changed from one into another and that the amount of heat produced is an indication of the amount of work being done. The attempts at producing a suitable food by chemical manipulation indicate that those that make them think the whole problem is largely one of chemistry, while those that base their efforts principally on the quantitative composition of the food, and insist that the whole subject is covered by changing percentage compositions, would really make infant feeding a sort of subsidiary branch of mathematics. It is thus seen that in practice, at least, there are those that class infant feeding as a problem that is largely to be solved by physics, by chemistry, or by mathematics.

While it is true that all of these sciences may play a part in the problem, no one can successfully feed infants by confining his efforts to any one of them.

Infants have been fed more or less successfully by all the methods that have been proposed, but careful analysis shows that other factors than those given prominence have often been involved in such success. The problems of infancy belong to the science of biology, or the science of living things, and not until infant feeding is treated from this standpoint can there be a common ground for teaching and discussion. If the subject is approached from the standpoint of biology it becomes simplified at once, and a great many points are removed from the field of discussion and controversy. Biology shows that all living matter is composed of protoplasm which is more or less complex and differentiated into tissues. It is also well known that all animal life demands protein in the food to form new protoplasm and to replace metabolic waste of protoplasm. It has also been clearly established that there is a constant expenditure of energy whose waste product is heat, and that for carrying on the process of life energy containing food is also necessary.

In studying the life history of all forms of animals it is observed that all commence life in an exceedingly simple form, and for a time their development proceeds along lines so nearly parallel that it is impossible to determine to what species

the embryos belong. As development proceeds, a divergence of form and structure is noticeable. At birth this divergence is so great that there is no difficulty in distinguishing species, but the variation in the functions of nutrition at this time is not very great, especially in mammals.

At birth the milks of different mammals can be made interchangeable for many individuals of the young of various species, and as far as nutritive value is concerned they are often fairly satisfactory substitutes for each other. But at the end of the natural suckling period of many mammals no such interchange of food would be possible. To realize what a divergence in the digestive functions has been taking place during the suckling period, imagine an infant, a kitten, and a calf all being fed successfully on cow's milk. Here it is evident that at this time the difference in their digestive processes is not very great; but wait a year until all three have passed the suckling period. The infant will be just beginning to eat soft food, the kitten will have developed so that it can eat flesh and bones, and the calf will be thriving on grass and hay. In one short year the divergence has been so great that the natural food of the calf is then wholly unsuited to the kitten or the infant, yet the chemist will find that the food of all three at this time contains the same basic nutritive elements as it did at birth. An important matter that seems to have been generally overlooked in infant feeding is that milk is a food for a digestive tract that is constantly changing its form and function, and the differences in the digestive properties of the milks of various species are for specific purposes.

One of the functions inherent in all forms of living things is a greater or less power of adapting themselves to their food supply and their environment, and according to the doctrine of evolution many of the species of plants and animals have originated from divergences in manner of obtaining nutriment. In some infants this ability to adapt themselves to their environment is better developed than in others, and with them little trouble is experienced, but infants in whom the power to adapt themselves to their food is incomplete or feeble either die or are extremely difficult to manage.

If young mammals are looked upon as really in the embryonic stage until normal weaning takes place and the methods of nourishing them employed by the mother are considered, it will be found that during the embryonic period there is a constant change in the manner in which the mother nourishes her young, and in the form of the food she supplies, to coincide with the changes in the developing fetus. There can be no doubt that the food furnished through the placenta is fully as nutritious as that supplied by the mammary glands, but they are not interchangeable because they serve a purpose other than that of mere nutrition. They are specially adapted for different periods of development, and when the function of one has been performed it is displaced by the other. The relation between the placenta and the infant is so evident, and their perfect adaptation to each other so apparent, that they attract no attention. But few seem to realize that the problems of infant feeding center largely around the adaptation of the mammary secretions

*Read before the Section in Pediatrics of the Sixteenth International Congress at Buda Pesth.

to the developing stomachs, and that the mother's secretions adapt themselves to developing stomachs that are rapidly diverging in form and function. While the fats and carbohydrates in their composition and reaction to the digestive secretions are a good deal alike in different milks, the proteins are essentially different. Chemistry alone cannot explain this phenomenon. We must study the reaction of the protein to the digestive secretions, and then examine such reactions in relation to the growth and development of the digestive tract—in other words investigate the question biologically before we can understand the problem. A certain portion of the protein of all milks coagulates on coming in contact with rennin or rennin and acid, but the manner and extent of this coagulation stands in a direct relation to the proper evolution of the digestive tract of the animal. While there are many grades of coagulability in the milks of different animals, we may for practical purposes distinguish three of these grades and consider their significance. The protein may coagulate in a solid, gelatinous, or flocculent manner. In the ruminant, herbivorous animals, such as the cow, sheep, or goat, the protein coagulates in solid, tough masses that cannot readily leave the stomach. In these animals, digestion is always largely gastric and the stomach forms seventy per cent. of the digestive tract. Later on, this stomach will be called upon largely to digest tough, stringy masses of hay and straw and the previous exercise on the tough curds of the milk develops it for this future work. In the nonruminant herbivora, such as the mare and ass, the protein coagulates in gelatinous masses that can easily leave the stomach. There is an object in passing the curds quickly along, as in this class of animals digestion is largely intestinal, and the intestines form about ninety per cent. of the digestive tract. Later on, grain and grasses must be largely digested in the intestinal portion of the tube, and hence the curd is here also especially adapted to develop the intestinal tract for its future work.

In human milk the curd is thrown down in flocculent masses—a form intermediate between the solid and gelatinous types of curd previously noted. While digestion begins in the stomach it is largely carried on and completed in the intestine, and the stomach forms about twenty per cent. of the digestive tract. The curd is thus adapted to start the development and motility of the stomach and finishes by instituting these functions in the bowel which is destined to play a predominant part in digestion. Here again the curd, as far as *form* is concerned, furnishes an analogue and precursor of the future food of the infant. The curd forms small, flocculent masses, and the future food must be separated later into small masses by chewing before digestion can take place to the best advantage.

We have thus seen that the milk of herbivorous animals, whose digestion is principally gastric, forms solid curds that cannot easily leave the stomach; that the milk of herbivorous animals whose digestion is principally intestinal, forms gelatinous curds which easily leave the stomach and pass into the intestine; and that woman's milk which is intended for a digestive system in which gastric digestion is more than that of the horse or ass, but not so

great as the cow or goat, curds in flakes that stand between the other two types of curds. Hence it is a law that coagulation of the proteins of milk always takes place in such a way as to most readily adapt the digestive tract for its future work, as this function needs special preparation.

Biological science thus shows us that while a certain amount of protein is present in the milk of all animals, and is necessary for tissue building and growth, this protein must not only be coagulable, but must curd in a *certain specific way* in each species of animal. Thus is explained the reason that protein is the least readily interchangeable of the ingredients of the milks of different species. In this way science teaches that the protein must not be thrown into a soluble form or so altered as not to react normally to the digestive secretions if we would have healthy growth. We must always remember that the protein has a developmental as well as a nutritive function to perform; while immediate nutrition is of great importance to the growing infant, we must not by putting all food in a soluble form for quick absorption neglect to give proper work for the secretions and musculature of the digestive tract. It is only by the latter method that the natural food of the adult can later be digested by a normally developed tract. The science of infant feeding will thus influence the art by showing what should and what should not be done in the various manipulations that may be advised. Nothing is more evident than that the different physical properties of the milks of different species of animals after they have been acted upon by rennin, pepsin, and acid are in some way directly related to the differences in anatomy and function which are so marked in the digestive organs of the various species. When the methods of preparing food are studied from this view point it is found that all have the common property of changing the physical properties of the food in one way or another in the stomach. Which method is to be employed as a routine measure may be determined by comparison with the natural process that takes place in the stomach. This, however, must be decided by biology and not by chemistry of the test tube.

From the biological standpoint the main points to be considered in infant feeding are a sufficient supply of proteins to permit the production of new tissues; enough energy food to supply the necessary amounts of energy to carry on the vital processes; and the adaptation of the form of the food to suit the peculiarities of the individual infant. This adaptation must be brought about for the particular infant by some of the means already indicated. In some instances it will be by chemical means, in others by physical methods, in others by mathematical changes in the composition of the food, and again in some instances by a combination of these various methods.

It should be remembered that infants do not perform work outside of the internal work of the body and hence do not *need* food primarily for its energy contents or for its heat producing effect. The heat liberated as a byproduct of internal work is more than enough to maintain heat during the heated term and in some climates all of the time, and the infant is excreting heat continually. In cold cli-

mates where the loss of heat is greater than the amount needed to maintain body temperature, the loss is not made good by increase in production of body heat but by putting on clothing which shall prevent a too rapid loss of heat. In some animals this increase in heat retention in cold seasons is brought about by the development of a heavy coat of hair or fur which falls away at the beginning of warm weather. While in some animals the power to increase bodily heat by chemical means is present, in the higher animals the heat is retained by an insulation, and the production of it by chemical means rendered so unnecessary that this function is poorly developed.

Biology teaches that no two animals or plants are exactly alike, and that in some of them one function or structure is more highly developed than in others. Some infants assimilate food with such economy that they can make satisfactory gains on a quantity of food totally unable to maintain a stationary weight in other infants of the same age and weight; hence no fixed and absolute rules for the feeding of infants can be laid down. Different forms of food may be developed from time to time and different methods of feeding may be advocated, but their success will depend upon conforming to a few simple laws that apply to all animals, and biology alone can furnish us with these laws. While the different manipulations required to make various milks, or other forms of food, acceptable to the infant's stomach constitute the art of infant feeding, before any of these details can be accepted as scientific and thus of permanent utility it must be decided how far they are in accordance with biological laws. Biology must thus finally decide both the possibilities and limitations of every method that is advanced. This will emphasize growth as the principle feature of beginning life and will call for a special knowledge of the structure and functions of the digestive tracts in connection with the peculiar characteristics of the milk early furnished to each species. Biochemistry, physics and quantitative manipulations all have a certain value but we must be careful to put them in their right relations with each other and not over-emphasize any of them. We will thus escape the fallacy of confounding the fuel value and the actual nutritive value of a food which, as measured in terms of energy, are not identical. We must always put the emphasis upon true tissue forming material in a body that is undergoing rapid growth. Various food elements that may have the same fuel value may be widely apart in true nutritive value. This is the defect of measuring food values on a calorimetric basis for the young when growth should form the principal factor for consideration.

To recapitulate, neither biochemistry, nor the question of the best producing power of food, nor the quantitative manipulation of the ingredients of various milks can form alone a broad enough basis for scientific infant feeding. They may all be employed but must be subordinated to their proper place by biology. This science, however, will always put the emphasis on growth as the largest factor in early life. It likewise for the first time in the history of this question considers the developmental as well as the nutritive functions of milk

in connection with the evolution of the particular digestive tract it is intended to serve. Along this same line it will incidentally show how far various milks are interchangeable and suggest methods of making them so.

51 WEST FIFTY-FIRST STREET.

THE QUESTION OF CLEAN MILK.*

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It is not many years since a good housewife of this city refused to accept a bottle of certified milk because it did not have "a cowy odor." The bacterial contamination of milk is closely connected with its odor, keeping quality, and in a large sense with the physical welfare of its users.

Swithinkbank and Newman (*Bacteriology of Milk*, London, 1903) found that "with strict precautions naturally sterile milk may be obtained." This is not easy, but it is now recognized that there are sources of contamination that may be avoided, as the changes that take place are due principally to bacterial growth. The bacteria that occasion these changes are of two kinds, (a) pathogenic or disease producing, and (b) nonpathogenic or nondisease producing. This latter class of nonpathogenic bacteria has a deleterious effect on the keeping quality of milk; but some varieties aid in its digestion, in fact, may be essential to it. With the pathogenic bacteria, however, there is no such question of value, as they are moribund and add to milk a toxic quality that causes disease and death.

In considering the contamination of milk by bacteria, we must appreciate therefore these two classes of bacteria and the sources by which they enter the milk. These are: First, bacteria from the cow; second, bacteria from the milker and his utensils; and third, bacteria from the air. (This is not intended as a strict classification, but simply to call attention to the most common sources of infection.)

1. Bacteria from the cow may be caused by constitutional disease or by local sources of infection. A cow may have general tuberculosis with foci in the udder, or the foci may be present without apparent changes in the system. Not only do the milk ducts serve as channels of infection, but the hair and skin may harbor myriads of bacteria. Conn and other observers have noted the presence of large numbers of bacteria in the fore or first milk. Most of these bacteria are streptococci that find an entrance into the milk ducts from the structures in and around the teats. Milk that is drawn almost bacteria free may be contaminated by manure dropped from the cow's flanks.

2. The milker and his utensils may increase bacteria in the milk in a variety of ways. He may have soiled hands that on culture show colon and typhoid bacilli; he may have a sore throat that gives a growth of Klebs-Loeffler bacilli or a cough with expectoration containing tubercle bacilli; or he may wash his pails and cans in water contaminated by the excretions from a patient with typhoid fever. Thus pathogenic bacteria may be carried over an exten-

*Read as part of a "symposium" on infant feeding before the Medical Society of the County of New York, October 25, 1909.

sive area and destroy life far from the source of primary infection.

3. Invasion by bacteria in the air is observed when milking is done in barns where loose hay and dust are found, and where milk pails and other utensils are exposed to dust and dirt. Many of these bacteria are not pathogenic, but pathogenic bacteria may be blown into milk exposed in barn yards and stables, and by flies falling into the milk. A recognition of the ways in which bacteria may be introduced into milk is a long step toward their prevention.

Milk as taken from the cow is of a composition and temperature that fit it to be a culture medium for the growth of many varieties of bacteria. To inhibit the growth of bacteria and yet not destroy the nutritive qualities of milk, scientific men, departments of health and agriculture, and milk commissions are working on the same lines. These are found in the instructions of the Milk Commission of this society to the dairymen. The importance of this work is best expressed by Conn: "The larger portion of the sickness that comes from the use of bad milk is attributable not to adulteration or chemical impurities, but to bacteria present in milk."

Park, in his valuable contribution to the *Journal of Hygiene* (July, 1901), records the great numbers of bacteria present in ordinary milk. The growth of these bacteria does not, strange to say, begin at once when they find entrance into the milk at and after milking, for if milk is not too dirty and is kept at a temperature below 50° F. their growth will be inhibited. Milk that has a rather high bacteria content, if kept below 50° F., can be shipped long distances (Park, q. v.; and Conn, *Bacteria in Milk and its Products*) and be a wholesome food, while milk shipped at 70° and over will develop bacteria cultures that render it irritating and dangerous. A milk that is not bacteria free will develop few colonies and will actually show fewer bacteria after a few hours if it is kept at 50° F.; but the same milk will develop millions of bacteria if it is allowed to stand at a temperature of 70° and over for six to ten hours.

The question of clean milk is to produce milk under the best possible conditions of dairy hygiene, handling, cooling, and shipping. Included in the first requisite is the necessity for healthy cows free from infectious diseases.

Certified milk was inaugurated in New Jersey in 1893, under the leadership of Coit, and later (1900) in this county through the activity of Chapin and others. At present there are over fifty Milk Commissions in the United States endeavoring to improve dairy conditions and the production of milk. Twenty-one milk commissions were represented at the first annual session of the American Association of Medical Milk Commissioners, held in 1907.

A perusal of the requirements for the production of certified milk exacted by the commission acting under the authorization of this society will convince one of the safety that users of this milk have. Thirty thousand bacteria per c.c. are allowed, and this number is infinitesimal compared with many grades of family milk, where the bacteria range into the million. The weekly reports of bacteria counts of certified milks sold under the seal of the County Society show that almost all are under 5,000 per

c.c., and certain dairies produce milk with a bacteria count of 100 to 300 per c.c. Over 8,000 quarts of certified milk are sold daily in New York.

Some important requirements of the Milk Commission, the testing of cows for tuberculosis, the clipping of hair around the udder, etc., grooming the cows, prohibiting feeding and bedding immediately before milking, cleanliness of the milker and of his utensils, rapid cooling of the milk and its shipment in sterile sealed bottles for immediate delivery,—are accepted by physicians and laity as part of an ordinary routine for all bottled milk. Such is not the case, for there are many bottled milks delivered in New York that are far below the standard set for the certified article, although immeasurably better than the grocery or can milks.

Lane (*Medical Milk Commissions and Production of Certified Milk in the United States*, U. S. Department of Agriculture, 1908) states that the milk production under the milk commissions is only a fraction of one per cent. of the 10,000,000,000 or more quarts of milk annually consumed, but he believes that the instructions issued by such commissions have proved beneficial to many farmers and dairymen.

The direct influence of the use of clean milk in lessening intestinal diseases is so well known as to require only brief mention. Park and Holt (*Archives of Pediatrics*, December, 1903) made careful studies of the results of different grades of milk in infant feeding. They report "that, with the cleanest milk from the best cared for cattle, the smallest number of bad results occurred."

Kober's observations on Epidemics of Infectious Diseases Spread through Milk (*Journal of the American Medical Association*, May, 1901) include many epidemics of typhoid, scarlet fever, and diphtheria. These epidemics have become less frequent as their origin is understood, but without supervision and care clean milk,—that is, milk with a small number of bacteria,—cannot be produced. Hence it is that the question of clean milk resolves itself into the oversight of dairies and milk so as to provide the safest substitute for mothers' milk, when this is not obtainable. Certified milk as produced under the guarantee of this Society is the best milk, because it is the cleanest and freshest milk brought to the city.

68 WEST FIFTY-FIRST STREET.

THE FEEDING OF INFANTS DURING ILLNESS.*

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Within the limits of a "symposium" paper one can attempt only to give a statement of the principles that should guide one in the selection of the diet. It is assumed as fundamental that the individual patient is to be fed, and that, no matter to what class of cases he belongs, his peculiar reactions to foods, his susceptibilities, and, to a degree, his appetite must be considered. My paper is limited to disorders in children under the age of two years.

Our problems in feeding may be roughly divided

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into the cases that have fever and those in which fever is not a prominent feature. As a rule febrile cases are of short duration. Most of the afebrile feeding problems are feeding cases from the outset or else convalescents from acute gastroenteric disorder.

It will facilitate our discussion if we consider: First, the physiological and pathological action of foods; and second, the effects of fever on digestion and metabolism.

PHYSIOLOGICAL AND PATHOLOGICAL ACTION OF FOODS.

To be assimilated food must be digested; to be digested it must be brought into solution or fine emulsion; it must therefore eventually be either in minute subdivision or in liquid form. The sight, odor, and taste of food stimulate the action of the salivary glands and also induce the formation of hormones which enter the blood and stimulate the flow of gastric juice. When the food reaches the stomach a similar effect is produced upon the pancreas and intestinal glands. The chemical stimulus of the digestive juices, normally alternately alkaline and acid also has a similar effect, the acid gastric juice greatly stimulating the flow of pancreatic secretion. Strange as it may seem, any food, if taken with relish, tends to promote the secretion of the exact sort of digestive juice most suited to that food.

Water. Water is the most important of all the foods; being the universal solvent it carries the nutrient principles to the ultimate cells. It, therefore, is the basis for the secretions and excretions. All of the foods used in infancy contain a large proportion of water, milk being from eighty-seven to eighty-nine per cent. water.

Salts. These are contained in all foods and so need not be considered separately. The salts of the organic acids increase the alkalinity of the blood and so increase its bactericidal power. The rôle of sodium chloride in œdema is now well recognized; so that it should be withheld when one wishes to get rid of that condition.

Proteids. These are the blood makers and tissue builders. They stimulate but are not acted upon by the saliva. In the stomach they cause the active and prolonged secretion of gastric juice rich in hydrochloric acid; they then combine with some of this acid and, when partly converted into peptones, are passed into the duodenum—the free hydrochloric acid causing the opening of the pylorus. But little peptone is absorbed in the stomach, though alcohol when dilute will increase the amount thus absorbed. In the intestine the peptones undergo further and perhaps complete digestion. When given in excess or when not sufficiently subdivided (as milk clots) the peptones remain much longer in the stomach; when passed into the intestine they are then prone to undergo bacterial putrefaction. If the gastric juice is deficient or feeble the same result is produced—a longer delay in the stomach, a lessened formation of peptones, and then intestinal putrefaction.

In the intestine, the more rapidly the process of peptone formation, the greater the amount absorbed high up in the tube. Peptones stimulate peristalsis in the intestine. If the intestinal digestion is weak

the formation of peptones is slow, their absorption is lessened, and there is pushed onward a large amount of partly or undigested proteid to putrefy under the influence of the colon bacilli. The products of this putrefaction are such members of the aromatic series as indol, skatol, phenol, etc.; members of the fatty acid series especially, formic and acetic acids; gases such as methane, mercaptan, hydrogen, and hydrogen sulphide; and finally tyrosin, leucin, and ammonia. These may prove either irritant or toxic or both.

Irritation of the bowel, perhaps inflammation, may be the result; there is then lessened absorption of food stuffs and instead the absorption of the toxic bodies to a greater or less degree.

The proteids mainly used in infancy given in the order of their digestibility are those of breast milk, of cow's milk, eggs, meat, and vegetable proteid. Breast milk proteid requires the smallest amount of gastric juice, while vegetable proteids take the longest time for digestion and are least well absorbed in the intestine.

Carbohydrates. The carbohydrates stimulate the saliva and are in part converted by it into maltose, the salivary digestion continuing for quite a while in the cardiac end of the stomach. They stimulate the flow of acid gastric juice, and, not combining with it, are then rapidly passed into the duodenum. If they ferment in the stomach they give rise to gases and irritating members of the fatty acid series, such as butyric and caproic acids, as also to alcohol in small quantity. Eructations and vomiting may result.

In the intestine the maltose is rapidly absorbed—the carbohydrates being more completely taken up than either the proteids or fats. If present in excess of the digestive and absorptive capacity they undergo fermentation, with the formation of lactic, acetic, succinic, and butyric acids as well as gases. This acid fermentation checks the activity of the putrefying bacteria that destroy the proteids and so may be of use in the treatment of proteid putrefaction and of the bacteria that thrive in an alkaline medium; hence the field for buttermilk and bacillac recently so highly vaunted by the admirers of Metchnikoff. From such carbohydrate fermentation there may result diarrhœa with light acid frothy stools, acid, and excoriating to the buttocks.

The principal carbohydrates used are the sugars—milk, cane and malt—the dextrinized starches, and the starches from wheat, barley, rice, etc. Of these, the sugars—especially cane and malt—are most prone to ferment. Maltose stimulates peristalsis, therefore it is laxative and this may be so marked as to result in diarrhœa or in vomiting. Excessive carbohydrate feeding produces great flatulence, with eructations, distention, and diarrhœa. The chief advantage of the carbohydrates is that they are readily absorbed and are quickly available for energy in the liver and muscle cells as glycogen. They are readily changed into fat and they also act as proteid spacers.

Fats. Though the fats have more than double the caloric value of the proteids or carbohydrates, they have certain properties that render them difficult of utilization by sick infants. In the stomach they retard the secretion of gastric juice and so de-

lay the digestion of proteids; they also delay the peristalsis and the emptying of the stomach. If fermented in the stomach they produce irritating acids that may cause eructations, vomiting, and especially the regurgitation of sour, rancid fluid. In the intestines, if in excess, they mechanically interfere with the digestion and absorption of proteid, and they draw upon the fixed alkali for neutralization of their fatty acids. Thus they tend to diminish the alkalinity of the blood. To overcome the tendency to acidæmia ammonia is produced by the organism and appears in the urine as an evidence of acidosis. The acid fermentation products in the intestine may, if not neutralized, cause diarrhoea with green sour smelling acid stools; if neutralized hard calcium and magnesium soaps may be formed and appear as large curds in the evacuations.

The fats used in infancy are those of breast milk, cow's milk, cod liver oil, olive oil, and meat. Of these the breast milk fat is the most digestible.

EFFECTS OF FEVER.

The chief effect of fever, as regards metabolism is a destruction of the tissues—the proteids suffering more than the fats. Glycogen is likewise rapidly used up. More proteid is consumed than during fasting. There is great loss of water by evaporation, resulting in scanty urine and great thirst. There is lessened secretion throughout the alimentary tract, a diminution in the hydrochloric acid of the gastric juice, and a lessened power of absorption in the intestines. There follow constipation, increased fermentation and putrefaction in the intestines, loss of appetite, nerve irritability, and lessened power in both the voluntary and visceral muscles.

It is evident from a consideration of these effects of fever that water is the food of first importance. In short attacks of fever it is the only necessary food; it is of the greatest service in cases of acute diarrhoea to help wash out the bowels and to prevent relative desiccation of the cells. The addition of such fruit juices as those of the orange, lemon, or grape is of advantage in allaying thirst.

Since young infants do not chew and since for older infants chewing is an effort in fever, the food should be given in liquid form. In afebrile conditions not only is chewing possible but a positive advantage in promoting saliva. Toast, zwieback, or dry crackers may be given for this purpose.

The carbohydrates, being great proteid spares and an easy source of energy for both heat and muscular power, should be given in as large quantity as can be well tolerated. They should be given preferably with proteids. Fats should be used sparingly, since they are poorly digested in fever and they retard the digestion and absorption of the other foods. To compensate for the proteid loss in fever, some proteid or gelatin should be given. Milk is the easiest of the complete foods to be assimilated; it should be used in all cases that are not the result of a milk indigestion or infection. Whole or skimmed milk should be preferred—not top milk or cream—and this should be combined with a carbohydrate gruel or sugar and either peptonized or acidulated. The percentage method is the simplest plan for varying the different ingredients of the milk separately.

As the fever subsides the amount of food can be increased and more proteid and fat can be added, until the proper caloric equivalent in a well balanced food is attained.

GASTROINTESTINAL DISORDERS AND DISEASES.

Lack of appetite. Anorexia with or without fever. If breast fed, lengthen the intervals between the nursings and give water before the nursings. Breast milk requires from two to two and a half hours to leave the stomach under normal conditions; cow's milk requires at least three hours. When an infant has no appetite the intervals should be much longer, i. e., three to four hours. If the infant is artificially fed, diminish the number of feedings and give less and weaker food.

Vomiting. If without fever this is probably due to too large feedings, or too frequent or too rapid nursing. The indication is clearly to lessen the time of nursing and lengthen the intervals. If there are sour regurgitations and hiccoughs it may be the result of fermentation. In such cases the fats and the sugars, especially maltose, should be reduced. If the baby is breast fed the mother should take more exercise, drink more water, and lessen the quantity of meat, eggs and milk consumed.

Vomiting from pyloric stenosis demands breast milk. Cyclic vomiting will not be considered, as it occurs very rarely in infants.

Acute Gastritis. This is very rare in infants, but an analogous condition sometimes occurs in the course of measles about the second or third day of the eruption. Cool or iced lime water or weak tea is useful if anything can be retained. Rectal saline enemata may be necessary until the acute stage is over. Then whey may be given by mouth and later milk and barley water with the addition of sodium citrate.

Jaundice. Vomiting is not apt to be a marked feature after the onset, so that usually feeding by mouth is possible. Because of the deficiency of bile, fats should be avoided. Whey, buttermilk, or skimmed milk mixed with dextrinized cereals or with maltose should be given at first, later broths, whole milk, and cereal gruels.

Enterocolitis. For the purpose of giving, so far as possible, rest to the affected part, we give foods that are digested and absorbed high up in the alimentary tract; also those that leave little residue. At first water alone or barley water, plain or dextrinized. After a few days, when the temperature is down to 100° F. a teaspoonful of boiled skimmed milk may be added. If there are no bad symptoms the milk may be cautiously increased. If there is much putrefaction as shown by foul stools, buttermilk or ripened skimmed milk with or without cereal gruels is valuable. Albumin water in my experience results in intestinal putrefaction unless given in too small a quantity to be of nutritive value. Moreover, it serves as a good culture medium for bacteria.

Colitis. Should be managed much as enterocolitis, the only difference being that a larger amount of proteid and carbohydrate can be utilized.

Diarrhoea. In all cases of diarrhoea, whether the infant is nursed or bottle fed, the number of feedings should be reduced to the lowest possible. Food taken into the stomach excites a peristaltic wave

that is apt to reach the rectum and result in a defecation if the bowel is at all irritable. Feedings at long intervals diminish the number of such impulses and give the bowel comparative rest. It should be remembered also that animal broths and peptones excite peristalsis. Boiled milk with rice, barley, arrowroot, or wheat flour gruel or legume flour gruel are the best forms of food at first. It may be necessary to skim the milk and use no sugar. Malted foods should be used with caution.

As soon as the diarrhoea has ceased, the diet should be cautiously increased. Many infants are starved too long after summer diarrhoea or colitis. The prolonged use of a barley water diet is responsible for many of the severe cases of malnutrition seen at the end of the summer. As soon as possible but gradually the return should be made to whole milk and cereal gruels. The addition of the yolk of egg, if not vomited, is of great help in overcoming the anemia.

Constipation. The breast fed baby is seldom constipated unless the milk is failing. In such cases toning up the mother or if necessary supplementary feeding corrects the constipation. In bottle fed infants we may cautiously increase the amount of fat—never, however, beyond four per cent.—and we may substitute maltose for part or all of the milk sugar. Additional cream unfortunately often does harm and if given in large amounts may cause refusal of food and later vomiting and diarrhoea, or even an aggravation of the constipation. Peptonizing the food with extractum pancreatis by increasing the peptone and maltose may be of help. Broths, beef juice, orange juice sometimes, and prune juice nearly always, are of aid. To older infants the malted cereals, unstrained oatmeal, and cornmeal mush, together with apple sauce and prune pulp, should be given.

Typhoid fever. This disease is uncommon in infants. Water given with regularity is most important. Milk plain or peptonized or, if it is liked, buttermilk or ripened milk should be the basis of the diet. Kumyss, containing a little alcohol is also good. Along with the milk there should be given gruels or gelatin. The carbohydrates by their end products combat the putrefactive bacteria in the lower intestine—including the typhoid bacillus. There may be an idiosyncrasy for certain foods to produce distention. Typhoid is a long disease and infants cannot endure starvation as can adults. Therefore the caloric requirements should be kept constantly in mind and approximated as nearly as possible. Many of the late symptoms of typhoid are undoubtedly connected with starvation.

Pneumonia. Since this is usually a short disease our main object should be to furnish abundant water and alkalies and to prevent abdominal distention. A water diet is best for the first two or three days; then whey or milk and cereal gruels dextrinized or peptonized. Broths and liquid peptonoids are also useful changes. Orange juice, grape juice, and lemonade are of distinct advantage.

In empyema there is a great loss of protein, as shown by the peptones in the urine. We must in all suppurative processes be careful to give as much proteid food as can be taken care of.

Scarlet fever and the exanthemata. Here again

abundant water is of prime importance; the amount of fluid ingested should be regularly measured and compared to the urinary outgo. Modified milk is the best diet for lessening the tendency to nephritis. The cereal gruels should be used in the modification. Meat extracts and alcoholic preparations are contraindicated.

Diphtheria. Here we have a powerful toxine to combat—and the tendency to degenerations in the kidneys. Peptonized milk, beef juice, and gruels should be used and all should be given as warm as possible.

Mumps. Salty, sweet, or acid foods, or those that require chewing, increase the secretion of saliva and so cause tension and pain in the salivary glands. Tasteless liquid food should, therefore, be used, such as gruels made with milk or diluted milk.

Pertussis. The infant should be fed as soon as the stomach is settled after the vomiting attacks; only by frequent feeding can one avoid the emaciation so apt to supervene in severe cases. The food should be liquid, since the passage of a bolus down the oesophagus is apt to irritate the trachea and induce a paroxysm. Diarrhoea, which is not uncommon, should be managed as already advised.

Rheumatism is almost unknown in infants. When it occurs the diet should be managed as for any febrile infection.

Tuberculosis. In infants this disease is either a meningitis, or else pulmonary or glandular. In tuberculous meningitis we soon have to resort to gavage by either mouth or nose. As regards the diet we must feed as we would in health, making a modification only as the fever compels and giving as full a diet as can be properly assimilated. The use of large quantities of fats or oils or of proteids disturbs the digestion and defeats our purpose. Fresh air, the optimum quantity of all the three great classes of food stuffs, and careful attention to the gastrointestinal functions—these are the best we can do for such patients.

110 EAST SIXTY-SECOND STREET.

EXPERT TESTIMONY.*

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A trial at law is the examination before a competent tribunal, according to the law of the land, of the facts or law put in issue in a cause, for the purpose of determining such issue. The statement or declaration of a witness as to a fact at issue is termed testimony. The purpose of testimony is to ascertain the truth of disputed facts. Any medium by which truth is established, including testimony, is called evidence. The effect of evidence, together with presumptions of law and of fact, and citations of law, is designated as proof. For the purpose of this article a single phase of what is termed testimony may be considered, namely, that of expert or opinion evidence. This phase is again necessarily limited by the scope of this paper to a few features of opin-

*Read before the Windham County Medical Association at its semiannual meeting held in Danielson, Conn., on October 26, 1909.

ion evidence classified under the head of medical testimony.

It is a general rule of evidence that a witness must testify to such facts only as are within his own knowledge. The exceptions to this rule are allowed on the ground of necessity where the subject of inquiry is not susceptible of direct proof, and may be divided into two classes, the testimony of ordinary witnesses and that of experts. In certain instances ordinary witnesses may render an opinion based upon their own observation, while experts may give in evidence opinions based on the testimony of other witnesses. In the case *Sydeleman v. Beckwith*, 43 Conn. 9, the court makes this distinction clear in its decision, saying, "to render opinions of common witnesses admissible it is indispensable that the opinions be founded on their own personal observation, and not on the testimony of others, or on any hypothetical statement of facts, as is permitted in the case of experts. In some of the cases it is held that the opinion can only be received in connection with facts stated by the witness. In other cases this is not required; as, for instance, in questions respecting the identity of persons. A witness well acquainted with another usually identifies him without conscious mental effort in the way of comparison or inference. In the absence of striking peculiarities of form or feature the identification may be, and often is, by the mere expression of countenance, which cannot be described. And the witness may be correct in his opinion, and yet be unable to give a single feature, or the color of the hair, or the eyes, or any particulars as to the dress. In such cases the distinction between opinion and fact is so very nice that it might perhaps have been as well to consider such identification as a fact, like any other direct perception of the senses."

Upon matters involving questions of science, skill, or trade, persons expert in such matters, may not only testify to facts, but are permitted to give their opinions in evidence. It is for the trial court to determine whether or not a person offered as a witness possesses the necessary qualifications to give such opinions, and the decision of a trial judge admitting such person to testify as an expert will not be reviewed upon appeal, unless it is clearly shown to have been based on incompetent or insufficient evidence.

A scientific writer has defined "an expert as one who can see all sides of a subject." Courts, however, have found that he frequently is a person who will testify to but one side of a subject, and that his testimony is liable to be warped in favor of the side in which he is employed. An eminent English jurist commenting upon this tendency said that "skilled witnesses come with such a bias on their minds to support the cause in which they are embarked, that hardly any weight should be given to their evidence," and the United States circuit court in passing upon the value of such evidence declared that testimony of experts of a speculative and theoretical character is not always of much value.

An expert may be more accurately defined as a person having skill, experience or peculiar knowledge on certain subjects or in certain professions. He may acquire his knowledge from study and direct mental application. He may

not only testify to facts, but may give his opinion on questions of science, skill, trade, art, or concerning a matter involving scientific or technical knowledge, and not within common observation, upon which the ordinary mind is capable of forming a judgment. He may give his opinion upon a case hypothetically stated, or upon a case in which the facts have been established; but he may not determine from the evidence what the facts are, to give an opinion upon them.

The rule adopted in this State as to experts as set forth in *Taylor v. Monroe*, 43 Conn. 43, is, that "in cases involving questions of science and skill or relating to some art or trade, experts are permitted to give opinions; the principle embraces all questions except those, the knowledge of which is presumed to be common to all men. So the business which has a particular class devoted to its pursuit is an art or trade within the rule." The court in amplifying the rule says, "the true test of the admissibility of such testimony is not whether the subject matter is common or uncommon, or whether many persons or few have some knowledge of the matter, but it is whether the witnesses offered as experts have any peculiar knowledge or experience, not common to the world, which renders their opinion founded on such knowledge or experience any aid to the court or the jury in determining the question at issue."

Every trial court has the inherent power to summon and compel the attendance of witnesses before it, without regard to their employment, or rank in life. Tender of the statutory fees, except on the part of the State, is necessary to compel such attendance. Neglect to attend when legally summoned or refusal to be sworn or to testify when present in court, constitutes contempt and is punishable by fine and imprisonment, at the discretion of the court. The right of a witness to refuse to give his opinion on matters of skill and science has been sustained in some jurisdictions. Where, however, he has made an examination of the particular subject matter in issue, he may be compelled to disclose the result of that examination. A case in point is that of *Dr. Spohn*, who made an autopsy of the body of *Benito Martinez*, who was murdered in Texas, and who refused to state the cause of death on the ground that his services were unpaid for by the county. The court held that while *Dr. Spohn* could not have been compelled as a medical expert to make a post mortem examination unless paid for it, yet, having done so could be compelled to testify the result thereof.

The giving of expert testimony has been made compulsory by statute in many States without other fees than that of ordinary witnesses. In Connecticut the expense of examination by reputable physicians of an accused person who appears to be insane, is made part of the taxable costs by statute, and is paid by the State. In other cases, the practice has been to allow the court to determine the necessity for expert witnesses and the amount of their compensation, at its discretion. In addition to an expert witness fees being taxed as costs, the party calling him is liable for his compensation, so that in most cases his remuneration is fairly well secured.

Of the various experts recognized by law, none is of paramount importance to the medical expert. He may testify as to conclusions of science or give an

opinion on medical facts observed by himself or observed by other persons and testified to by them in the trial. No evidence commands greater consideration and respect than that of the physician and surgeon when testifying to facts brought to his attention in the regular course of practice, or conclusions drawn by him from observation of a particular person whom he has attended. It is only when a medical expert becomes a professional witness that his opinions become of doubtful value. Much of the doubt attached to the testimony of the professional expert is due to the use of the hypothetical question.

An hypothetical case consists of a statement of assumed facts intended to be propounded to an expert, in order to elicit his opinion. The proper way in examining an expert, is to state all the particulars upon which his opinion is sought, and the presiding judge may prescribe the form in which such questions must be asked, and he may exclude a hypothetical question, until a foundation for it has been laid by the evidence. The question should present such assumptions only as counsel may fairly state that the evidence tends to justify, and while it may not be improper because it includes only a part of the facts, it would be so if, by reason of such omission, it failed to present the facts which it did include in their true relation.

It is urged as an objection against the use of the hypothetical question that in actual practice it does not present proved facts in their true relation, but is in reality a summing up by counsel of facts favorable to their side of the contention, minimizing or omitting unfavorable facts, and giving undue prominence to insignificant circumstances. Expert witnesses on the same case frequently explain the conflicting statements made by them as due to the manner the hypothetical question was framed by the respective attorneys, overlooking or concealing the fact that the question was largely constructed by suggestions made, or direct aid rendered, by the same experts. Whenever an expert accepts a retainer from either party to a suit at law, he cannot escape suspicion of being employed in an advisory capacity to such party, and his testimony biased by the retainer. If he would overcome this suspicion, he should answer the questions propounded him candidly, fully, and freely, with a determination to tell the entire truth, and maintain the prestige and honorable standing of his profession.

Opinion evidence, to be admissible, must not only be given by an expert, but must be of such a nature as not to fall within the observation and experience of the common witness. This line of demarcation is frequently uncertain, and it may be better understood by a few illustrations. In the case of *Bradbury v. Bardin*, 35 Conn. 577, in an action brought to prove that a physician was not carrying on a regular, legitimate, nonsectarian practice, the court held that the testimony of a regular practitioner of the nonsectarian school in the same town, and a member of the county medical society, that the defendant was not associated with him as one of the regular physicians of the place, and that his practice was irregular and illegitimate, was admissible, and the court further intimated that testimony from such a witness, to the effect that the regular medical association would not associate with the party in ques-

tion, because his practice was irregular, would be admissible. Physicians will not be allowed to state what in their opinion was the probable cause of the particular wound, but they may state whether certain alleged causes would produce similar wounds, or the character of instrument by which such wounds are inflicted, or as to the amount of force necessary to produce such wounds. They may also state whether or not certain wounds or injuries were inflicted during life, and the direction from which the blow causing the wounds or injuries came, and whether or not death was caused by the blow. They may give an opinion as to the permanence of certain injuries with reasonable certainty, but not as to the likelihood or possibility of their permanence. They may give an opinion as to whether or not the symptoms of which a person complains are feigned, but not as to the motive. Where death results from concurrent causes the witness may testify which one operated as the proximate cause; whether death was caused by drowning to the exclusion of other causes; whether the deceased died from the effects of poison, and also the effect on a person of a certain quantity of a particular drug. He may testify as to the proportion of patients who recover from a certain disease, whether or not a disease is curable, but not as to whether the decedent would have recovered if he had received better medical treatment. He may testify whether abortion was accomplished by mechanical means or the administering of drugs, and the quantity of certain drugs necessary to produce it.

Much of the conflicting evidence of experts is due to the distinction that exists between the medical and legal views of insanity. Prominent writers on medical jurisprudence have defined it as a physical disease, located in the brain, which deranges one or more of the mental or moral faculties. Eminent alienists declare that a person so afflicted is deprived of sufficient power of self restraint to refrain from the commission of an act he knows to be wrong or criminal, and that he should not be punished for what he cannot avoid doing. The law, on the other hand, holds every man responsible for his acts who is a free agent. "Insanity" is really not a legal term, but a general term that is applied to every person who is *non compos mentis*, or of unsound mind, and is not confined to persons who are wholly without understanding. In determining the capacity of a person to make a will the Supreme Court of Connecticut in Durham's Appeal declared, that although a testator may harbor some insane delusions, fancying things to exist which have no existence, and of the existence of which he has no reasonable evidence, yet, if he has mind enough to know and appreciate his relations to the natural objects of his bounty, and the character and effect of the dispositions of his will, then he has a mind sufficiently sound to enable him to make a will.

It has been laid down that the test of a person being of unsound mind in a legal sense is the existence of a delusion, or a belief in facts which an ordinary person would not credit, or a belief which one cannot understand how any person in his senses should hold; and that mere eccentricity of habits or perversion of feeling and conduct, forming what is termed moral insanity, do not constitute legal incapacity,

General insanity must be distinguished from partial insanity or monomania. In case of the former, a lucid interval, a real absence at the time of making the will, of the disease itself, and not of its apparent delusions only, must be shown. In case of the latter, opinions have differed.

In criminal trials, particularly those where premeditation or malicious design is an element of the crime, the plea of insanity as a defense is available in its fullest scope, and affords both counsel and alienist ample opportunity to display their respective talents and abilities to the fullest, and, as a rule, in a manner that reflects credit upon the two honorable professions they represent. While the law presumes every man to be sane, yet if it can be shown that the accused was laboring under such a defect of reason from disease of the mind as not to know the nature and the quality of the act he was doing, or if he did know it, that he did not know he was doing wrong, he will be held to be irresponsible on the ground of insanity. Hence arises the several defenses of insane delusions, temporary or parental insanity, irresistible impulse, moral insanity, and delirium tremens, which the limits of this article will not permit to be treated.

From the foregoing it would appear that whatever the shortcomings of the medical expert may be, on the whole he is entitled to confidence and respect rather than criticism and censure; that he is constantly adding to the scientific knowledge of the world by his researches, and applying that knowledge to aid justice in ascertaining the truth. He is worthy of the esteem of his own profession, and compels the respect of his legal adversaries who frequently are his personal friends.

762 MAIN STREET.

POSTEPILEPTIC ALBUMINURIA.

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By postepileptic albuminuria is meant the appearance of albumin in the after seizure urine of epileptics. The object of this paper is to determine the occurrence of this condition and if possible throw some light on its causation.

Literature.—Since Seyfert, in 1854, reported the finding of albumin in the after seizure urine of epileptics, a considerable number of articles have appeared which deal with this condition, but which report rather inconstant results. It does not appear profitable to the present writer to give a detailed summary of the literature of this subject. The articles were usually based on a small number of cases and the findings of the various authors rather at variance with one another—indeed, one or two failed to find albumin after seizures. Voisin, in his excellent monograph on *Epilepsy*, gives the literature of the subject fairly completely, though very briefly.

The various causes which are assigned for the appearance of albuminuria after seizures are as follows: 1. Circulatory disturbances in the kidneys associated with the seizure. Mostly of the nature of passive congestion. 2. The toxic action of un-

known substances present in the blood at the time of seizure. 3. Neurotic, due to the stimulation of the albuminuriogenic centre of Bernard. 4. That the albuminuria is similar to the condition which is found in athletes after severe exertion. 5. That there is an unrecognized or latent nephritis.

Present Work.—In studying a disease whose ætiology is so complicated as that of epilepsy, a symptom such as the passage of albumin into the urine after seizures should not be overlooked. The possibilities that this albuminuria is due to an old nephritis which has passed unrecognized—and the nephritis might also have ætiological relationship to the epilepsy—makes it of importance in the study of the causation of the disease.

The present work was undertaken with the idea of utilizing the large material collected at the Craig Colony to the fullest desirable degree, in order that the accident of selection of cases might be eliminated as far as possible by large numbers, thus enabling more accurate averages. It has been the desire of the present writer to present a somewhat more complete study of the material used than has appeared in the writings of previous authors, i.e., with regard to the apparent ætiological factors in the cases used, seizures, influence of age, sex, etc., and sediment pictures. It has also seemed desirable to include certain collateral evidence bearing on this condition.

Material and Methods.—To obtain material for this work, orders were sent to the nurses in the several divisions of the colony to send to the laboratory in separate containers the first and second voidings of urine after seizures, stating time of seizure, time voided, and the character of seizure. In this manner the cases were selected by the nurses and the present writer had nothing to do with the choice of cases or the times of collection, other than the directions given at the beginning of the work that the first sample should be collected not more than two and the second not more than four hours after the seizure.

In the laboratory, the samples were tested for albumin by the ferrocyanide and acetic acid test, controlling with others where any doubt was felt as to the reaction. Where albumin was found, the sediment was examined microscopically and control urines were obtained at times when the influence of a seizure could be eliminated.

Results.—The results of the work are shown in the following table:

	Males.	Females.	Total.
Cases examined,	107	140	343
Albumin found (cases),	50	18	74
Total seizures,	587	315	902
Severe seizures*,	431	238	669
Mild seizures,	156	77	233
Albumin found after seizures,	80	23	103
Albumin after severe seizures,	66	18	84
Albumin after mild seizures,	14	5	19

Expressing the results shown by this table in percentages, we find that postepileptic albuminuria occurred in 28.4 per cent. of the males and in 12.3 per cent. of the females or in 21.5 per cent. of the whole number of cases. As regards the kind of seizure, it may be said that in both males and females the entire

*The classification of "severe" and "mild" has been adopted as being for our purposes more accurate than grand and petit mal.

number of seizures was made up of about seventy-five per cent. severe and of twenty-five per cent. mild attacks. Of the seizures followed by albuminuria 81.5 per cent. were severe and 18.4 per cent. mild, these figures being about those for each of the two sexes as well as for their average. It is thus seen that the occurrence of postepileptic albuminuria is greater in males and after severe seizures than it is in females and after mild attacks.

The present age, the age at onset of epilepsy, and the duration of the disease are shown in the following table:

Ages or years.	Present. age. Cases.	Age at onset. Cases.	Duration. Cases.
1-5	0	17	8
6-10	0	15	14
11-15	5	21	21
16-20	20	5	16
21-25	20	9	6
26-30	9	2	3
31-35	8	0	1
36-40	3	1	1
41-45	4	1	1
46-50	4	0	0
51-55	1	0	0

It is seen from an inspection of this table that the majority of the patients showing albumin were young people of twenty-five or under, that the onset of the disease in these patients was usually before the age of fifteen, and that the duration of the disease had been between five and twenty years.

Infectious conditions do not seem to play any great part in the personal histories of these cases:

Measles and pertussis in the same case	27
Measles alone	11
Pertussis alone	5
Scarlet fever	10
Typhoid and malaria, each	1
Diphtheria	4
Meningitis	6

There was alcoholism in two cases; syphilis was reported only once.

Albumin is not constant in the same individual, i.e., because an individual has once shown albumin after seizures is no warrant that he will again show it, nor on the contrary is freedom from albumin any guarantee that the next seizure will not be followed by albumin. Our cases showed no constancy in this matter. Several negative seizures might be followed by a positive, or a positive result might be followed by several negative.

Samples voided in seizure were examined, but the majority were passed from a few minutes to several hours after the attack. Albumin may be present at any time. It may be found in the urine voided during seizure or again it may not occur till one and three-quarter hours after the attack. It may disappear as early as an hour and three-quarters or may continue into the fourth day following the attack. The quantity of albumin varies greatly in the several cases, from the faintest traces to the heaviest precipitates. Substances precipitated by acetic acid were not infrequently encountered, but were not considered in making up the table of results.

One of the most striking facts brought out in this work is that albumin is always accompanied by casts. The sediment picture is of all degrees—in some urines but one or two casts were to be found in a

drop of sediment, while in others the field would be crowded with them. Microscopic fields containing five or ten casts were not uncommon. Practically all varieties of cast were found, though, as may be expected, cellular varieties were rare. So severe is the picture presented in some of these cases, that had the urine been received at the laboratory without clinical data, the guess would have been natural that the urine was from a case of severe nephritis.

After the seizure, the casts persist much longer than the albumin. It must be noted, too, that control urines not infrequently show casts in the absence of albumin. This is, indeed, a common finding among our people and has perhaps some significance. References to casts in the literature are infrequent and give no idea of the conditions seen in the present work.

Having now discussed at some length the occurrence of albumin and casts after seizures, we must now inquire of ourselves what light we can throw on the aetiology of the condition?

The finding of albumin and casts naturally suggests at once an unrecognized nephritis, especially in view of the finding of the latter in the interval. With a view of eliminating this possibility, physical examinations were done in about half the cases, taken at random, and in no case was there found anything pointing to a nephritis, with any positiveness. Slight renal pain was occasionally elicited on questioning and in one case there was a history of bloody urine passed some years previously. In a few cases, there were slight heart murmurs usually of the mitral regurgitant type and slight enlargements of the cardiac dullness. Blood examinations were negative. Blood pressures were taken in practically all the cases; the Janeway apparatus was used, the patient sitting in a chair, with the cuff at the level of the heart. The results were not remarkably high, but on the whole somewhat above normal in several cases:

90—99 = 2; 130—139 = 17; 170—179 = 1.
100—109 = 7; 140—149 = 6;
110—119 = 7; 150—159 = 11;
120—129 = 12; 160—169 = 2;

The three patients having the highest blood pressures all showed slight heart findings. It may be noted that the patients which gave a history of scarlet fever in no case exceeded a blood pressure of 130.

In a few of these cases, figures are available showing the quantity of urine excreted in half days, i.e., from 7 a. m. to 7 p. m., and from 7 p. m. to 7 a. m. The twenty-four hours' quantity was uniformly large—this, however, is characteristic of a good many epileptics; urines of 2,500 to 4,000 c.c. are not uncommon. The day portions were usually larger than the night with one exception.

Additional light may be thrown on the subject through the pathological material which has accumulated in the laboratory. It might be interesting to canvass the entire material available as regards renal conditions, but the fact that many of the deaths have been from acute disease, with which a nephritis was in many cases associated, makes this of doubtful value. There is, however, a class of cases in which the kidneys should show facts of value to us in our examination of postepileptic albuminuria.

These cases are the "deaths in seizure" cases. Sudden death occurs very commonly in epileptics either in or shortly after a seizure; from the seizure itself or from suffocation while unconscious. These cases are always referred to the coroner, and as the picture of a seizure is rarely perfectly complete, an autopsy is always ordered and is completed within a few hours after death. In this manner, there are in the laboratory numerous specimens which should afford some insight into the conditions in the kidney during or soon after the seizure.

On the whole, these kidneys show great congestion of the glomeruli and somewhat less frequently of the intertubular capillaries. The capillaries of the pyramidal portion are very commonly congested. There is usually to be found granulation and loss of outline of the tubular epithelium. The nuclei of these epithelial cells are usually well preserved, but where the cell outline is lost, the nucleus has also usually disappeared. Glomerular scars and connective tissue increase are not infrequently found. The following table will show more clearly the microscopical appearance of these kidneys. As suffocation might have its effect on the appearances, the findings in those "sudden death" cases in which it could be eliminated are separately given:

	All cases.	Cases without suffocation.
Congestion of glomeruli	34	8
Severe	17	3
Some	14	4
Slight	3	1
No glomerular congestion	1	1
Congestion of intertubular capillaries.....	25	5
Severe	6	2
Some	18	3
Slight	1	0
No intertubular congestion	13	4
Congestion in pyramidal portion	10	2
Congestion, location unspecified	1	0
Connective tissue increase	19	4
Glomerular scars	16	4
Granular material in lumen of tubules.....	25	7
Epithelium swollen and granular	28	8
Infarct scars	4	0
Total cases	38	9

It may be noted that in the thirty-eight cases there were found: Moderate cardiac hypertrophy, 11; valvular lesions, 6; arterial degeneration, mostly intimal, 11. The appearances in those cases in which suffocation could be eliminated are thus practically those of the whole group of "seizure deaths."

In four of the cases in which albumin was found after seizures, death has since occurred:

CASE I.—E. L., No. 1725, female, showed albumin one hour after a severe seizure but none three hours after, with numerous hyaline casts at the time of the first sample, but none with the second. She died about four months after this observation, aged forty-eight. She had a seizure one day at 1:20 p. m. and was noted by the nurse to be breathing with difficulty. Physician arrived at 1:30 p. m. to find her dead. The autopsy showed a small heart with mitral flaps somewhat nodular at the edges and the aortic orifice slightly contracted. Lungs dry and comparatively bloodless. Kidneys showed passive congestion. No specimens taken.

CASE II.—A. C., No. 2121, male, was a sufferer from a peculiar form of attack which occurred during sleep and may be described roughly as a violent nightmare. Albumin was found once forty-five minutes after a seizure but none at three hours. Again, it was found twice in a series of four such attacks occurring during one night; the first and last were mild and negative, the second severe and

third mild were both positive. Another time, albumin was found after two out of three mild attacks, the middle one being negative. It may be noted that the urine of this patient died of lobar pneumonia about nine months after the observations were made as stated. The autopsy showed a large heart (the man was a blacksmith). There was some calcification of the aortic cusps and the aorta was atheromatous in one or two places having an appearance like an ulcer. Kidneys were cloudy and on microscopical examination showed some increase of connective tissue just below the capsule. Bowman's capsules were thickened in places and the epithelium in some areas was granular and the edge bordering on the lumen of the tubule was frayed out. There was moderate glomerular congestion.

CASE III.—J. J., No. 1302, male, showed albumin within the first hour following each of three seizures, and it was still present each time at the third hour. There were three negative seizures. About a year later, this boy was seen to die immediately after or during a grand mal seizure. The kidneys were negative to gross examination; the coronary arteries showed intimal thickening. Histological examination showed that the glomeruli were markedly congested and filled the space of Bowman's capsule. There was little or no intertubular congestion. There was no connective tissue increase and no glomerular scars were seen. The tubules were all filled with granular material, the epithelium showed no distinct border on the tubular lumen and the nuclei were excellently preserved.

CASE IV.—W. R., male, No. 1208; aged at death, thirty-three years. This man was strong and healthy. During his residence at the colony, he suffered from time to time from delusions of persecution in which his house mates were the usual aggressors. During the summer of 1908, albumin and casts were found twenty minutes after a severe seizure but both had disappeared at two hours and twenty-five minutes. Hyaline casts but no albumin were found in the interval. Physical examination negative, blood pressure 122 mm. Hg. In November, 1909, this boy was found in bed on his face, having died apparently in or shortly after a seizure. Great cyanosis of face and chest, with many petechial hemorrhages. Autopsy about five hours after death. General congestion of all organs was present, with edema of lungs. Slight intimal degeneration of coronary arteries. Kidney sections obtained by the freezing microscope, show the epithelium intact but the glomerular tufts are swollen filling the Bowman's capsules, some of which were very slightly (?) thickened. In one case, there was a partly formed glomerular scar. There seemed in places to be slight prominence of the intertubular connective tissue. Little congestion.

Summary.—To summarize our findings for the purpose of discussion, we would make the following statements:

1.—Postepileptic albuminuria is found in about twenty per cent. of all patients examined in a fairly large series of cases. Men are much more frequently affected than women, and severe seizures are more likely to cause the condition than are mild attacks.

2.—The condition is not constant in the same individual.

3.—Control urines show the absence of albumin at times when the effect of seizures may be eliminated.

4.—The presence of albumin is almost invariably associated with the finding of casts, sometimes in great numbers and variety. They persist longer than the albumin, but may also be found in the interparoxysmal period in the absence of albumin.

5.—The first appearance of albumin may be at any time within the first two hours after the attack and it may not disappear till the fourth day.

6.—Physical examinations are not fruitful of diagnostic results, except that a few slight heart findings are noted. The blood pressures are in some of the cases elevated.

7.—In a series of cases of death in or shortly after seizures congestion of the kidneys is almost constantly found, with albumin in the lumen of the tubules. There is also a good deal of chronic change.

From this summary, what conclusion is to be drawn as to the cause of postepileptic albuminuria?

It seems probable from the evidence submitted that there is renal congestion following many severe and some mild seizures. This alone is sufficient to account for the albuminuria, and perhaps for some of the casts. There are not a few cases in which signs of chronic nephritis are present on histological examination. It seems to the present writer that we have to deal with a condition which has its origin in the congestion following or associated at any rate, with the seizure and it does not seem an unfair presumption to assume that some of the chronic changes are due to the congestion, so often repeated.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCII.—What are your views on the open air treatment of Pneumonia? (Closed November 15, 1909.)

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Answers due not later than December 15, 1909.)

XCIV.—How do you treat the night terrors of children? (Answers due not later than January 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question XCI has been awarded to Dr. Samuel Robinson, of Brooklyn, whose article appears below.

PRIZE QUESTION XCI.

THYREOID FEEDING.

By SAMUEL ROBBINOVITZ, M. D.,
Brooklyn.

As far as I can elicit from my own investigations in practice as to the use of the thyreoid gland and its preparations, the latter has a far wider sphere and use than may be realized by the average practitioner.

I have tried its use and derived a great deal more benefit than I could imagine in such conditions as myxœdema, obesity, cretinism, exophthalmic goitre, one case of acromegaly, and various skin affections.

In myxœdema I found all the symptoms ameliorated after the use of thyreoid extract, gr. v, three times a day within two months or a little longer. But I found the solution better than the powder,

because the latter may decompose. It is best to begin with Mii , three times a day in water, and gradually increase the dose till ten minims are given. When all symptoms have disappeared it is necessary that ten minims should be taken, twice a week, by the patient for the rest of his life to prevent recurrence.

In slight cases of goitre I found diminution of it after the use of the thyreoid gland for a certain length of time. If in cretinism this drug is given early in the patient's life, both the mental and physical condition will be materially benefited.

I tried it in several cases of tetany in children and obtained good results. I tried it also in several cases of chronic skin diseases and found fair results.

In chronic psoriasis, where chrysarobin and various salves failed, I derived great benefit from preparations of the thyreoid. However, in such a case the patient must be treated in the following manner: The patient is put to bed and must be made to take daily enough of a thyreoid preparation to keep him on the brink of poisoning by it. But I regret to say that when I stopped the treatment there was a relapse of the psoriasis.

In obesity it renders quite satisfactory results, but the constant use of this drug in this condition has a tendency to injure the general health.

71A SUMNER AVENUE.

Therapeutical Notes.

Adonis Vernalis in the Treatment of Cardiac Insufficiency and Acute Nephritis.—Henneton (*Le Nord médical*; through *La Tribune médicale*, October 16, 1909) has made a number of observations regarding the action of Adonis vernalis in the treatment of acute and chronic nephritis and cardiac troubles. He says that it is a cardiac tonic of the first order, and a diuretic through its action on the kidneys. It may be used in the treatment of all cardiac affections, but especially in asystole, when digitalis is contraindicated. Adonis vernalis is non-toxic and is not cumulative in its action, so it may be given to sustain the heart's action and to promote diuresis where digitalis and caffeine would not be tolerated. The diuretic action of the drug is exerted at its best in Bright's disease. It is best administered as an infusion of one drachm of the leaves in about six ounces of water.

Morphine to Relieve the Spasms of Whooping Cough.—According to Mouriquand (*La Clinique*, October 29, 1909) morphine is the best remedy to give in whooping cough or in the crisis of spasms or of the glottis. It is also effective in the spasms of croup and laryngismus stridulus given in enema. For one dose the following solution is prescribed:

R. Morphine hydrochloride, gr. $\frac{1}{2}$
Cherry laurel water, ℥ss
Water, q. s., ad. 3iiss.

M.

This is added to two or three ounces of lukewarm water and administered with an ordinary rectal syringe.

The Therapeutic Value of Calcium Chloride.—Carles (*Le Nord médical*, April 1, 1909; through *The British Medical Journal* for October 16, 1909) enumerates the various conditions under which calcium chloride may be beneficially administered. After its first employment, early in the nineteenth century, in cases of scrofula and phthisis, it fell into disuse for a time; but it has now been prescribed for some years in an increasing number of affections. Its hæmostatic properties have been useful in cases characterized by a diminution in the coagulability of the blood, such as chilblains, urticaria, acute oedema, certain forms of headache, serous eruptions, and nephritic disorders. When the blood contains too little lime it does not coagulate; the addition of a small quantity increases coagulability, but an excess renders it again incoagulable. Large doses, therefore, may be dangerous, while smaller ones are very useful. Carnot was one of the first to recognize its hæmostatic properties, and it is now employed daily in obstinate epistaxis, repeated hæmoptysis, purpura, bleeding piles, metrorrhagia, hæmophilia, and the like, where it acts by favoring the production of fibrin. In albuminuria it acts partly by virtue of its antihæmolytic properties, and partly by the direct influence which calcium salts exert on the kidney. A third use of the drug is as a moderator to the nervous system, for which reason it is employed in spasms of the glottis, laryngismus stridulus, convulsions and tetanus, and it has been found useful even in epilepsy. Lauder Brunton was the first who employed it as a cardiac tonic, and in the same way it proves useful in pneumonia. The dose is 15 grains to 1 drachm, given in milk, beer, syrup, or cordial, to disguise the rather disagreeable taste. It is contraindicated in old people, as it tends to favor calcification of the arteries, having a strong affinity for the blood vessels.

To Make a Strictly Milk Diet Tolerated.—Many patients are unable to tolerate a strict milk diet due in some cases to real intolerance and in others to prejudice which becomes an autosuggestion of a kind but which can be overcome by persuasion. In a recent lecture, Professor Robin (*Journal de médecine et de chirurgie pratique*; through *The Practitioner* for November, 1909) pointed out a method by which, with the help of certain drugs, it is possible to make this form of diet tolerable in the majority of cases. As suggestion takes the chief part in this method, it is impossible to be too careful in giving precise directions to the patient and to his *entourage*.

1. Between 7 o'clock in the morning and 10 o'clock at night, the patient should take, every three hours by sipping 300, 400, or 500 grammes (10, 15, or 17 ounces) of warm milk, not boiled (in order to preserve the action of the ferments), allowing half an hour for the absorption of each amount. This quantity is gradually to be increased to 600, 700, or even to 800 grammes (20, 23, or 26 ounces) for each dose until the amount taken during the day is 4 litres (1 gallon).

2. After taking each dose the patient must lie down on a couch with warm flannels to the pit of the stomach, remaining perfectly quiet for half an hour.

3. Before each dose of milk he should take, in a little water, three drops of one of the following mixtures, according to whether vomiting is present or not:—

a. If there is no vomiting:

B	Solanine,	gr. iss;
	Acid sulphuric dilute,	q. s. pro dissolv.
	Picrotoxine,	gr. ½.
	Morphine hydrochloride,	gr. ½.
	Cocaine hydrochloride,	gr. ¼.
	Atropine sulphate,	gr. ¼.
	Ergotine (Yvon),	gr. xx.
	Cherry laurel water,	3iij.

Misce. Fiat mistura.

This mixture requires filtering after mixing.

b. If vomiting is present:

B	Picrotoxine,	gr. j;
	Alcohol,	q. s. pro dissolv.
	Morphine hydrochloride,	gr. ½.
	Atropine sulphate,	gr. ¼.
	Ergotine (Yvon),	gr. xv.
	Cherry laurel water,	3iij.

Misce. Fiat mistura.

4. After each dose of milk the patient takes a tablespoonful of elixir of pepsin or 7½ grains of pepsin in a cachet.

5. After the first, third, and fifth doses of milk, one of these powders is to be taken, mixed in a little water:—

B	Calcined magnesia, }	āā 3ij;
	Sodium bicarbonate, }	
	Pulverized sugar, }	āā 3iij.
	Prepared chalk, }	

Misce. pro pulveribus xxiv.

6. In the case of flatulence and meteorism the patient takes with the second, fourth, and sixth doses of milk a tablespoonful of:—

B	Ammonium fluoride,	gr. iij;
	Distilled water,	5x.

Misce. Fiat mistura.

7. In the case of pain, cramp, a burning feeling, eructation, twitching, oppression, heartburn, or any painful sensation whatever affecting the stomach, one of the following powders, mixed in a little water, is to be given immediately:—

B	Calcined magnesia,	gr. xxii;
	Sodium bicarbonate,	gr. xv;
	White sugar,	gr. xxx;
	Codeine,	gr. 1/12;
	Precipitated chalk, }	āā gr. xij.
	Bismuth subnitrate, }	

Misce. pro pulvere i. Mitte tales numero x.

8. In the case of diarrhoea the patient should take after each dose of milk a cupful of infusion of twenty grains of wild strawberry roots. If this is not enough, a bolus of the following must be taken after each dose of milk:—

B	Dioscoreum,	āā 5j.
	Bismuth subnitrate, }	

Misce. pro pilulis xvj.

9. In the case of constipation the bowel should be washed out daily with plenty of warm boiled water. If this is not sufficient one to three of the following pills should be taken each night at bedtime:—

B	Aloes,	gr. j;
	Gamboge,	gr. ss.
	Extract of belladonna, }	āā gr. 1/12.
	Extract of hyoscyamus, }	
	Extract of licorice,	gr. ii.

Misce. pro pilula i. Mitte tales numero xx.

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PAPERS ON MEDICAL HISTORY.

The study of history is of value in pointing out the stages in the evolution of ideas which are so familiar that the superficial observer is prone to believe that they originated in their finished form. It is of value in pointing out the errors of our ancestors and in correcting our own. It produces distrust of authority, independence of view, and broadening of ideas. These results are to be obtained in the study of the history of a profession as well as in the study of a political doctrine, a military campaign, or the progress of a race.

The Johns Hopkins Hospital Historical Club is the foremost exponent of the value of the study of the history of medicine in this country. The contributions of William Osler to the proceedings of this club are well known, and it is pleasing to observe that with Osler's withdrawal from Baltimore interest in the Historical Club has continued. In the *Bulletin of the Johns Hopkins Hospital* for November there are two historical papers—one, The Two Sylvii; an Historical Study, by Frank Baker; the other, The Epidemic of the Indians of New England, 1616-1620, with Remarks on Native American Infections, by Herbert U. Williams.

In the first paper Dr. Baker reviews the life of Jacobus Sylvius Ambianus and the life of Franciscus de le Boë Sylvius. He points out some inaccuracies in the assumptions, which have passed through several encyclopædic articles and historical

dissertations, that Jacobus Sylvius discovered the fissure of Sylvius, the Sylvian artery (middle cerebral), the aqueduct of Sylvius, the Sylvian ventricle (fifth), the Sylvian valve (Eustachian valve of the heart), and the *caro quadrata Sylvii*, or *massa carnea Jacobi Sylvii* (flexor accessorius muscle of the foot), and that he introduced injection of the bloodvessels for purposes of anatomical study. He gives an interesting account of the quarrel between Sylvius and Vesalius, which evidently had its origin in the different viewpoint of the self made man and the scion of aristocracy; and he describes the origin and the fate of Franciscus Sylvius's "new idea in medicine."

Dr. Williams reviews the evidence that points to the existence of a decimating epidemic among the Indians of New England between the years 1616 and 1620. He shows that there was such an epidemic, though its nature and its source remain a mystery. In the course of the argument it is made apparent that a "remarkably small number of the great infectious maladies of the world" had their origin on the American continent.

THE CULTIVATION OF BACILLUS LEPRÆ.

The *Bacillus lepræ*, discovered in 1879, has never been cultivated on artificial media, unless the recent successful experiments by Clegg (*Philippine Journal of Science*, April) prove equally successful in other hands. Clegg began his experiments on the hypothesis that the *Bacillus lepræ* derived its nutrition from the products of the tissue cells in the lesions. He therefore endeavored to grow the bacillus in symbiosis with an organism which corresponded fairly well with living body cells, in that it was composed of a nucleus and cytoplasm. *Entanaba histolytica* was selected for this purpose. A special culture medium was prepared and sown with material containing amœbæ. After the amœbæ had developed to a sufficient extent to overbalance the original symbiotic bacteria sown with them, material containing leprosy bacilli ("a portion of the pulp of a leper's spleen") was added. At the end of six days examination of the growth showed a great number of lepra bacilli together with short, plump, acid fast bacilli, which occurred among the clumps of *Bacillus lepræ* and were closely associated with the amœbæ.

Transplantations were made from this culture to fresh plates containing amœbæ, which had about outgrown the original symbiotic bacteria. In two days the short, plump, acid fast bacilli had increased in number, indicating multiplication. Test examinations of amœba cultures not inoculated with this material failed to show acid fast bacilli.

A similar result was obtained in a second case of fatal leprosy. In this case, however, the matter was complicated by the fact that the patient had tuberculous cavities at the apices of both lungs.

The organism which Clegg succeeded in developing in his plates has a somewhat different morphology from that of the organisms found in leprous tissues and exudates. This may, however, be explained in the future, because so far we know nothing about this bacillus as it grows outside the human body.

Clegg adds as a supplementary note to his paper, which was read at the sixth annual meeting of the Philippine Islands Medical Association, that by using similar methods he has succeeded in obtaining a growth of acid fast organisms from leprous nodules from the ears of three living subjects. The organisms obtained from the two leprous spleens were being grown in the tenth subculture, and those from the ear nodules in the fifth subculture at the time the paper was published.

THE ABILITY TO REASON.

This is properly insisted upon as the most important element in teaching by Mr. Julian Chase Smallwood, in an article entitled *Present Methods of Education*, published in the November number of *Cassier's Magazine*, which is a magazine of engineering. Mr. Smallwood is a teacher of mechanical engineering in the University of Pennsylvania, but the generalities of the art of teaching engineering are the same as those of instruction in any other branch of learning, and the author's ideas are such as commend themselves to our understanding as eminently worthy of study by educators in medicine.

Pumping of knowledge of facts into a schoolboy, according to Mr. Smallwood, is only one of the methods of educating him, and by no means the most important one. The repetition of mental processes for the sake of practice, he says, is of greater moment, but it is insisted upon only by the most clear seeing educators. But the third of his three methods of education, that of training the student's ability to reason, is the vital element. It is largely for this reason, though Mr. Smallwood does not say so, that the study of Latin and Greek cannot be omitted from educational courses if the education is to result in the production of a man of due mental equipment. He says of this cultivation of the ability to reason,

The goal of the student to think independently and develop or create habits of mental investigation and analysis. It is astonishing to me that, with rare exceptions, our technical schools almost entirely disregard this branch in the ordinary courses of instruction. Perhaps the closest

approach to it is made in the laboratory courses in analytical chemistry; for such courses consist of a series of real problems, to solve which it is essentially necessary that the student use his reason. Moreover, he cannot let lack of confidence in his ability control his judgment to the same extent as in other studies, since he can have no foreknowledge of the answers.

The gift of an exceptional capacity for memorizing, says Mr. Smallwood, enables a few men to satisfy the examiners in a teaching institution, and such men are graduated and go forth into the world in a measure guaranteed as skilled in their profession, only to fail dismally when they are brought face to face with problems calling for something more than memory. How true this is of many a medical graduate! "An educational system which permits this," says Mr. Smallwood, "is at fault"; and we thoroughly agree with him. The grand object of education is, not to impart knowledge, but to teach the student how to study to the best advantage.

In conclusion, Mr. Smallwood makes a proposal which, as he himself says, may seem startling; but here, again, we think he is right. He strongly advocates "the universal removal of the ban on the use of textbooks in examinations." Of course he is not referring to "ponies" or "quiz compends," but to such books of reference as no man can be criticised for using in the actual practice of his profession. We all of us consult such books in regard to the problems that arise in our daily life. What objection is there, then, to resorting to them in the endeavor to solve the problems presented by a board of examiners? Why should we be deprived of a lexicon when we are required to make a translation from Greek or Latin? As well might a navigator be forbidden to use the *Nautical Almanac*.

THE NEW YORK NEUROLOGICAL INSTITUTE.

Some of us remember a hospital for nervous diseases which, thirty years ago or more, was established in New York under the influence of an impetus given to neurological study by the late Dr. William A. Hammond. If our memory serves us, it was situated in Second Avenue, in a region dignified by the Cooper Institute and the old building of the New York Historical Society. For reasons which it would be unprofitable to inquire into now, that hospital was discontinued after a comparatively brief career, and since then there has not been in New York an institution quite comparable to it, though there has not been such a dearth of teaching in neurology here as might be inferred from the lack of one. The deficiency has been felt, however, especially in the field of psychiatry.

We are glad to learn that a hospital, including a dispensary and a laboratory, is to be opened next week by the New York Neurological Institute, a corporation including among its trustees a number of prominent citizens and on its medical staff such well known neurologists as Dr. Joseph Collins, Dr. Joseph Fraenkel, Dr. Pearce Bailey, and Dr. Smith Ely Jelliffe. The building, which seems to be of ample size, is situated in East Sixty-seventh Street, near Lexington Avenue. We learn that it is thoroughly equipped with appliances for the use of hydrotherapeutic, electrical, and other special forms of treatment. An important feature of the proposed work of the institution is outlined in the following extract from the announcement: "Physicians are invited to send patients suffering from nervous, mental, and allied diseases to the dispensary for diagnosis and for treatment or for admission to the wards. Patients bringing letters from their physicians requesting diagnosis or suggestions in regard to treatment will be referred to their physicians." The implication is that they will be sent back to their own physicians, but with diagnostic and therapeutic suggestions, and it cannot be doubted that such a service will be of immense help to the general practitioner.

Formal courses of instruction in neurology are contemplated and particulars with regard to them are to be announced hereafter. Thus a need which has long been felt in New York will be met. We understand that the institute, though incorporated, is dependent on private contributions, like most of our general hospitals, and we hope that it will meet with substantial support, for it certainly bids fair to fill a gap in our ministrations to the afflicted and in our plan of medical education.

THE PSYCHOLOGY OF THE COOK-PEARY CONTROVERSY.

The expression of public sentiment encountered on every hand regarding the Cook-Peary controversy is not unique. Analogous discussions have disclosed a similar psychic condition at times throughout the world in the past. What the particular influence is that brings about this phase of mentality has not been discovered. That a wave of mental or psychic force sweeps over the world at certain periods in its history, however, must be conceded. It might be thought the result of sympathy brought about largely by criticism of one person of note by another of equal prominence, but this could hardly be so widespread or universal as to influence such large numbers in widely separated countries and of such divergent opinions in so short a time as has lately been manifest in the episode

under discussion. An influence more subtle and far reaching must account for the people taking such a position and to their own thinking such unquestionable attitudes in the world's affairs as is shown in the present controversy of "Did Dr. Cook reach the Pole?"

The daily press, with the aid of the telegraph, exerts a powerful influence in forming public opinion, but, powerful as it is, it could not so quickly and effectively mould that opinion without the public being in a receptive frame of mind and already mentally conditioned to adopt suggestions. In this case it would seem that the usual order of events was reversed, as the press has followed the public rather than taken the lead, and what were the factors in this hastily formed public opinion? Surely it was not due to a better acquaintance with one man than with the other. On the contrary, Mr. Peary has been in the public eye for years, while Dr. Cook was comparatively unknown. And it was not the result of personal contact with either, for both were a thousand miles or more away when the people of the civilized world arrived at a conclusion as to which was entitled to their confidence and allegiance. Was it that one man's poise, candor, and apparent honesty so impressed them that they declared their fealty? In other words, is the almost universal confidence confirmed in one by the lack of these elements in the other? There have been men in the history of the world who have commanded respect and confidence, while others equally brilliant have had the reputation of demagogues. Why?

It may be that there is a contagion of psychic phenomenon and, like epidemics of bodily disease, it may emanate from a single individual or focus. With no known means of staying it, it may sweep the world of intelligence. Insidiously, unknown to ourselves, we become infected, and, oblivious of the fact, spread the contagion to all with whom we come in contact. Witness the epidemics, epidemics, which made possible the Christian Era, Mohammedanism, the Crusades, the holy wars of history, the dancing mania, Christian Science, etc. Purely psychic contagion. History is but a repetition of events under the guise of another name; some elevating, others degrading, dependent upon the mental phase of human nature at the time of infection. While we would not dignify the Cook-Peary controversy as epoch making or as one calculated to influence the morals or well being of man, or award it a place in the important events of the world, still the very great and worldwide interest in the subject of whether one or either ever reached the North Pole, and the feeling engendered in the merits of the rival claimants, are of more than passing interest.

News Items.

The Hippocrates Medical Society, of Washington, D. C., held a meeting recently and elected the following officers for the ensuing year: President, Dr. Edgar Snowden; vice-president, Dr. Arthur L. Hunt; secretary and treasurer, Dr. Lawrence M. Hynson.

The Medical Society of the County of Wyoming, N. Y., met in annual session recently and elected the following officers for 1910: President, Dr. Z. G. Truesdell, of Warsaw; vice-president, Dr. F. S. Goodwin, of Perry; secretary and treasurer, Dr. L. H. Humphrey, of Silver Springs.

Dr. Theobald Honored.—In recognition of his services to the Baltimore Eye, Ear, and Throat Hospital, of which he was one of the founders, the surgical staff of that institution gave a dinner on November to Dr. Samuel Theobald at the University Club. A handsome loving cup was presented to Dr. Theobald.

Rochester Academy of Medicine.—Pregnancy as a Causal Factor in Enteropitosis was the subject of a paper read by Dr. Richard Moore at a meeting of the Section in Obstetrics, Gynecology and Pediatrics, held on Wednesday evening, November 24th. An interesting discussion followed.

The International Medical Congress.—At the meeting of this congress, held in Budapest recently, it was decided, upon motion of the chairman of the British committee, that the meetings should in future take place every four years. The next meeting of the congress will therefore be held in 1913. London was selected as the place of meeting.

The Society of Normal and Pathological Physiology, of Philadelphia, held a regular meeting on Monday evening, November 15th. The programme included the following papers: Leucocytes in Milk, by Dr. H. S. Campbell; Determination of Fat in Milk, by Mr. W. L. Croll; Artificial Parthenogenesis by the Use of Various Isotonic Salt Solutions, by Dr. R. S. Lillie.

Pasteur Institute at the University of Wisconsin Opened.—The new Pasteur institute that is to be conducted by the University of Wisconsin, at Madison, for the benefit of residents of the State, has been opened, and five patients from various parts of Wisconsin are receiving treatment at the institute. Dr. M. P. Ravenel is in charge of the institute.

Buffalo Academy of Medicine.—At a meeting of the Section in Obstetrics and Gynecology, held on Tuesday evening, November 23d, Dr. E. E. Montgomery, of Philadelphia, professor of gynecology at Jefferson Medical College, read a paper on the Significance and Treatment of Hemorrhage from the Genital Tract. The discussion was opened by Dr. Matthew D. Mann.

Medical Society of the State of New York.—The Committee on Scientific Work of the Medical Society of the State of New York announces that the programme for the annual meeting of the society, to be held in Albany on January 25th, 26th, and 27th, is now being prepared. Members who have papers to offer are requested to send titles as soon as possible to the chairman of the committee, Dr. Leo H. Neuman, 194 State Street, Albany, N. Y.

Protest Against Establishment of Tuberculosis Preventorium at Lakewood.—Prominent persons who own winter residences in Lakewood, N. J., joined with local business men at a mass meeting held on November 20th in protesting against the establishment of a tuberculosis preventorium for New York children on the estate surrounding the cottage occupied for a time by the late Grover Cleveland. Resolutions were passed declaring that the establishment of such an institution would hurt hotel interests and cause a depreciation in value of several large estates.

The Abuse of State Appropriations to Hospitals was discussed at a public meeting of the Philadelphia County Medical Society in Cadwalader Hall in the new building of the College of Physicians. The meeting was a most interesting one, as officials from almost every hospital in the city were present and participated in the discussions. Francis Fisher Kane, Esq., reviewed the subject from a legal standpoint, and Dr. John B. Roberts delivered an address in which he offered some suggestions in regard to improvements in the methods of State aid now in force. Among those who took part in the discussions were Dr. Leonard F. Fink, Dr. Frank De Witt, of South Bethlehem, and Dr. Henry W. Cattell.

Special Lectures at the Philadelphia College of Pharmacy.—The fourth lecture in the series was delivered on Friday evening, November 10th, by Dr. A. C. Abbott, director of the Laboratory of Hygiene of the University of Pennsylvania. His subject was The Typhoid Organism and its Relation to Public Health.

The New East New York Hospital.—Plans have been filed for the new \$350,000 Bradford Street Hospital, in the East New York section of Brooklyn. The hospital will cover the entire block of Dumont Street between Miller and Bradford Streets, and will have a capacity of one hundred beds. It will be five stories in height, with an extension of two stories. The structure will have a granite base and a red brick superstructure, trimmed with terracotta. There will be two large wards, six small wards, ten quiet rooms, two operating rooms, and an x-ray laboratory.

The Association of Surgeons of the Chicago, Burlington, and Quincy Railroad held its third annual convention in Kansas City, Mo., on October 15th. About fifty physicians were present, out of a total membership of two hundred. The following officers were elected for the ensuing year: Dr. B. B. Davis, of Omaha, president; Dr. C. E. Cook, of Illinois, Dr. J. M. Allen, of Missouri, and Dr. J. M. Freeman, Lead, S. D., vice-presidents; Dr. George F. Roehrig, of Denver, secretary, and Dr. J. P. Savage, of Sioux City, treasurer. The next annual meeting of the association will be held in St. Paul, Minn.

Society Meetings for the Coming Week:

WEDNESDAY, December 1st.—Society of Alumni of Bellevue Hospital; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

THURSDAY, December 2d.—New York Academy of Medicine; Dansville, N. Y., Medical Association.

FRIDAY, December 3d.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York.

Syracuse, N. Y., Academy of Medicine.—The following papers were read at a regular meeting of the academy held on Tuesday evening, November 23d: Report of a Case of Erythema Multiforme, by Dr. Joseph Wiseman; Fracture of the Elbow Joint in Children, by Dr. E. J. Wynkoop, illustrated with x-ray views by Dr. C. E. Coon; Tonsil as a Port of Entry for the Tubercle Bacillus, by Dr. T. H. Halsted; Tuberculosis of the Cervical Lymph Nodes, by Dr. Nathan Jacobson. The next meeting of the academy will be held on the evening of December 7th, when officers for 1910 will be nominated.

Thyroid Medication.—At the annual meeting of the Manhattan Medical Society, held on Thursday evening, November 26th, a "symposium" on thyroid medication was presented. Papers dealing with the subject were read as follows: Thyroid Therapy in General Practice, by Dr. Thomas F. Reilly; Thyroid Therapy in Obstetrical Practice, by Dr. Ross McPherson; Thyroid Therapy in Dermatology, by Dr. George M. MacKee; Thyroid Therapy in Pediatrics, by Dr. L. Bertram Sachs; Thyroid Therapy in Neurology, by Dr. William N. Leszynsky; Untoward Effects of Thyroid Medication and How to Forego Them, by Dr. Heinrich Stern.

A "Symposium" on Pellagra will be presented at the New York Academy of Medicine at a stated meeting to be held on Thursday evening, December 16th. Dr. J. J. Watson, of Columbia, S. C., and Dr. J. W. Babcock, superintendent of the South Carolina State Hospital for the Insane, will be present and will read papers on the subject. At a stated meeting of the Academy, to be held on Thursday evening, December 2d, the topic for discussion will be diseases of the colon. Dr. Edward Martin, professor of surgery in the University of Pennsylvania, will deal with the subject from the surgical standpoint, and Dr. Leonard Weber, of New York, will deal with it from the medical standpoint.

Delegates to the International Sanitary Convention.—The following named persons have been appointed by the Treasury Department as delegates to the Fourth International Sanitary Convention, to be held in San José, Costa Rica, from December 25, 1909, to January 2, 1910: Surgeon General Walter Wyman and Passed Assistant Surgeon J. W. Ames, of the Public Health and Marine Hospital Service; Dr. H. M. Bracken, secretary of the State Board of Health of Minnesota; Dr. A. H. Doty, quarantine officers of the Port of New York; and Dr. Rhett Goods, a member of the International Sanitary Bureau at Washington.

Scientific Society Meetings in Philadelphia for the**Week Ending December 4, 1909:**

WEDNESDAY, December 1st.—College of Physicians.

THURSDAY, December 2d.—Obstetrical Society, Germantown Branch, Philadelphia County Medical Society; Southwark Medical Society; Section Meeting, Franklin Institute; Delaware Valley Ornithologists' Club.

FRIDAY, December 3d.—American Philosophical Society; Kensington Branch, Philadelphia County Medical Society.

Buffalo Academy of Medicine.—A stated meeting of the Section in Medicine was held on Tuesday evening, November 9th. Dr. Arthur W. Hurd read a paper on the Early Treatment of the Insane and Proposed New Legislation. Dr. James W. Putnam read a paper on Psychopathic Hospitals. The discussion was opened by Dr. D. H. Arthur, superintendent of Gowanda State Hospital. The next stated meeting of the academy will be held on December 28th, under the auspices of the Section in Obstetrics and Gynecology. The principal feature of the programme will be a paper on the Aftermath of Childbirth, by Dr. W. P. Manton, of Detroit.

National Department of Public Health.—A report on the plan of establishing a federal department of health has been submitted to President Taft by Surgeon General Walter Wyman, of the United States Public Health and Marine Hospital Service. Such a department is recommended in the platforms of both Republican and Democratic parties, but it is hardly expected that any action will be taken at the present session of Congress. The establishment of such a bureau would be for the purpose of unifying sanitary regulations, supervising the purity of rivers and harbors, and for the education of the public in matters of hygiene and public health.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 20, 1909:

	November 13—		November 20—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	538	179	528	181
Diphtheria	324	38	184	32
Measles	197	3	301	8
Scarlet fever	191	15	232	14
Smallpox	1	1	1	1
Varicella	139	1	145	1
Typhoid fever	59	19	72	10
Whooping cough	28	3	57	3
Cerebrospinal meningitis	5	4	4	4
Total	1,473	261	1,697	258

Personal.—Dr. Fred Smith, of Brooklyn, has resigned his position as deputy superintendent of the Kings County Hospital, and will engage in private practice.

Dr. Rufus B. Weaver, professor of regional and applied anatomy in the Hahnemann Medical College, of Philadelphia, has been made an honorary fellow of the Philadelphia Academy of Medicine.

Dr. E. W. Barton, of Akron, Ohio; Dr. H. R. Johnson, of Fairmont, West Va.; Dr. G. Victor Janvier, of Lansdowne, Pa.; Dr. Ed. L. Miller, of Johnstown, Pa.; Dr. John G. A. Barker, of Johnstown, Pa.; and Dr. W. D. Wise, of Akron, Ohio, are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. W. F. Buettler, of Milwaukee, was reelected superintendent of the County Asylum for the Insane on November 3d, for the fourteenth time.

The Medical Association of the Southwest.—This organization, whose membership is limited to the members of constituent State associations of Missouri, Arkansas, Texas, Kansas, and Oklahoma, met in annual session recently at San Antonio, Texas. Officers for the ensuing year were elected as follows: Dr. G. H. Howard, of San Antonio, Tex., president; Dr. Howard Hill, of Kansas City, Mo., first vice-president; Dr. C. E. Bowers, of Wichita, Kans., second vice-president; Dr. D. A. Meyers, of Lawton, Okla., third vice-president; Dr. A. J. Vance, of Oklahoma City, fourth vice-president; Dr. F. H. Clark, of El Reno, Okla., secretary and treasurer, reelected; executive committee, Dr. S. Grove Burnet, of Kansas City, Mo.; Dr. J. S. G. Sell, of Wichita, Kan.; Dr. E. S. Lane, of Oklahoma City; Dr. J. A. Foltz, of Fort Smith, Ark.; Dr. E. H. Cary, of Dallas; Dr. C. E. Bowers, of Wichita, Kans., chairman of committee on arrangements. The next meeting of the association will be held in Wichita, Kans., in October, 1910.

Medical Students at Italian Universities.—According to a statement which appeared in the *British Medical Journal*, the total number of students registered in the faculties of medicine of the universities of Italy during the academic year 1908-9 was 4,837. These were distributed as follows: Naples, 1,437; Rome, 454; Turin, 381; Bologna, 307; Pavia, 290; Padua, 220; Palermo, 200; Genoa, 172; Florence, 155; Catania, 151; Pisa, 146; Modena, 125; Parma, 110; Messina, 85; Cagliari, 52; Siena, 50; Sassari, 42.

The Health of Pittsburgh.—During the week ending October 30, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 17 cases, 0 deaths; typhoid fever, 12 cases, 6 deaths; scarlet fever, 33 cases, 1 death; diphtheria, 19 cases, 4 deaths; measles, 13 cases, 0 deaths; whooping cough, 4 cases, 1 death; pulmonary tuberculosis, 35 cases, 10 deaths. The total deaths for the week numbered 182, in an estimated population of 572,000, corresponding to an annual death rate of 16.54 in a thousand of population.

Special Lectures on Chemistry at the Medico-Chirurgical College of Philadelphia.—The first lecture in the series of special lectures on practical chemistry arranged by the Department of Pharmaceutical Chemistry of the Medico-Chirurgical College, of Philadelphia, for 1909-1910, was delivered on Thursday evening, November 18th, by Dr. A. Parker Hitchens, an industrial research bacteriologist, of Philadelphia, his subject being Applied Bacteriology. The next lecture in the course will be delivered by Clement S. Brinton, of the United States Bureau of Chemistry, Washington, D. C. The subject will be A Review of Recent Work under the National Food and Drugs Act of June 30, 1906. Dr. William P. Wilson, Sc. D., director of the Philadelphia Museums, will deliver the third lecture on the evening of December 16th, his subject being Some Interesting Chemicals, Drugs and Medicines used in Various Countries, Especially in China, with a brief description of a Chinese Pharmacy in Canton. These lectures are free to all who are interested.

The Health of Chicago.—During the week ending November 13, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 165 cases, 14 deaths; scarlet fever, 183 cases, 15 deaths; measles, 121 cases, 1 death; whooping cough, 23 cases, 2 deaths; typhoid fever, 25 cases, 6 deaths; chickenpox, 72 cases, 0 deaths; smallpox, 1 case, 0 deaths; pneumonia, 26 cases, 104 deaths; tuberculosis, 91 cases, 65 deaths. Sixty-four cases of minor contagious diseases were also reported. The deaths from other important causes were: Influenza, 3 deaths; cancer, 36 deaths; nervous diseases, 18 deaths; heart diseases, 51 deaths; apoplexy, 15 deaths; Bright's disease, 38 deaths; diarrhoeal diseases, under two years of age, 39 deaths; diarrhoeal diseases over two years of age, 3 deaths. There were 7 suicides, 39 deaths due to accidents, and 6 deaths from manslaughter, making a total of 52 deaths by violence. The total number of deaths during the week was 594, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.02 in a thousand of population. The infant mortality was 156; 98 under one year of age, and 58 between one and five years of age.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending November 13, 1909, there were 1,389 deaths from all causes reported to the department, 92 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.87 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.64; the Bronx, 17.09; Brooklyn, 15.49; Queens, 13.10; and Richmond, 18.06. The total infant mortality was 360; 243 under one year of age, 59 between one and two years of age, and 58 between two and five years of age. Of the total number of deaths of children under five years of age, 46 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 75; pulmonary tuberculosis, 179; diarrhoeal diseases, over five years of age, 55; organic heart diseases, 141; Bright's disease, 97; cancer, 74; pneumonia, 91; bronchopneumonia, 81. There were 14 suicides, 84 deaths due to accidents, and 3 deaths from homicide, making a total of 101 deaths by violence. There were 132 stillbirths. One thousand two hundred and forty-two marriages and 2,290 births were reported during the week.

American Urological Association.—The New York branch of this association held a stated meeting on Wednesday evening, November 24th. Dr. James A. Gardner, of Buffalo, reported a case of acute fulminating gangrene of the penis and scrotum with known port of entry. Dr. Eugene Fuller, president of the American Urological Association, read a paper entitled *Is the Demonstration of the Gonococcus as Simple a Matter as is Commonly Supposed?* Acute Nephritides due to Systemic Infection was the subject of a paper read by Dr. Heinrich Stern, which was followed by an interesting discussion. Dr. Thomas R. Pooley speaking of some of the ocular manifestations of urological infections. Among others who participated in the discussion were Dr. Louis Heitzmann, Dr. Winfield Ayres, Dr. G. K. Swinburne, Dr. Joseph B. Bissell, Dr. Terry M. Townsend, and Dr. G. A. De Santos Saxe. The next meeting of the society will be on January 26, 1910. The topic chosen for discussion at this meeting is *Obstructions of the Urinary Tract*.

The Harvey Society Lectures.—The Harvey Society, of New York, has issued an announcement of its fifth course of lectures, to be given during the season of 1909-1910, on Saturday evenings, at 8:30 o'clock, at the New York Academy of Medicine. The first lecture in the series was delivered on the evening of October 30th by Professor Richard M. Pearce, of the University and Bellevue Hospital Medical College, on the *Problems of Experimental Nephritis*. The remaining lectures in the course are as follows: December 4th, Professor Otto Connheim, of the University of Heidelberg, on the *Influence of Sensory Impressions on Scientific Deductions*; December 11th, Professor T. G. Brodie, of the University of Toronto, on *Renal Activity*; December 18th, Professor Carl Huber, of the University of Michigan, on *Renal Structure*; January 15th, Professor Ludwig Hektoen, of the University of Chicago, on *Certain Phases of the Formation of Antibodies*; February 19th, Dr. Eugene L. Cope, of the Rockefeller Institute for Medical Research, on *Inflammation*; March 5th, Professor Adolf Meyer, of Johns Hopkins University, on the *Present Status of Aphasia and its Relation to Psychopathology*; March 19th, Professor A. Magnus-Levy, of the University of Berlin, on *Pathology and Therapy in Diseases of Metabolism*. Professor Jules Bordet, of the Pasteur Institute of Brussels, is expected to deliver a lecture before the society in April. The subject and the exact date will be announced later.

The Southern Medical Association held its third annual convention in New Orleans, La., on November 9th, 10th, and 11th. About five hundred physicians from the Southeast were in attendance, and the meeting was in every way a great success. One of the most interesting features of the programme was a "symposium" on pellagra, which was presented on Wednesday afternoon, and on Thursday morning a clinic on pellagra was held at the Charity Hospital by Dr. George Dock and Dr. C. C. Bass. The programme was divided into three sections, namely, surgery, medicine, and ophthalmology, and the papers presented at the meetings of these sections were of an unusually high order. Resolutions were adopted endorsing the proposition that a federal health department be established. The society also went on record as favoring the acceptance of Mr. John D. Rockefeller's gift for a campaign against hookworm disease, and resolutions thanking Mr. Rockefeller for his gift will be sent to him. A recommendation of the council that the official organ of the association should suspend publication after December 1st was also adopted. Officers for the year 1910 were elected as follows: President, Dr. W. W. Crawford, of Hattiesburg, Miss.; vice-presidents, Dr. J. F. McIntyre, of Florida, Dr. W. S. Leathers, of Mississippi, Dr. I. R. Snyder, of Alabama, Dr. H. L. Harris, of Georgia, Dr. George Dock, of Louisiana, and Dr. Frank Jones, of Tennessee; secretary and treasurer, Dr. Oscar Dowling, of Shreveport, La., reelected unanimously. The Section in Medicine elected Dr. George Dock, of New Orleans, chairman, and reelected Dr. H. Eugene Mitchell, of Birmingham, secretary. Dr. U. S. Bird was elected chairman of the Section in Ophthalmology, and Dr. E. C. Elliot was elected secretary. The Section in Surgery elected Dr. E. Denegre Martin, of New Orleans, chairman, and reelected Dr. Jere L. Crook, of Jackson, Tenn., secretary. The next convention of the association will be held in Nashville, Tennessee, in November, 1910.

Charitable Bequests.—The will of Mrs. Isabella Arnold, late of Pittsburgh, Pa., provides that her entire estate, with the exception of a few minor bequests to relatives, shall be divided among charitable institutions and church organizations, upon the death of her husband, who is to have the income from her entire estate during his life. The bequests to charitable institutions are as follows: The Presbyterian Hospital, of Pittsburgh, \$5,000; St. John's General Hospital, \$5,000; Western Pennsylvania Institution for the Blind, Pittsburgh, \$5,000; Lepers' Mission, \$10,000; the United Presbyterian Women's Association of North America, \$10,000 in trust for the Home for Aged People, Wilkensburg, and \$10,000 in trust for the Orphans' Home, Pittsburgh.

By the will of Annie Farley, the Woman's Hospital, of Philadelphia, will receive \$9,000 for the endowment of a free bed for trained nurses at the hospital.

The will of Emanuel Einstein, who died recently in Pompton, N. J., contained the following bequests: \$10,000 to the Home for Aged and Infirm Hebrews, New York; \$10,000 to the United Hebrew Charities, New York; \$5,000 to the Montefiore Home for Chronic Invalids, New York; \$10,000 to the Mount Sinai Hospital, New York, and \$5,000 to the Educational Alliance of New York.

University of Pennsylvania Alumni Smoker.—The Philadelphia alumni of the Medical Department of the University of Pennsylvania held their quarterly smoker in the banquetting hall of the Bourse on Saturday evening, November 20th. A unique feature of the decorations of the hall was an exhibition of about twenty models of aeroplanes suspended from the ceiling, and several small flying machines fastened to the chandeliers. The various models were described by Mr. J. C. Storrs, of New York, and Mr. Wilbur R. Kimball, secretary of the Aeronautic Society of New York, delivered an illustrated lecture, in which he described all the types of aeroplanes yet devised. Dr. Richard J. Norris, president of the Alumni Society, presided. One of the alumni present was Dr. Henry E. Wetherell, who is organizing an expedition to go in search of the South Pole. Among the Philadelphia physicians who were present were: Dr. De Forrest Willard, Dr. Roland G. Curtin, Dr. George E. Shoemaker, Dr. E. M. K. Schwenk, Dr. Joseph C. Egbert, Dr. William T. Taylor, Dr. McCluney Radcliffe, Dr. F. Franklin Stahl, Dr. Herbert Carpenter, Dr. William T. Shoemaker, Dr. James B. Walker, Dr. George M. Boyd, Dr. J. William Pancoast, Dr. Samuel D. Risley, Dr. Edward Watson, Dr. Harry D. Jump, Dr. William S. Wadsworth, Dr. Richard Cleeman, Dr. Rae S. Dorsett, Dr. Wendell Reber, Dr. Howard S. Anders, Dr. Horatio C. Wood, Jr., Dr. George B. Wood, Dr. William McKeage, Dr. William G. Morton, and Dr. Luther C. Peter.

United Hebrew Charities.—At the annual meeting of this organization, held on Tuesday evening, November 23d, it was announced that the organization had in the last year weathered the severest period of stress in the thirty-five years of its existence, expending a larger amount than in the panic year of 1907, and on a smaller number of applicants. More than \$360,000 was obtained in contributions, and the organization was able to meet the needs coming before it. It obtained also \$91,000 of the extra \$100,000 emergency fund which it was found necessary to call for a year ago, when the organization was obliged through lack of funds to close its doors. Of this additional sum \$15,339 was furnished by contributions of gas rebates. One of the smaller sources from which the funds were collected, was from Jewish employees of Jewish commercial and industrial houses, who furnished \$830, in contributions of from 2 to 5 cents from each employee. Although the number of cases dealt with was smaller than in the preceding year, the total expenditures were greater. There were 10,296 cases applying for relief, representing 45,374 individuals, as against 50,295 in 1907. Of these 5,700 received cash relief, as compared with 5,745 in 1907. Of the applicants 3,502 came because of illness, 2,600 through lack of work, and 1,802 through lack of male support. The increased expenditures were made necessary by the weakened physical condition of the poor after the panic, 1,000 additional cases of sickness having been dealt with this year at a cost of \$127,000 as against \$87,000 in 1907. Of the total expenditures only 13 per cent, was due to administrative expense of the organization itself.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 11, 1909.

1. Report of an Epidemic of Bacillary Dysentery at the Danvers State Hospital, Massachusetts, in 1908:
 - (a) Statistical Report of the Dysentery Epidemic at Danvers Hospital in 1908. By C. T. RYDER.
 - (b) Investigation of the Possible and Probable Sources of Infection and of the Causes of Spread of Dysentery in Danvers Hospital. By C. T. RYDER.
 - (c) Identification of Epidemic Dysentery in Danvers Hospital as Due Mainly to *Bacillus Dysenteriae* (Shiga Type). By E. T. F. RICHARDS, ANNA H. PEABODY, and MYRTLE M. CANAVAN.
 - (d) A Study of Agglutinations in Danvers Dysentery Cases: Comparative and Serial Tests with the Shiga and Flexner-Harris Strains of *Bacillus Dysenteriae*. By E. T. F. RICHARDS.
 - (e) The Blood Cell Picture in Bacillary Dysentery. By MYRTLE M. CANAVAN.
 - (f) The Lesions of Bacillary Dysentery. By E. E. SOUTHARD and E. T. F. RICHARDS.
 - (g) The Nervous System in Bacillary Dysentery. By E. E. SOUTHARD and C. G. MCGAFFIN.
 - (h) Ulcerative Vaginitis in a Case of Bacillary Dysentery. By MYRTLE M. CANAVAN.
 - (i) The Occurrence of Dysentery in Hospitals and in the Community at Large, with a Summary of the Prophylactic Measures which should be Employed to Check the Disease. By C. T. RYDER.
 - (k) Conclusions from Work on the Danvers Dysentery Epidemic of 1908. By E. E. SOUTHARD.
2. Vaccine Treatment of Lobar Pneumonia. By TIMOTHY LEARY.
3. The Immediate Results and Surgical Complications of Gastroenterostomy. By FRED T. MURPHY.
4. The Physiological Aspects of Gastroenterostomy. By W. B. CANNON.

1. Report of an Epidemic of Bacillary Dysentery at the Danvers State Hospital, in 1908.—This is a very interesting report. Ryder, in his statistical summary, shows that the first case occurred in a ward of the female side, and this ward suffered continuously and severely throughout the epidemic. Wards situated near to this one did not become infected any sooner or any more severely than wards remote from it. There is but little communication between adjacent wards. The second case occurred in a ward of the male side, more than half the length of the hospital from the first ward of the female side, three days after the onset of the first case. The spread was gradual and scattering; not "explosive," not progressive from ward to adjoining ward. Ultimately all departments of the hospital were involved, with the sole exception of the female parole ward, which had but seventeen patients, and all classes of the hospital population, sane and insane, were represented. There were about 600 male patients, with seventy-one cases, twenty deaths, 11.8 per cent. morbidity, and 28.2 per cent. mortality, while the number of female patients was about 800, seventy-three cases, sixteen deaths, 9.1 per cent. morbidity, 21.0 per cent. mortality. Of twelve physicians, two became sick, 16.6 per cent. morbidity; of twenty-five nurses six were sick, 8.0 per cent. morbidity; of sixty-five attendants five were sick, 1.5 per cent. morbidity; of 135 servants three were attacked, 2.2 per cent. morbidity. The general morbidity was 9.8 per cent., the general mortality 23.1 per cent. Five definite relapses occurred. Ryder, in the second article, speaks of the

probable and possible sources of the infection.—Richards, Peabody, and Canavan found that the epidemic dysentery was mainly due to the *Bacillus dysenteriae* (Shiga type). They confirm previous work on the relation of *Bacillus dysenteriae* to epidemic asylum dysentery (fourteen of seventeen stools examined positive). But, contrary to the experience of most previous investigators of asylum dysentery, they find that the prevailing organism of the Danvers dysentery is the original or Shiga type of *Bacillus dysenteriae*. (Fisher, at Middletown, never obtained the original Shiga type.) They obtained the Shiga type from one autopsy in acute dysentery. Two acute and two healing cases yielded no *Bacillus dysenteriae*. The blood and the cerebrospinal fluid (three trials each) yielded no *Bacillus dysenteriae*. Contrary to the recommendations of most workers, they advocate the use of a slightly alkaline agar medium in preference to an acid medium in preparation of microscopical slides. In the determination of *Bacillus dysenteriae*, they think that the agglutination of the organism by high dilutions of antidyenteric horse serum (such as 1:1,000), as a single test, is equal or superior to the litmus milk reaction. In the comparative and serial tests with the Shiga and Flexner-Harris strains of *Bacillus dysenteriae* the three authors tested one hundred and fifteen cases. Eighty-one per cent. of these sera gave positive agglutination reactions, in the sense that they reacted with Shiga (thirty-two cases), with Flexner-Harris (thirty-seven cases), or with both (twenty-four cases). Nineteen per cent. (twenty-two cases) were negative. Ten control sera, from persons without obtainable history of dysentery, proved negative, except in one instance (positive with the Flexner-Harris type, 1/80). A positive reaction was obtained in one case of four tested on the first day of symptoms, in 52.6 per cent. of all cases (nineteen) tested during the first week, and in 92.3 per cent. of cases (thirteen) tested during the second week. The cases (nineteen) tested during the third and fourth weeks after onset were all positive to Shiga, Flexner-Harris, or both. The percentages of positive reactions during subsequent weeks declined somewhat gradually.—Of the blood cell picture Canavan states that it was found that all cases presented an initial increase of the white blood corpuscles, which fell to the normal limits on the fifth day and did not rise again. The proportion of the lymphocytes was slightly higher than normal and did not at once drop with the decrease in the total number of the white corpuscles on the fifth day, but gradually returned to normal by the tenth day. The injection of antidyenteric serum in doses of from 10 to 40 c.c. did not in any way directly affect the counts. In one of the thirty-four cases treated with serum an antitoxine rash developed and with it an increase of the white blood corpuscles of the polynuclear variety.—In the article on Lesions of Bacillary Dysentery, Southard and Richards say that death may occur in the absence of heart and kidney lesions, providing there is another coexistent acute disease. Varying degrees of chronic nephritis were detected; three cases showed acute nephritis with fatty changes. It seems hardly possible to exclude either the lesions of the heart and vessels or those of the kidney from the factors

which lead to death in dysentery. The liver failed to show constant lesions. As to the effect upon the gallbladder, cholelithiasis occurred in eight of fourteen cases. The lungs showed well marked bronchopneumonia in the gross in five cases, while the spleen showed gross chronic interstitial change in six cases, and amyloid degeneration in one. The intestinal lesions are the most obvious in the disease and have received the most study, although no intestinal lesions of consequence are found in some cases of clinically certain dysentery. The works of Flexner, Howland, Shiga, and others are reviewed, and the conclusion is reached that the clinical data as well as the anatomical findings do not point unequivocally to the essential lesions of dysentery, and there is even some doubt whether the intestinal ulcerations are constant, and whether, when they occur, they are due to the bacillus of dysentery. Ulceration was found from the seventh day after onset through the sixteenth, and, in a slight or healing form, in the cases lasting thirty-three and thirty-five days respectively. But only two of the seven patients dying from six to eight days after onset showed ulcers (one of seven and one of eight days' duration). In one case of sixteen days' duration and in one case of twenty-one days' duration ulcers did not show. From these data it is concluded that about a week is necessary for frank ulcer production, that the ulceration is fast declining at the end of five weeks, and that fatal issue may be protracted to three weeks in cases without frank ulceration.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 20, 1906.

1. Use of Digestive Ferments in Medicine.
By CHARLES G. STOCKTON.
2. Removal of Tumors of the Pituitary Body by an Infranasal Route; A Proposed Operation with a Description of the Technique, By ALLEN B. KANAVAL.
3. Cystocele: A Radical Cure by Suturing Lateral Sulci of Vagina to White Line of Pelvic Fascia.
By GEORGE R. WHITE.
4. Macroscopic and Microscopic Appearance of Stomach Contents,
By J. W. WEINSTEIN.
5. The Work of a Cooperative Hydrotherapeutic Establishment,
By JOSEPH H. PRATT.
6. History of Two Cases of Congenital Pyloric Spasms with Remarks on the Etiology and Treatment,
By D. J. MILTON MILLER.
7. An Investigation into the Conditions Surrounding the Child in School,
By J. W. VAN DERSLICE.
8. The School Child's Breakfast, By W. C. HOLLOPETER.
9. Final Word on the Stern Pessary for Amenorrhoea, Dysmenorrhoea, Sterility, etc., By J. H. CARSTENS.
10. Opacities of the Cornea; Their Frequency in Childhood from Preventable Causes and Their Effect on Vision,
By COLMAN W. CUTLER.

1. **The Use of Digestive Ferments in Medicine.**—Stockton remarks that the question of the administration of digestive ferments in medicine is complicated and is rendered the more uncertain by lack of precise knowledge as to what becomes of them in the digestive canal. In our present state of knowledge, or rather lack of knowledge, it behooves us to be modest in claiming either good effects or no effects from the administration of these ferments. There can be no question that a large number of preparations which have been placed on the market are practically inert. Many combinations that are widely advertised, and presumably largely prescribed, are self destructive,

provided they are made as represented. That is to say, the various elixirs, etc., said to contain pepsin, pancreatin, hydrochloric acid, lactic acid, vegetable diastase, etc., are not only unphysiological in theory, but have been shown to be practically worthless so far as digestive activity is concerned.

2. **Pituitary Tumors.**—Kanaavel proposes the infranasal route in contradistinction to the supranasal route for reaching the tumors of the pituitary body. The technique in general consists in elevating the nose, cutting the cartilaginous septum, removing the middle turbinates, deflecting the septum, locating the sphenoidal foramina, biting off the intervening attachment of the perpendicular plate of the ethmoid and vomer, entering the sphenoid cells, and thus reaching the floor of the sella turcica.

4. **Stomach Contents.**—Weinstein speaks of the normal, physiological, and of the pathological stomach contents. A normal test breakfast, when extracted three-quarters to one hour after it is eaten, gives a uniform white, milky emulsion, almost odorless, which on standing will separate into two equal layers, the bread, consisting of very tiny particles, being at the bottom and the rather turbid liquid at the top. The contents go rapidly through a filter. The most satisfactory way to examine the contents microscopically is to use a solution of iodine and potassium iodide, consisting of potassium iodide, 0.1; resublimed iodine, 0.05; distilled water, 100. This stains all the starch, but not the bacteria. The contents will show a large number of granules of varying size. Besides the starch granules a few yeast cells will be encountered, which very closely resemble the red blood cells, but are oval, rarely round, and appear mostly in pairs. Red blood cells are generally rare. By washing a fasting stomach we get off a good many exfoliated epithelia, bacteria, and mucus. In excessive acidity the contents rush out as soon as the tube passes the cardia, it is in a profuse, watery condition with very solid matter and with a markedly acid odor. Microscopical examination shows starch granules of large size, abundant yeast cells, and a good many bacteria. Weinstein does not believe that the bactericidal power of the stomach lies in the action of the hydrochloric acid but in its motility. The washings from an empty stomach present microscopically the same appearance as of the normal stomach. Gastric fermentation is itself no distinct disease. The contents separate into three layers, a layer of food at the bottom, a layer of turbid liquid in the centre, and a third layer on top. This layer consists of thin fermented particles of food permeated by gases which float them to the top, mixed with some mucus and also fat. The most frequent occurrence of stomach contents of such a character is in cases of motor insufficiency due to obstruction, mostly benign, and at times malignant, and also in cases of atony of the stomach. It is often encountered in cases of excessive acidity, this probably being due to some fermentation within the stomach, owing to its retarded digestion of starches occasioned by the excessive acidity, since the ferment of the saliva—the ptyalin—works only in a neutral, faintly alkaline, or faintly acid medium. In gastric ulcer the stomach contents may contain fresh blood, a phenomenon, however, which is seldom met. More often the contents have the appearance denoted by the classical

name "coffee grounds." In interpreting its meaning we must often use a chemical test. Black stools should be rather looked for than blood. In motor insufficiency the stomach contents usually have a gray, dirty look. A lot of fat globules float on the surface. Elements of food not included in the test meals are often recognized; especially skins of fruits are left behind and are easily recognized. The mixture emits a strong, rancid, butyric acid odor. It separates readily into three layers, solids at bottom and top with liquid in the centre. Microscopically we find starch granules stained blue by the iodine solution; muscle fibres (if the patient eats meat); fat globules in large numbers. The fat globules vary a good deal in size and appearance. There are large numbers of them as small as a red cell or a yeast cell and even smaller, and some very large ones. The small ones resemble red cells or yeast cells very much, and the only way to recognize them is, first, that the fat globules do not stain with the iodine solution, while the red and yeast cells do stain a light yellow color, and, second, that we find a large number of other globules of the same character, but of larger and manifold shapes. Another element encountered in motor insufficiency consists of the sarcinae ventriculi. They look like bales of hay and are found in two forms, a larger and a smaller one. They are mostly met in motor insufficiency of benign origin, and are never seen in cancer. In chronic gastritis the macroscopical appearance of the stomach contents is diagnostic. They are very thick, very scanty, and contain a lot of mucus. In advanced cases the contents are so thick and tenacious that they represent one mass of mucus. It is the most difficult thing to fish this mucus out of the stomach. The microscopical examination is also distinctive, the contents are full of mucus, which under the microscope is recognized as dark, stringy masses, holding entangled in their meshes large numbers of epithelial cells and mainly round cells resembling leucocytes. Large numbers of epithelial cells are seen and microorganisms. It is this picture of the mucus with the large number of round and epithelial cells that make up the pathognomonic picture of chronic gastritis, and there is only one stomach disease that may resemble it, namely, carcinoma of the stomach. In carcinoma of the stomach the contents are thick, very little gastric juice as a rule. At times there is some juice, but the bread in it looks just as if it were soaked in it. Large undigested particles of food, chiefly meat, if the patient has no aversion to it, are found in the stomach contents. Very often we get coffee grounds with it, when the carcinoma ulcerates and small hæmorrhages take place. The contents look at times not unlike fæces, coming out through the stomach tube like molds in large quantities. An appearance like this latter is pathognomonic of cancer. It is met in those cases in which the carcinoma invades both the pylorus and the stomach wall. Carcinoma contents look very much at times like those of chronic gastritis, but in the latter there is a good deal of mucus, while in carcinoma mucus is rather uncommon. The odor is offensive. Microscopically the *Boas bacillus* is found in nearly all the cases. Nervous dyspepsia and other gastric neuroses give the picture of a normal stomach.

MEDICAL RECORD

November 20, 1909.

1. Some Aspects of Rocky Mountain Spotted Fever as Shown by Recent Investigations, By H. T. RICKETTS.
2. Creosote Treatment of Pulmonary Tuberculosis, By BEVERLEY ROBINSON.
3. A Plea for a Reform in Medical Education, By EDMOND SOUCHON.
4. A Case of Idiopathic Hydropneumothorax, with Complete Recovery, By A. P. FRANCINE and H. R. M. LANDIS.
5. A Fragmented Filiform Removed from the Male Urethra without Open Operation, By VICTOR COX PEDERSON.
6. Preliminary Report of a Statistical Analysis of Over Sixty-eight Thousand Cases of Typhoid Fever, By ABDULLAH K. SALLOM.
7. Acute Gangrenous Cholecystitis; Gallstone in the Cystic Duct; Perforations of the Gallbladder, By ESY WILLIAMS.

1. **Rocky Mountain Spotted Fever.**—Ricketts remarks that the tick plays only a partial rôle in the maintenance of virulence of rocky mountain spotted fever. The disease appears to be maintained in nature by alternating between the tick and some one or more of the native small animals. In the past various local theories have prevailed, and do still prevail to a certain extent, regarding the source of infection for man. The sharp limitation of spotted fever to the months of spring, suggested to the residents and to many of the physicians that the virus may be obtained from the water which flows down from the mountains during the melting of the snow. It was assumed that this resulted in the flushing out of certain low places which contained decaying vegetation, in which the virus or poison might breed or have its source. In the Bitter Root valley, in Montana, so many of the patients were employees of sawmills, or lived in the vicinity of such mills, that the disease also became associated with this industry. Old and decaying accumulations of sawdust were supposed to contaminate the water, and many patients give a history of having drunk water from a stream on which a sawmill previously had its site. It is pointed out that there was virtually no spotted fever until the lumbering industry entered the valley. In spite of a fair degree of plausibility which attached to the water theory, careful examination of the distribution of cases during any one season shows that this does not correspond to any type of water supply. Indeed, one of the characteristic features of the disease, though it is an accidental one, is the rare occurrence of more than one case in a given family during a season, and the number of cases which occur on any one stream during a season is too small to admit of the water theory. Also the rough coincidence of the spotted fever season with that of the melting snow and high water is a misleading one. A few consecutive warm days are commonly followed by a crop of cases of spotted fever in the spring. This, of course, does melt more or less snow, and does cause a rise in the streams, but it is equally efficient in rousing from lethargy millions of ticks which in cooler weather are too somnolent to respond to the presence of a host. The ticks have a multiplicity of hosts. They are known to occur naturally on at least seventeen of the domestic and wild animals of the Rocky Mountains (horse, cow, dog, swine, sheep, elk, deer, mountain goat and sheep, bear, ground squirrel, pine squirrel, rock squirrel, ground hog, chipmunk,

mountain rat, and the so called rock rabbit), and experimentally they feed readily on the guinea pig, rabbit, and monkey. Serum therapy, as practised with an immune serum derived from the horse, has not afforded decisive results, and perhaps for several theoretical reasons. In the first place, a degree of immunity in the horse greater than that established by simple recovery from the infection cannot be obtained until the organism can be cultivated and injected in excessive quantities. The repeated injection of virulent blood into an immune animal is of little or no value in increasing the quantity of protective antibodies because of the comparatively small quantity of virus which such blood contains. The immune serum is of such strength that from 0.3 to 0.5 c.c. protects against 1.0 c.c. of virus (approximately 1,000 pathogenic doses). Second, experiments with animals have shown that the serum cannot be expected to exert a marked curative effect when it is given later than the second or third day after inoculation, and even in this case such an amount is required as to reach an almost prohibitive quantity when translated into terms of the human body weight. Further, it is very exceptional to obtain cases of spotted fever earlier than the third to the fifth day of sickness, i. e., until the eruption renders the diagnosis reasonably certain. Third, it is probable, though not a demonstrated fact, that the serum is bactericidal rather than antitoxic in its nature. If this proves to be correct, experience with other similar sera augurs a low curative value regardless of the concentration of germicidal antibodies. No unfavorable effects, so far as can be determined, have attended its use. The advisability of modifying the technique of administration so that large quantities are given intravenously early in the course of infection is still a subject for consideration.

6. Typhoid Fever.—Sallom reports that there occurred in Philadelphia during a period of eleven and a half years 68,043 cases of typhoid fever, according to Bureau of Health of Philadelphia, with 8,102 deaths, giving a mortality of 11.75 per cent. The greatest number of cases occurred during the months of February, the lowest in July. The author believes that the filtered water has been instrumental in the reduction of the number of cases of typhoid fever, for it appears that while the number of cases was greatly reduced in the district receiving filtered water, typhoid fever was still quite prevalent in the district not receiving filtered water and in this manner increasing the general number for the entire city.

THE BRITISH MEDICAL JOURNAL.

Published twice a Week.

1. Darwinism and Medicine, By JAMES ALEXANDER LINDSAY.
2. The Identity of British Ulcerative Colitis and Tropical Bacillary Dysentery, By HERBERT P. HAWKINS.
3. The Alleged Heterogenesis in Ankylostoma Duodenale, By ROBERT T. LEIPER.
4. A Note on Oriental Sore, By R. MARKHAM CARTER.
5. Some Observations on Tubercle in Bombay; with Special Reference to a Precipitation Serum Reaction, By R. ROW.
6. A Study of the Tuberculin Reactions in Skin and Eye: A Series of 153 Cases, By CHARLES McNEIL.
7. A Case of Disseminated Tuberculosis Treated by Marek's Serum, By HENRY HEMSTED.

1. Darwinism and Medicine.—Lindsay, in his Bradshaw lecture concludes by saying: Is the human form destined to undergo important changes in the future under the operation of evolutionary law? Are we to look for the coming of the super man, a conception with which the thought of Nietzsche has rendered us familiar? "What with man is the ape," says Zarathustra, "a joke or a sore shame. Man shall be the same for beyond man, a joke or a sore shame." This is by no means certain. Weismann thinks it doubtful whether man may not have achieved the summit of his development both as regards physique and intellect, and is inclined to look for progress solely in the ethical sphere. Yet some of the facts seem to point decisively to the conclusion that the human body is destined in the course of many generations to undergo at least minor changes. The teeth, the hairy covering of portions of the body, the toes, the special senses, are almost certain to undergo modification. Nor can we limit the probability of change to such parts as these. All we can say in this connection is that the changes which will come will be the outcome of evolutionary law. Useless organs will be eliminated. Useful organs will undergo progressive adaptation to altered conditions, such as diet, climate, habit, occupation. The possibility of reversion and of degeneration will always need to be reckoned with. A general survey of the relation of Darwinism to the science and art of medicine is likely in many ways to be salutary. It will certainly tend to breadth of view, to a philosophical appraisement of the factors with which we have to deal, to a recognition of the great underlying laws and secular processes which are related to our art. It may, perhaps, act as a damper upon enthusiasm when we realize that evolutionary change is slow and only partially under our control; but, if this is the truth, it is better for us to know and recognize it. Medicine will gain in stability and in influence, as well as in dignity, by being in close relation with the higher thought of the day. It may in some not unimportant particulars react upon that thought. Disease becomes something more than a disagreeable and embarrassing fact when we realize how closely it is related to evolutionary processes, how vivid is the light it is capable of throwing upon evolutionary law. It even takes its place—a temporary place we may hope—in the eternal order. "Harmonious order," says Huxley, "governing eternally continuous progress; the web and woof of matter and force interweaving by slow degrees, without a broken thread; the veil which lies between us and the infinite—that universe which alone we know or can know—such is the picture which science draws of the world."

4. Oriental Sore.—Carter observes that there are several clinical types of Oriental sore in India alone and certainly two types in Arabia. Among Oriental sores in North India we find the three following types: *Monghyr phora*—a pale yellow painless raised area varying from $\frac{1}{4}$ to $\frac{1}{2}$ in. square surrounded by a faint red margin. This sore is usually situated on the face near the lips, eyes, or on the cheek or on the forehead. Such an Oriental sore is found commonly in Gujrat, in the Lahore district, and in the Himalayas. It does not break down as other sores do. It may last for over a

year, and after healing with a faint scar the disease may recur on other parts of the body, such as the elbow joint or wrist. 2. *Chambal* is a large flat surfaced ulcer fairly deep, with a bed of raised papilliform prolongations of the corium, which supports a mass of epithelial debris. 3. *The typical Delhi boil* is a similar condition of deep seated boils. The natives of North India recognize the clinical differences between the affections.

5. Some Observations on Tubercle in Bombay.

—Row states that there are some important differences in the results obtained by infecting guinea pigs from tuberculous material in Bombay to those one is accustomed to see in European laboratories, the chief being: 1. The slow and chronic character of the infection; 2, the production of large necrotic masses in the spleen and liver, and the absence of diffuse miliary tuberculosis, such as is seen in experiments in European laboratories with material from tuberculous patients. The lesions in his guinea pigs correspond with those produced partly by human tubercle bacilli and partly by bovine tubercle bacilli, as observed by Max Beck. From a number of observations of phthisis he found: 1. Characteristic grouping of the tubercle bacillus—instead of being diffuse and scattered, or at best in twos and threes, they group in masses of eight, ten, or twelve, or more bacilli, scattered here and there in the specimen, coming under focus as the search is proceeded with—in addition to the singles, twos, or threes, which appear to be fewer. 2. A gradual diminution of the number of the bacilli found in the sputum. 3. A morphological change of the individual bacilli—the individual rods, which were at first solid, show more beading, erosion of edges, and thinning—an appearance of distinct degenerative change in the bacilli. 4. A very great diminution of even these degenerate bacilli, so that one observes a few granules here and there indicative of some bacilli or their products. 5. Loss of their virulence, as no result is obtained by inoculation experiments.

THE LANCET

November 6, 1909.

1. Darwinism and Medicine,

By JAMES ALEXANDER LINDSAY.
On Oxaluria and the Treatment of Calcium Oxalate Deposit from the Urine, with a Method for the Solution of Calcium Oxalate Calculus whilst in the Urinary Passages.

By ROBERT MAGUIRE.
A Case of Late Traumatic Sublateral Hemorrhage: Traumatic Late Apoplexy.

By A. H. MILLER.
Starch Digestion in Babies.

By EDMUND CAUTLEY.
Lung Puncture: A New Application of Clinical Pathology.

By THOMAS J. HORDER.
The Dyspepsia of Old Age.

By W. SOLTAN FENWICK.
Sinusitis Occurring as a Concomitant Complication of Influenza.

By R. M. MANWARING-WHITE.
A Case of Tertiary Syphilis Terminating in Sudden Death from Abductor Paralysis of the Vocal Cords.

By ROBLEY H. J. BROWNE.
Rapid Recovery in a Case of Trophoneurotic Anæmia by Intramuscular Injections of Sodium Paraaminophenylarsenate.

By T. WILSON PARRY.
Bacteriological Investigations, on Some Modern Mouth Disinfectants.

By EUGENE PIASECKI.

2. **Oxaluria.**—Maguire remarks that a calcium oxalate calculus can be dissolved both outside the body and in living urinary passages by acid phosphate of sodium in such a strength of solution as can be produced in the urine of the human subject by the administration by mouth of an easily sup-

portable dose of salt. Since in the laboratory experiment successful solution was obtained by such a strength of phosphates as was determined in the urine after the administration of but one ounce a day of acid phosphate, it would seem unnecessary to exceed this amount as a dose, and thus the more disturbing but still bearable effects of two ounces, which his patient actually took, may be avoided. It would be desirable that a pure acid phosphate of sodium should if possible be used instead of the mixed compound now dispensed as such. Further, it must be remembered that a calcium oxalate calculus rarely consists of that salt alone, although in all probability it did so in the case described, thus explaining why no residue was passed. The stone used in the laboratory experiment had merely a uric acid nucleus, which when deprived of the surrounding oxalate would have caused no trouble in the urinary passages. But it is well known that stones occasionally consist of alternate layers of oxalate and of uric acid. It is conceivable, therefore, that in attempting to dissolve a stone one might have to alternate the solvent, removing the living passages, but he believes that the same great shrinkage would have been effected by a more prolonged action of the phosphate solvent. The remaining portion of the stone was then powdered. A part treated by potassium hydroxide dissolved completely. The remainder dissolved in strong nitric acid on heating, and after evaporation gave with liquor ammonia the characteristic murexide reaction of uric acid. He recommends that in all cases of prolonged deposition of calcium oxalate in the urine occasional doses of acid phosphate of sodium should be given to dissolve the deposit and so prevent the formation of a calculus. If nervous dyspepsia was the cause of the condition the phosphate so given would do no harm, but whether, if given continuously, it would influence the production as well as the deposition of oxalate is a matter which is worthy of investigation, but on which the author has as yet no information to communicate.

4. **Starch Digestion in Babies.**—Cautley finds that a diastasic ferment is secreted by the salivary glands and pancreas of new born infants and even before birth. Its amount and activity are slight in the first few weeks of life and after that rapidly increase. The glands, notably the pancreas, can be trained by means of a starchy diet to the secretion of an increased amount of the amylolytic ferment. There is no inherent reason why this training should not be begun shortly after birth in the case of the bottle fed infants, instead of waiting until the child has attained the age of six months, as so commonly advised on purely theoretical grounds. Practical experience has shown that the usual barley water contains about two per cent. of starch. If mixed with an equal quantity of milk there will only be one per cent. of starch in the mixture. Such an amount is noninjurious and almost certainly is beneficial, for it encourages the growth of lactic acid bacilli and the formation of lactic acid. These organisms are of undoubted advantage in the prevention of the growth of proteolytic bacteria. If a starchy food is used in the first few weeks of life, it is advisable to begin with a milk mixture which will not contain more than 0.5 per cent. of starch and to

gradually increase the amount as the child gets older. Indeed, at any age when a starchy food is first given it should be in very weak solution and slowly strengthened up to as much as three to five cent. If the stools become very acid or if they give a distinct starch reaction the percentage of starch in the diet must be reduced. Special care must be paid to these considerations in the first two months of life because of the deficiency of salivary secretion. Further investigations may possibly show that this is a point of little importance as the pancreatic secretion may be sufficient in quantity and activity. The evil effects of starch in early life are due to excess, its administration in the form of a more or less insoluble emulsion instead of as soluble starch, and the substitution of starch for the necessary protein, fat, and salts. In other words, the mischief results from deficiency of necessary proximate principles of diet rather than from the presence of starch.

MEDIZINISCHE KLINIK

October 3, 1909.

1. Neuroses of the Digestive Tract, By ALOIS PICK.
2. Colles's Law, By W. KNÖPFELMACHER and H. LEHNDORFF.
3. The Course of a Hæmorrhage after an Adenoid Operation in a Bleeder with Remarks, By KAFEMANN.
4. Ascending Infection of the Urinary Passages, By E. NOHL.
5. Volvulus of the Ascending Colon, By G. SEEFISCH.
6. Paratyphus C Bacilli as the Exciter of Acute Gastro-enteritis, By HUBNER.
7. The Influence Exerted on the Viscosity of the Blood by Carbonic Acid and Oxygen Baths, By E. BRÖKING.
8. Serum Therapy (Continued), By F. BLUMENTHAL.

4. **Ascending Infection of the Urinary Passages.**—Nohl says that in fevers of obscure origin, particularly in little girls, cystitis and pyelitis should always be thought of. In spite of normal appearing vulva more or less leucocytes may be mingled with the urine, which may obscure the diagnosis. In acute cases of cystitis or pyelitis the abundance of the cells and catheterization may suffice for the diagnosis, in prolonged mild cases the catheter and a slide from the vulva will prevent an erroneous diagnosis. A vulvitis of very slight degree should be looked upon as an intermediate station of an ascending infection which has heretofore been too little noticed. Therapeutically local disinfectant cleansings should be added to the treatment of the general condition and of the anæmia which is regularly present.

5. **Volvulus of the Ascending Colon.**—Seefisch reports a case of this nature met with in a man, fifty-four years of age, and operated on successfully six hours after the attack. The ascending colon was found to be sharply bent about three fingers' breadth below the hepatic flexure, the twisted portion lying with its longitudinal axis directed to the left. Replacement was not difficult, and the appearance of the intestine soon began to improve. During the toilet following the operation several pepercorns suddenly appeared in the peritoneal cavity, an evidence of a perforation which was found on the anterior surface of the stomach near the lesser curvature and not far from the pylorus. The place of perforation was excised and the wound sutured. The patient has remained perfectly well for a year.

7. **Influence Exerted on the Viscosity of the Blood by Carbonic Acid and Oxygen Baths.**—Bröking states that indifferent carbonic acid and oxygen baths lower the viscosity of the human blood, and that this effect is produced to a greater degree in men in whom the circulation is disturbed than in those with normal circulation. He does not think the viscosity of the blood is influenced by the inhalation of the specific gas flowing from the bath, but rather that the lowering of the viscosity is due to some mechanical stimulation of the gas holding baths, analogous to the effect of hot baths in reducing the viscosity.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 28, 1909.

1. Bacteriolysis of Tubercle Bacilli, By DEYCKE and MUCH.
2. Experiences with Wassermann's Reaction in Internal Medicine, By SAATHOFF.
3. The Role of Albumin in the Nutrition of Infants, By GROSSER.
4. Final Results of Girard's Radical Operation for Inguinal Hernia, By HEINZMANN.
5. Präsenile Gangrene Due to Arteritis Obliterans, By SCHÜMANN.
6. The Psychogenous Etiology and the Psychotherapy of Vaginismus, By WALTHARD.
7. Modern Results and Experiences in the Field of Heliotherapy, By WIDMER.
8. Treatment of Metatarsal Pain, By VON BAEYER.
9. Contribution to the Conservative Treatment of the Severest Injuries to the Extremities and Threatening Gangrene, By KNOKE.
10. A Case of Monolateral Ascending Tuberculosis in the Urogenital Apparatus, By FORKEL.
11. Prostatectomia Suprapubica Extravesicalis, By KONDOLÉON.
12. Ewing's Cover Glass Method for the Presentation of Vaccine Corpuscles, By PASCHEN.
13. The Clinoscope, a New Radiological Apparatus for Examination, By DESSAUER.
14. Gonorrhœa Suspensorium with a Pocket, By MEYER.
15. Instructive Information from the Statistical Handbook of the Grand Duchy of Hesse, By FISCHER.
16. State Insurance Regulation and Social Hygiene, By HANAUER.
17. Syphilitic Polyneuritis (Concluded), By STEINERT.
18. Precautions Taken by the District Medical Officers in Contagious Diseases (Concluded), By HENKEL.
19. Hofrat Dr. Hans Krauss.
20. Treatment of Fractures in Germany at the End of the Seventeenth Century, By FISCHER-DEFOY.

1. **Bacteriolysis of Tubercle Bacilli.**—Deycke and Much have as yet found no stock of tubercle bacilli which was not dissolved by neurine and choline. They agree with Uhlenhuth that it is possible with a comparatively small quantity of the substance to dissolve completely a large mass of tubercle bacilli within a few minutes so as to leave no trace. Uhlenhuth thought this bacteriolysis could be produced in the test tube but not in the body, but these writers disagree with him at this point and believe that this bacteriolysis can likewise be produced in the living body.

3. **Albumin in the Nutrition of Infants.**—Grosser maintains that it is not the albumin which is the factor that renders cow's milk inferior to human milk for the nutrition of infants.

4. **Girard's Operation for Inguinal Hernia.**—Heinzmann describes the operation introduced by Girard in 1894, compares the results obtained thereby with those obtained by Bassini's operation, and emphasizes several points in its technique. The operation is thus described:—Oblique or transverse incision about 6 cm. long through the skin over the

external inguinal ring, division of the superficial fascia, tying bloodvessels. Extensive incision of the inguinal canal, or of the obliquus aponeurosis, parallel to Poupart's ligament and 3 or 4 cm. above it. The lower flap of fascia thus formed which has Poupart's ligament as its base, is held outward. The hernial sac is now isolated from the spermatic cord and tied off as high as possible, when the infundibulum is broad it is sutured. If the separation of the entire hernial sac from the spermatic cord is very difficult it is extended only to the internal inguinal ring and the closure is made with suture or ligature according to the breadth of the neck. The lower margin of the obliquus internus and transversus and the lateral margin of the rectus are sutured as deeply as possible to the posterior surface of Poupart's ligament, the same as in Bassini's operation but without displacement of the spermatic cord. The upper margin of the incision through the obliquus fascia is likewise sutured to the posterior surface of Poupart's ligament. The lower flap of the obliquus aponeurosis, 3 or 4 cm. broad, is drawn up over the already sutured upper portion and fastened to it by sutures. In view of the good results obtained he thinks that this method should be employed more frequently than it has been in the past. The operation should always be performed with the most painstaking asepsis, particularly with regard to the suture materials, as this alone can guarantee a permanent cure. He prefers silk. The most difficult part of the operation is the closure of the hernial orifice at the exit of the spermatic cord. Skilled assistants are necessary for its proper performance, and it is therefore suited only for hospital work.

5. **Præsenile Gangrene.**—Schümann reports two cases of præsenile gangrene due to arteritis obliterans, one in a man of thirty-six, the other in a man of thirty-nine years of age. No history of syphilis in either case. The writer emphasizes the fact that both smoked cigarettes, and thinks the endarteritis obliterans present was the result of chronic nicotine poisoning. In support of this theory he quotes the case reported by Erb in which the patient smoked twenty cigars a day. These patients had smoked for years ten to twenty cigarettes in the one case and ten to thirty cigarettes a day in the other. Other writers are quoted who ascribe this disease of the arteries to abuse of tobacco, but it would seem to the reviewer that if the cigarettes were at fault in these cases the patients must have had an idiosyncrasy against tobacco. The practical recommendation is that in all cases in which recognizable symptoms of endarteritis obliterans are present wounds of the feet which would be considered harmless in a healthy individual should be treated with the greatest possible care, including rest in bed, and that in operations the question must be taken into consideration whether local anæsthesia with adrenalin may not be productive of harm.

6. **Vaginismus.**—Walthard believes that vaginismus is not caused by a hyperæsthesia of the introitus vaginae, and that it is not a physiological reflex, but is a psychic reflex caused by a sort of fear.

17. **Syphilitic Polyneuritis.**—Steinert concludes that there is a syphilitic polyneuritis, and that it appears in the secondary stage of syphilis, most

frequently early, and usually associated with specific symptoms in the skin and mucous membranes. The occurrence of a syphilitic polyneuritis in the tertiary or metasyphilitic stage can not be demonstrated.

October 5, 1909.

1. Tuberculin Diagnosis and Treatment together with Studies of Metabolism in the Tuberculin Reaction, By SAATHOFF.
 2. The Antiproteolytic Substance in the Blood Serum of Healthy and Diseased Infants, By LUST.
 3. The Reactive Glioma, By MERZBACHEK.
 4. The Chemistry of the Sputum of the Tuberculous, By PROROK.
 5. Cammidge's Pancreas Reaction, By SCHUMM and HEGLER.
 6. Chronic Inflammatory Epigastric Tumors after Hernia Operations, By KREUTER.
 7. Subphrenic Abscess and Perityphlitis, By KÖLSCH.
 8. A Case of Poisoning with Unripe Hellebore Seed, By REINHARDT.
 9. The Therapeutic Use of Local Applications of Cold to the Nape of the Neck, By MARCUSE.
 10. Remarks Concerning the "Demonstration of the Cholera Poison," By EMMERICH.
 11. An Improved Scissors Shaped Perforator, By ZIEGENSPECK.
 12. Otto von Bollinger, By DÜRCK.
2. **The Antiproteolytic Substance in the Blood Serum of Healthy and Diseased Infants.**—Lust asserts that the atrophy of infants is not associated with an increase of the antiproteolytic substance, and that therefore any cachectic condition of an infant, such as the consequence of a chronic nutritive disturbance, and its processes of metabolism comes from the same cause as cachexiæ of adults. If the theory of a connection between cell destruction and increase of antiferment is correct there must be a destruction of cell substance in cases of acute dyspepsia. The alimentary intoxication is a nutritive disturbance which is not different in its nature from acute dyspepsia, but presents only an increase of metabolic disturbances, which are in part present also in acute dyspepsia. The metabolism of albumin is nearly related to the proteolytic antiferment of the blood serum, and a loss of cell albumin from the organism can be met by an increase of this antiferment.

5. **Cammidge's Test.**—Schumm and Hegler state that many positive Cammidge tests are simply positive grape sugar tests and that the results of the Cammidge reaction are influenced more or less by accidental conditions.

6. **Chronic Inflammatory Epigastric Tumors after Hernia Operations.**—Kreuter reports two cases in which some months after perfectly aseptic operations for hernia soft, fibrous, painless tumors appeared in the abdominal wall, that had formed about silk sutures.

8. **Poisoning with Unripe Hellebore Seeds.**—Reinhardt reports a case in which a little girl, seven years old, picked and played with some unripe seeds of the *Helleborus viridis*, or *Veratrum album*. Shortly afterward she began to suffer from burning all over the tips of the fingers of her right hand and large blisters developed, filled with yellow serum, which dried up under a protective dressing in the course of a week. Some days after the formation of the blisters on the tips of the fingers the child felt unwell, lost her appetite, and for several days had a moderate fever, while numerous blebs filled

with serum appeared on the tip of the tongue and gums which were extremely painful. It is probable that the child carried her finger to her mouth and so transferred a portion of the poison there.

ANNALS OF OPHTHALMOLOGY.

October, 1909.

1. Ocular Symptoms of Arteriosclerosis, By W. E. BRUNER.
2. Accuracy in the Measurement of Refraction, By E. JACKSON.
3. Conjunctival Infection in Manila, By RALPH T. EDWARDS.
4. Reflex Asthenopia from Intranasal Pressure, By M. L. FOSTER.
5. Report of a Case of Apparently Idiopathic Recurrent Vitreous Hæmorrhage, By N. M. BLACK.
6. Flat Sarcoma of the Uveal Tract and Angiosarcoma of the Orbit, By H. G. GOLDBERG.
7. The Choice of Operation for Iridotomy, By M. CLUNEY RADCLIFFE.
8. Report of a case of Complete Hard Cataract, with Extraction, at the Age of Fourteen, By HUGO A. KIEFFER.
9. Angioid Streaks in the Retina, with Report of a Case, By W. ZENTMAYER.
10. Hereditary Blindness and Its Prevention (Concluded), By C. LOEB.

1. **Ocular Symptoms of Arteriosclerosis.**—Bruner reports twenty cases and says in conclusion that the ocular manifestations of arteriosclerosis are numerous and varied; but from the diagnostic standpoint it is the group of signs which occur in the early stages of the disease that are especially important to the general physician. Many patients who think themselves in good health seek the oculist for presbyopic correction in whom a careful ophthalmoscopic examination will reveal the signs, perhaps the very earliest, of beginning arteriosclerosis, and this is the time of all others when something can be done for these patients to avert the more serious later stages of the disease.

4. **Reflex Asthenopia from Intranasal Pressure.**—Foster reports several cases in which patients complained of pain in the eyes, lachrimation, and headache referred to and increased by the use of the eyes, symptoms which eventually yielded only to removal of pressure from between the turbinates and the septum in the nose. He believes that there are many patients who suffer chronically from such symptoms and wander from one ophthalmologist to another for years without relief in spite of careful correction of all refractive errors and adjustment of muscular imbalance. As a rule, he says that these patients present no symptoms to direct attention to the nose, except this persistent asthenopia, and this absence of nasal symptoms leads the patients, as well as their physicians, to question the possibility that their troubles are due to a fault in the nose. He believes the suffering to be reflex, analogous to the earache in a healthy ear caused by a decayed tooth, and finds this theory supported by the fact that in two or three of the cases the pain caused by the operations and manipulations in the nose were felt mainly, or wholly, in the eye and not in the nose. Finally, he urges that every ophthalmologist should render himself competent to investigate the intranasal condition of patients with such obstinate asthenopia in order to be able to locate the source of trouble and then either to relieve any pressure found, or to refer the patient with an accurate diagnosis to a competent rhinologist for operation.

THE CANADA LANCET.

October, 1909.

1. Presidential Address, Canadian Medical Association, By R. J. BLANCHARD.
2. Prevention of Tuberculosis by Massage and Electricity, By SIR JAMES GRANT.
3. Toilet of the Tympanum in Mastoid Operations, By GILBERT ROYCE.
4. Diagnosis and Treatment of Acute Intussusception, By A. B. ATHERTON.
5. The Relation of the Hospital to the Community, By R. W. BRUCE SMITH.
6. Hyperpyrexia and Death After Tonsillotomy, By D. J. GIBB WISHART.
7. To Miss Florence Nightingale, By E. S. MCKEE.

2. **Prevention of Tuberculosis by Massage and Electricity.**—Sir James Grant refers to gastrointestinal debility as the precursor of tuberculosis. Healthy blood, says the author, is the very pabulum of life, but how long can blood be life sustaining under trying circumstances. The anxious expression, the ex-sanguine face, the feeble pulse, flabby muscular tissue, and inability to perform responsible duties, with ordinary activity, all point to a lowered degree of vitality, and a system, a fit nidus, for the *Bacillus tuberculosis*. The problem is, how can such be counteracted. Tuberculosis has a preparatory stage, the chief period for action. In the life history of such patients, great care should be devoted to the abdomen, as to whether or not a dilated colon is present, the outcome of defective food assimilation, and the associate of a cleft axis cylinder. Poisonous gases in the bowels, the outcome of imperfect assimilation of food products, acting directly on the saline constituents of the axis cylinder, produce clefts in the axis cylinder, arresting the process of healthy blood elaboration. Under such circumstances great benefit is derived from abdominal massage, medical and electrical, increasing the blood supply, and obviating the development of tuberculosis in its varied forms. Sir James describes his method as follows: Moisten the skin of the abdomen with warm water and a sponge, before applying the electrical current to the space midway between the hip crest and the last rib about three inches to the right of the navel, which application is to be continued about ten minutes. Afterward pass the current mildly over the entire abdomen for five minutes and dry the surface carefully after each application. Moisten each leg, from the knee to the ankle, and apply the current freely, for five minutes to each leg, and dry carefully. The object in view, in the application of the current to the extremities, is to arouse increased nervous activity in the terminals of the sciatic and saphenous nerves, and their varied communications, in the pelvic and abdominal regions, accessories, to the remarkable histogenetic spaces. These applications must be repeated each day, at bedtime for two weeks or more, and repeated once or twice afterward each week for three or four weeks, should any evidence of weakness continue. No application of the treatment should be made less than two hours after a meal. Before the application of the electrical current, drop fifteen or twenty drops of liquid antiseptic soap over the navel, and use vigorous massage for ten minutes over the entire abdomen. In no case in which any form of paralysis is in evidence should the electricity be used.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held in St. Louis, October 12, 13, and 14, 1909.

The President, Dr. JOHN A. WITHERSPOON, of Nashville, Tenn., in the Chair.

(Continued from page 1039.)

The President's Address.—Medical Education, Past, Present, and Future.—In his address the PRESIDENT said, among other things: This being the largest independent medical society in this country, it should go on record as standing for more than social and scientific work in its meetings; it should stand firmly for medical education in its highest sense of progress and wield its influence to bring about reform in medical teaching by, first, insisting on every State within its territory having uniform medical laws; second, that none but men of culture and strictest integrity be placed on examining boards, and that politics be kept out of all medical transactions; third, that colleges not having equipments to teach modern medicine should be condemned, and that no one should assume the responsibilities of teacher who is not by training and natural talent especially fitted to impart and instruct others; fourth, that no college should be recognized that did not insist upon sufficient preliminary education and mind training of every student to receive and digest modern medicine as an entrance requirement, and a standard curriculum in which full laboratory and clinical facilities will insure that none but good and well qualified men will be graduates; fifth that all schools should give prominence to the teaching of hygiene and sanitation, departments sadly neglected in the past, but in preventive medicine so necessary for the protection of our people from infectious diseases, either endemic or epidemic; sixth, that colleges must have endowment, and that no philanthropy was more needed or deserved and none would give greater returns, both by insuring the people that none but competent men would belong to our profession, and financially, because they would enforce laws which would forever bar the entrance of epidemic scourges into the country.

Modern Surgery of the Digestive Tract.—Dr. JOHN B. DEEVER, of Philadelphia, stated that the two prevalent conditions of the stomach which might be considered grave menaces to the life and health of the patient were carcinoma and ulcer. It was out of the question that carcinoma anywhere could be considered as offering any opportunity for the display of medical agents, and we had gradually come to a realization that the same held good of gastric ulcer. Our problems as regarded these grave and not infrequent conditions were manifold. They might be arranged in several subdivisions, diagnosis, the propriety and method of surgical intervention, and the results of surgery of the stomach. It was a lamentable fact that diagnostic methods and results in disease of the stomach had lagged far behind the improvements in surgical technique and pathological experimentation. It was customary among those who decried modern surgical tendencies to refer to the inferior diagnostic acumen of

surgeons; yet here we had an instance in which the diagnosis of important and vital conditions had been entirely mistaken until the surgeon had shown the way. It was to the surgeon that credit must be given for showing that carcinoma of the stomach was generally recognized long before it had reached this final stage. The exploratory operation, so called by its opponents, but more rightly considered an early operation on the strength of early symptoms, was responsible for this. Observation of the living pathology in these cases had shown us that carcinoma of the stomach often made its presence known early in its course by signs which, to the experienced observer, were definite and often unmistakable. In any person at or beyond middle age a persistent, grave dyspepsia with progressive loss of weight and strength should be looked upon with suspicion. Anorexia and, according to Kocher, especially that form of it which manifested itself in an aversion to meat, should be enough to cause a careful study of the case. Often a slight epigastric tenderness and a feeling of oppression after eating even the lightest of foods would be the first symptoms to come to the patient's attention.

An early operation must be considered as justified when we thought of the certainly fatal outcome of every case of gastric carcinoma without an operation and of an overwhelming majority of those with an operation even before the disease had reached its final stages. In cancer of the stomach excision, where this was possible, and gastroenterostomy, where we could only hope to suitably drain the stomach, offered us the only hope of permanent cure or of temporary relief. Our technique was good, and the mortality of pylorotomy was low and that of gastroenterostomy almost nothing. Our main difficulty, and one which seemed most hard to overcome, was to bring the cases to operation early enough. He would not say "operate for dyspepsia," but he would advise an operation in permanent, grave dyspepsia in persons of middle age, even when there was no apparent anatomical cause. An operation but too often showed the root of the evil, even then so extensive as to defy efforts to remove it. Gastroenterostomy as a cure for gastric ulcer now occupied an undisputed place. It must not always be recommended; for instance, in acutely bleeding ulcers it was worse than useless. Its initial mortality in benign conditions of the stomach was less than three per cent. in the hands of experienced operators, and its complications were almost none. The final results were good, and such observers as Mayo Robson, the Mayos, Czerny, and others reported definitely from seventy-five to ninety per cent. of cures.

It would be seen from the foregoing remarks that progress in surgery of the digestive tract had been great, but that much yet remained to be done. It was also evident that we must seek advances, not principally in the elaboration of minor technical details or operative procedures, but by endeavoring to utilize thoroughly the recent great advances in the normal and pathological physiology of the digestive tract.

The Pectinate Line—the Zone of Rectal Pathology.—Dr. J. RAWSON PENNINGTON, of Chicago, said that embryology furnished an explanation of

the frequency with which disease attacked the junction of the anal canal and the rectal ampulla. The region in question was one of the points of coalescence of the two primitive germ layers, the ectoderm and the entoderm. This junction of the anal canal and rectal ampulla was marked by the pectinate line, and gave rise to the crypts and columns of Morgagni. The histological structures entering into the formation of this coalescence being different, we should expect the diseases affecting the area to be different also, and that was what we found.

He then briefly discussed the various diseases occurring in this zone, among them abscesses, fistula, ulceration, internal and external hemorrhoids, foreign bodies, etc.

EXOPHTHALMIC GOITRE.

The Medical Treatment.—Dr. S. P. BEEBE, of New York, detailed the results of serum treatment of this disease and said that in many respects it was very encouraging. He had seen the effects of surgery as practised by a variety of surgeons in these cases. Men of very limited experience should not operate in cases of exophthalmic goitre. None but the most experienced surgeons should undertake this operation. The operation required great judgment and skill not only in its execution but in the preparation of the patient. No greater harm could be done than when a number of young surgeons took it for granted that this was the operation to do, and they did it right away. They should serve a long apprenticeship under surgeons before doing such a formidable operation.

Postoperative Results.—Dr. GEORGE W. CRILE, of Cleveland, presented a report based upon a total of 278 operations upon the thyroid gland. He had operated upon fifteen malignant tumors. In thirteen the diagnosis was either made or suspected. All of the patients died. In two cases, one of sarcoma and one of carcinoma, malignancy was found in the routine pathological examination and was not suspected clinically. His personal experience and the reports from a number of clinics led him to conclude that cancer of the thyroid was at present rarely, if ever, diagnosed in its curable stage, and the occasional cure was accidental. Among the benign tumors and plain goitres there was one fatality. In malignant tumors diagnosed clinically, the postoperative results were as uniformly unsuccessful as they were successful in plain goitres and benign tumors. A study of his series of seventy-two operations for Graves's disease, presenting as they did numerous and complex symptoms, and involving many organs as well as the most fundamental vital processes, impressed him with the great, almost insurmountable difficulty, or even the impossibility, of compiling any statistical table that accurately represented the net clinical results. The longer the disease had existed, the greater the organic changes and in consequence the more tardy the convalescence, and if the organic lesions had progressed to a certain degree, the operative risk was greatly increased and the risk might become an operative impossibility. In these desperate cases, when operative recovery took place, the convalescence would be correspondingly slow, stormy, and incomplete. The ship had gone upon

the rocks and it was the wreckage that we were dealing with. Now, he had seen no case that was not benefited by operation. The majority regarded themselves as cured. Operating before organic changes of importance had occurred, and acknowledging all the difficulties and shortcomings, he knew of few classes of cases that showed such deep and fundamental relief as cases of acute toxic Graves's disease.

Primary Bilateral Ligation of the Upper Poles of the Thyroid Gland for Exophthalmic Goitre.—Dr. J. H. JACOBSON, of Toledo, drew the following conclusions: In all, there had been eight cases of pole ligation; one, in which a single upper pole was ligated, resulting in a cure; one, in which the upper and lower poles on the same side were ligated, which was followed by improvement; and six in which both upper poles were ligated; in one of these, there was no effect. The patient was moribund at the time of operation, and of the remaining five, four were symptomatically cured and one had been very markedly improved. This case was too recent to give the final result. All the patients expressed themselves as being greatly pleased with the operation and its effect.

His conclusions were as follows: 1. Ligation of both poles of the thyroid gland acted, first, by diminishing the blood supply to the gland and thus diminishing immediately its activity; secondly, by directly diminishing and preventing the gland secretion from entering the general circulation by way of the main lymphatic channels which left the thyroid body at its upper poles; and, thirdly, by causing a subsequent atrophy of the gland itself. 2. The operation of "pole ligation" was much easier to perform than ligation of the thyroid vessels, and might be as effective as a partial thyroidectomy. 3. It did not disturb the blood supply of the parathyroid glands or endanger the recurrent laryngeal nerve. 4. Theoretically, at least, and from the simplicity of its performance, it would seem that "pole ligation" should entirely supplant the operation of simple ligation of the thyroid vessels in Basedow's disease and in many cases the necessity of partial thyroidectomy. 5. As a preliminary operation to partial thyroidectomy for Basedow's disease, it would be found of great value. 6. At the present time we were warranted in saying that "pole ligation" offered the prospect of cure in many cases and of lasting improvement in others. 7. The operation of "pole ligation" was a safe one and in skilled hands had no mortality.

The Value of Thyroidectomy in the Treatment of Catatonic Dementia Præcox.—Dr. ALLEN B. KANAVAL and Dr. LOUIS J. POLLOCK, of Chicago, summarized the results obtained in operations in twelve cases of this disease at the Dunning Institution for the Insane. The cases were studied by Dr. Pollock and submitted to operation. Dr. Kanavel reported his results as follows: There was absolutely no result in any of the old cases. Of three cases of operation in the so called favorable stage, two showed marked improvement lasting in one case for two months and in the other case for six months. The third case showed no change at all. The two cases which showed temporary improvement relapsed at the end of the periods mentioned

and the patients were now in practically the same condition as before the operation. The pathological examination of the glands did not show changes favoring the diagnosis of thyreotoxicosis, although the changes were compatible with it. Berkley still reported favorable results in his cases, but the results of the investigation in the present series could not but lead one to a most conservative report concerning the value to be derived from the procedure.

Surgical Treatment of Exophthalmic Goitre.—Dr. A. J. OCHSNER, of Chicago, said that exophthalmic goitre became a surgical disease after it had been shown that internal treatment and treatment by serum were of no avail. When cases had advanced to the point of great interference with the function of the heart muscles and of the nervous system, then the results from surgical treatment were not promising. Dr. Ochsner's remarks were illustrated by numerous stereopticon slides. He described the collar incision of Kocher, which was employed for the removal of these goitres, and detailed the technique.

Dr. HERMAN TUHOLSKE, of St. Louis, said that the thyroid gland was an organ necessary to life. Without it trophic changes would be inaugurated of such a character as to result in the decay or death of the patient. This one factor should be kept constantly in mind in considering the various phases of this subject. Again, it was the experience of all surgeons that there were a number of patients with exophthalmic goitre who would get well with or without treatment, and while that number was small, still it became a factor in discussing the value of the remedies that had been used in the cure of this disease.

Dr. ARTHUR R. ELLIOTT, of Chicago, said the tone of the papers read was preponderatingly surgical. This was in keeping with the present tendency which had initiated a movement strongly toward the assumption that Graves's disease was a surgical affection, but perhaps not always in the interest of rational therapy. This was probably to an extent due to the fact that medical measures were unsatisfactory and unsuccessful in a certain proportion of inveterate cases of Graves's disease. It was not to be forgotten, however, that the medical practitioner came in contact quite frequently with many cases of thyroidism in various stages and degrees of intensity, many instances of which underwent a symptomatic cure, if we could speak of such a thing as curing this disease, and a large proportion of them improved under measures intelligently applied, such as rest, tonic treatment, diet, etc. This was true not only of the milder and the chronic types of thyroidism, but of many instances of more acute Graves's disease, as those who practised before the days of thyroid surgery could testify. Without directing any criticism against the surgical treatment, which in the hands of expert and experienced surgeons had amply justified itself by results, it was a fact that in the hands of the average surgeon the operation of partial thyroidectomy was attended by a high mortality.

Dr. J. HENRY CARSTENS, of Detroit, said the symptoms of this disease were very obscure, but there was one symptom he wanted to emphasize. Take a young woman who had repeated attacks of

palpitation of the heart, without any particular cause, without any other symptoms, such as protrusion of the eyes, enlarged thyreoid, etc.; we should bear in mind constantly Graves's disease.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Minor and Operative Surgery, Including Bandaging. By HENRY R. WHARTON, M.D., Surgeon to the Presbyterian Hospital (Philadelphia), etc., Seventh Edition, Enlarged and Thoroughly Revised, with 555 Illustrations. Philadelphia and New York: Lea & Febiger, 1909. Pp. vii-17 to 683.

In spite of its enlargement, this edition of Dr. Wharton's popular textbook is still a convenient volume to handle. It seems likely that many more editions will be called for, and the book will doubtless long continue to meet with the favor of the profession.

Obstetrics, A Manual for Students and Practitioners. By DAVID JAMES EVANS, M. D., Lecturer on Obstetrics and Diseases of Infancy, McGill University, Montreal, etc. Second Edition, Revised and Enlarged, Illustrated with 172 Engravings. Philadelphia and New York: Lea & Febiger, 1909. Pp. ix-17 to 440.

Dr. Evans's manual is one of the best of the smaller textbooks of obstetrics, and we are glad to see that a second edition of it has been called for. The author's descriptions are clear and his advice is wholesome. We have noted but very few slips of statement. Among them is this passage (page 309): "In a series of 300 of these cases collected by Lafleur the mortality of the mothers, of delivery by the natural passage, was 25 to 55 per cent. and 77 per cent. for the children." Now, according to the statement, the mortality must have been definite, not "25 to 55 per cent." Again, on page 409, we find it stated of symphysiotomy that it was comparatively popular during the early decades of "the present century." Since we have not yet completed the first decade of the present century, this sounds queer. But these are minor defects, and doubtless Dr. Evans will correct them in the next edition.

Physicians' Combined Call Book and Tablet. By RALPH WALSH, M. D.

Physicians' Handy Ledger. Twelfth Edition. By RALPH WALSH, M. D., Washington, D. C. (Price, 600 patients, \$3.50; 1,200 patients, \$7.)

The Physicians' Visiting List (Lindsay & Blakiston's) for 1910. Fifty-ninth Year of its Publication. Dose Table has been revised in accordance with the new U. S. Pharmacopœia. Philadelphia: P. Blakiston's Son & Co., 1909. (Price, \$1.)

The heralding of the coming exit of the old year and the advent of the new year is performed in our editorial office by the appearance of the medical calendars. So far we have received two such books for 1910.

P. Blakiston's Son & Co. have brought out the fifty-ninth publication of their *Physician's Visiting List*, arranged for twenty-five, fifty, seventy-five, or one hundred patients, the first two in one vol-

ume, the last three in two. Besides the calendar and the visiting list, it contains the usual addenda, a gestation table, a list of chemical incompatibles, a table for converting apothecaries' weights and measures into grammes, a dose table, etc.

Walsh's *Physician's Call Book* is not arranged in calendar form; it leaves this open to the physicians, and has as additions a dose table in apothecaries' weight and metric terms, a table of poisons and antidotes, a list of chemical incompatibles, etc.

Walsh's *Physician's Handy Ledger* can be used with Walsh's call book or any other visiting list. It is published in two editions, for 600 and for 1,200 patients.

All these publications are so well known that it is hardly necessary for us to point out their excellences.

Textbook of Anatomy and Physiology for Nurses. Compiled by DIANA CLIFFORD KIMBER, Graduate of Bellevue Training School, Formerly Assistant Superintendent, New York City Training School for Nurses, Blackwell's Island, N. Y., etc. Third Edition, Revised by CAROLYN E. GRAY, R. N., Assistant Superintendent, New York City Training School for Nurses. New York: The Macmillan Company, 1909. Pp. xiii-438.

It must be difficult to know where to draw the line in selecting from our knowledge of a given science what is essential and valuable to the nurse. In the main, this has been very well done in this book, although at times condensation has led to obscurity, and it is a question if the few pages devoted to chemistry and histology are of any value at all. The advances in knowledge since the publication of the second edition, in 1902, have been incorporated, and the Basle nomenclature has been adopted. The illustrations have been borrowed with discrimination, making the book a handsome one. The proofreading is careless.

Atlas der Elektropathologie. Von Dr. S. JELLINEK. Privatdozent an der k. k. Universität in Wien. 230 meist farbige Abbildungen auf 96 Tafeln und 16 Textfiguren. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. xi-92. (Price, Mk. 35.)

This magnificent work is the only one, so far as we know, that has so thoroughly covered a field but lightly touched on by other writers. It deals, however, with but two branches of electropathology, namely, the accidents that have occurred in connection with commercial currents, chiefly those of high voltage, and with effects of lightning strokes. The marvel is that the author should have had the opportunity to see the large number of cases that he describes. To his personal cases he adds a considerable amount of material gathered from other sources. In dealing with each case he proceeds as follows: First, there is a detailed description of the circumstances that surround the accident; second, there is a line drawing showing the position of the patient, and the occupation in which he was engaged at the time of the accident; and thirdly, there are photographs or colored plates illustrating the actual lesions. Not only these, but the author shows the injuries to the garments, etc., at the points of entrance and exit of the current. This truly remarkable work will prove of interest to every surgeon, but should also be in the hands of every one who works among the high tension industrial currents.

A Textbook of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College Hospital; One Time Clinical Professor of Diseases of Children in the University of Pennsylvania, etc. Thirteenth Edition, Enlarged, Thoroughly Revised, and Largely Rewritten. Illustrated with 122 Engravings and 4 Colored Plates. Philadelphia and New York: Lea & Febiger, 1909. Pp. ix-958.

The thirteenth edition of Hare's popular book is enlarged and pretty thoroughly revised. Among the newer remedies considered are atoxyl in syphilis, phenolphthalein, ethyl salicylate, and novaspirin in gout and rheumatism, aspirin locally in amygdalitis, the local application of magnesium sulphate, picric acid in burns, hexamethylenamine in enteric fever, the so called Lenhartz method of treating gastric ulcer, and Murphy's method of treating septic peritonitis by rectal irrigation. The recent researches on anæsthetics are touched upon. The 950 pages in this edition go to prove that not all of us are reduced to either a despairing or a contemptuous therapeutical nihilism.

Klinik für psychische und nervöse Krankheiten. Herausgegeben von ROBERT SOMMER, Dr. med. et phil., Professor an der Univ. Gießen. IV. Band, 2. Heft. Inhalt: I. TH. BECKER, Dr., Stabsarzt, kommandiert zur Klinik: Ueber Simulation von Schwachsinn, II. A. KNAUER, Dr., früherem Assistenten der Klinik: Zur Pathologie des linken Schläfenlappens. Halle a.S.: Carl Marhold, 1900. Pp. 194.

This, the second part of the fourth volume of the clinic for psychic and nervous diseases, contains two essays. The first one, by Dr. Becker, is a conclusion of a contribution of his on Simulation of Weak Mindedness, which was begun in part one. The second article, by Dr. Knauer, has the title: Contribution to the Pathology of the Left Temporal Lobe.

The Dietetic Treatment of Diabetes. By B. D. BASU. Allahabad: The Panini Office, Bhuvaneshvari Ashram, 1909. Pp. 40.

The author of this little book gives us a short résumé of the views which he holds on the dietetic treatment of diabetes. It is written as much for the general practitioner as for the general public, because, "unfortunately diabetes is a common disease among the educated community of India," remarks the author. It contains nothing very original, and neither the professional man nor the layman will derive any great benefit from its perusal.

Physiology and Hygiene of Children. By ROBERT EADIE, Principal of School 72, Borough of Queens, New York, and ANDREW EADIE, M. D., Professor of Physiology, Ontario Medical College for Women, Toronto, Canada. New York: Charles Scribner's Sons, 1909. Pp. 201.

Physiology and Hygiene for Young People. By ROBERT EADIE, Principal of School 72, Borough of Queens, New York, and ANDREW EADIE, M. D., Professor of Physiology, Ontario Medical College for Women, Toronto, Canada. New York: Charles Scribner's Sons, 1909. Pp. 353.

The idea underlying these two volumes is undoubtedly great. The child, as soon as it is old enough to comprehend its object, should be taught physiology and hygiene in their practical aspect, while later on the scientific side might be taken up. But the important question is, When has the child reached this age? From a thorough reading of the

two volumes we are convinced that there are, in the first volume, many sentences, even chapters, which "a child" will not comprehend. We appreciate the highly commendable purpose of the authors, but we must say that the *Physiology and Hygiene for Children* is meant only for very advanced children, for children of the graduating class of our public schools. And even these will not always be able to understand the book. The first volume—"for children"—goes absolutely too much into details. The illustration of the cooking of food (page 55) may apply to a kitchen of one of our largest hotels, but never to a home kitchen, if the owner is not a millionaire. The "gastric glands" (page 67) or "a villus" (page 74) or "section of skin" (page 119)—splendidly executed—are not adapted to a child's mind. What can a child know of the brain, spinal cord, and nerves (illustration, page 133)? The "neatly bandaged arm" (page 167) looks great in the illustration, but we would thank the authors to demonstrate to us this bandage *in vivo*. And so through the book. It starts with a comparison of the body to a clock, which "little Charles" will understand, but the little boy must grow up to be "Mister Charles" before he can comprehend it.

MEDICOLITERARY NOTES

We read with some surprise the heading of an article in the December *Cosmopolitan*, The Supremacy of the American Stage. We find, however, it refers to the fact that we spend more money on scenery and clothes in mounting a musical comedy than is customary in the European theatres where there is some artistic perspective. The superiority of the acting in our Broadway productions of a more serious type to that exacted of the artists of the Théâtre français, the Lyceum, and the Royal Theatre of Berlin, is really not so great but that sustained effort on the part of the latter for some months would enable them to overtake our performers. The Illustrious Prince, by Mr. Oppenheim, bids fair to present the most involved plot in fiction since *Bleak House*. The Other Woman, which excited great expectations, comes to rather a tame conclusion; the anonymous author seems to have dodged a logical dénouement.

The November *Everybody's* falls into theatrical line with an article by Hartley Davis on the business end of the drama. The faultlessly beautiful faces of the best known theatrical promoters replace the customary *figurantes* by way of illustration. Judge Ben B. Lindsey continues his heartbreaking but supremely important *Beast and the Jungle*. That clever woman, George Madden Martin, is welcome with a story *On a Hotel Balcony*. E. Alexander Powell tells how German naval officers drink nightly to *Der Tag*, which sounds ominous. A composite portrait of fifty-one kings of finance shows how villainous the type appears in comparison with the lovely, intellectual, and noble physiognomy of the average physician.

We have said more than once that the *World's Work* is a capital magazine for the busy practitioner; the November number is well up to the average. Opinions will vary regarding the views ex-

pressed in the editorial *A Lot of Latin Humbug*. Plans are stated by the management to devote considerable space during 1910 to matters of health and hygiene. If the articles are well done, physicians will welcome them. We know better than most that the necessity for the existence of our profession is a heritage of barbarism.

The November *Century* has a shocking picture on the cover of one young gentleman with a distorted face picking up another similarly disfigured and preparing evidently to destroy a third with his person. The insertion of a football into the composition explains matters. Brander Matthews, in view of the general dearth of theatrical news in the magazines, has supplied a timely article on the Dramatist and the Theatre. All the stories and articles are of a high order, and every opportunity is taken, as usual, to introduce exquisite illustrations. Particularly fine are two reproductions of the work of the lamented Louis Loeb.

William J. Locke, whose remarkable step from the commonplace to the distinguished in fiction was taken with *A Beloved Vagabond*, begins a story, *Simon the Jester*, in the November *American*. Doc is a story by Harry James Smith of a physician, not sketched from life we fancy; the dialect is askew. We never heard a newsboy call his wares either "poipers" or "poipes." There is plenty of real dialect for the student around the end of the bridges. There is a fine and sane editorial on vivisection, as the people love to call it; experimental physiology it refers to. Where the Blow is Struck is from the point of view that certainly merits consideration, of a drunkard's wife. The American Woman, by Ida M. Tarbell, is the first of a series of articles that are evidently going to be fascinating reading.

The *Red Book* for November has, among several excellent stories, one of unusual character. A Daughter of Two Lands, by Onoto Watanna. This details the struggle in a girl's heart between her duty to her Japanese father and her American mother; she finally decides in a way satisfactory to American readers.

NEW PUBLICATIONS.

Lenzmann, Richard.—Die Pathologie und Therapie der plötzlich das Leben gefährdenden Krankheitszustände. Zweite, vielfach umgearbeitete und vermehrte Auflage. Jena: Gustav Fischer, 1909. Pp. viii-584. (Price, 12 M.)

Bordet, Jules.—Studies in Immunity. Collected and Translated by Frederick P. Gay, A. B., M. D., Instructor in Pathology in the Harvard Medical School. Including a Chapter Written Expressly for this publication by Professor Bordet. First Edition. First Thousand. New York: John Wiley & Sons, 1909. (Price, \$6.)

Eisendrath, Daniel N.—Surgical Diagnosis. Second Edition. Thoroughly Revised and Enlarged, with 574 Original Illustrations, Twenty-five of them in Colors. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 885. (Price, \$6.50.)

Uhlenhuth, P., und Weidanz, O.—Praktische Anleitung zur Ausführung des biologischen Eiweissspezifischerungsverfahrens mit besonderer Berücksichtigung der forensischen Blut- und Fleischuntersuchung, sowie der Gewinnung präzipitierender Sera. Mit 38 Figuren im Text. Jena: Gustav Fischer, 1909. Pp. iv-246. (Price, 6.50 M.)

Aufrecht, E.—Zur Pathologie und Therapie der Arteriosklerose. Wien und Leipzig: Alfred Holder, 1910. Pp. 47. (Price, 1.20 M.)

Garreau, Edgar.—Tumors of the Kidney. Renal. Ure-

teral, Perirenal, and Adrenal Tumors, and Actinomycosis and Echinococcus of the Kidney. With Seventy-two Illustrations in the Text. New York and London: D. Appleton & Co., 1909. Pp. xiii-421.

Harbaugh, Charles Hamilton.—Causes of Disability as Applied Under Accident and Health Insurance Policies. With Special Chapters on Policy Forms, Advantages of Examining for Accident Insurance Companies, Necessary Qualifications for Successful Examiners, Method of Making Examinations, etc. Designed for the Use of Insurance and Fraternal Examiners, General Practitioners, and Students of Medicine, Attorneys, and Corporations. Illustrated with 123 Half Tones and Fifteen Full Page Plates, Eleven in Colors. New York: The Spectator Company, 1909. Pp. xvi-650. (Price, \$6.)

Butler, Glentworth Reeve.—The Diagnostics of Internal Medicine. A Clinical Treatise upon the Recognized Principles of Medical Diagnosis. Prepared for the Use of Students and Practitioners of Medicine. With Five Colored Plates and Two Hundred and Seventy-five Illustrations and Charts in the Text. Third, Revised Edition. New York and London: D. Appleton & Co., 1909. Pp. xxxiv-1193. (Price, \$6.)

Chapin, Henry Dwight, and Pisek, Godfrey Roger.—Diseases of Infants and Children. With 179 Illustrations and Eleven Colored Plates. New York: William Wood & Co., 1909. Pp. xv-609. (Price, \$4.50.)

Fein, Johann.—Rhino- und Laryngologische Winke für praktische Aerzte. Mit 40 Textabbildungen und 2 Tafeln. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. vi-191.

Greiff, Richard.—Atlas of External Diseases of the Eye. For Physicians and Students. Only Authorized English Translation, by P. W. Shedd, M. D., New York. With Eighty-four Illustrations in Color from Wax Models printed on Fifty-four Plates with Explanatory Text. The Illustrations are from Models in the Pathologic Institute in Berlin. New York: Rebman Company, 1909. Pp. 140.

Walton, George Lincoln.—Those Nerves. Philadelphia and London: J. B. Lippincott Company, 1909. Pp. 203.

McCurdy, Stewart L.—Arthrosteopædic Surgery (Extremities and Skeleton). Pittsburgh: Medical Abstract Publishing Company, 1909. (Price, \$1.)

Stewart, Acheson.—Visceral Surgery in Abstract. Pittsburgh: Medical Abstract Publishing Company, 1909. (Price, \$1.)

Ritchie, John W.—Primer of Sanitation. Being a Simple Work on Disease Germs and How to Fight Them. Illustrated by Karl Hassmann. Yonkers, N. Y.: World Book Company, 1909. Pp. vi-200.

Hausmann, Theodor.—Die methodische Intestinalpalpation mittels der topographischen Gleit- und Tiefenpalpation und ihre Ergebnisse. Mit Einschluss der Ileocolicæalgegend und mit Berücksichtigung der Lageanomalien des Darnes. Mit neun Abbildungen im Text und zwei Tafeln. Berlin: S. Karger, 1910. Pp. 158.

Transactions of the American Dermatological Association at its Thirty-second Annual Meeting held in Annapolis, Maryland, September 24th and 25th, and in Baltimore on September 26, 1908. Official Report of the Proceedings by Grover W. Wende, M. D., Secretary, 1907.

Annual Report of the Board of Health of the Department of Health of the City of New York for the Year ending December 31, 1907. Pp. 87.

Bibliography of the Contributions of George M. Gould, M. D., to Ophthalmology, General Medicine, Literature, etc. Ithaca, N. Y.: Andrus & Church, 1909. Pp. 62.

Transactions of the American Otological Society. Forty-second Annual Meeting, held at the Harvard Medical School, Boston, Mass., June 1 and 2, 1909. Volume XI. Part II. Published by the Society, 1909. Pp. x-572.

Robertson, T. Brailsford.—The Proteins. The University of California Publications in Physiology. Berkeley, Cal., 1910.

Bainbridge, William Seaman.—The Enzyme Treatment for Cancer. A Scientific Report on Investigations with Reference to the Treatment of Cancer. Published with the Authority of the Committee on Scientific Research of the New York Skin and Cancer Hospital. No. 1. New York, 1910. Pp. 34.

Arnold, H. D.—Medical Diet Charts. Philadelphia and London: W. B. Saunders Company, 1909. (Price, Single charts, 5 cents; 50 charts, \$2; 500 charts, \$18; 1,000 charts, \$35.)

Marie, Auguste Armand.—La psychologie morbide collective. 1 vol. Cartonné toile. Paris: Masson et cie, 1909. (Price, 3 fr.)

Spindler, Henri.—Les Amétropies et leur correction. Avec 58 figures dans le texte. Paris: Masson et cie, 1909. (Price, 3 fr.)

Le Play, Albert, et Mesureur, André.—Précis d'hygiène. Préface par le professeur Landouzy. Paris: Masson et cie, 1909. Pp. ix-72. (Price, 1 fr.)

Veau, Victor.—Pratique courante et chirurgie d'urgence. Troisième édition, revue. Avec 333 figures. Paris: Masson et cie, 1909. (Price, 4.50 fr.)

Geraudel, Emile.—Parenchyme hépatique et bourgeon biliaire. Avec 89 figures dans le texte. Paris: Masson et cie, 1909. Pp. ix-527. (Price, 15 fr.)

Landouzy, L.—Cent ans de phthisiologie (1808-1908). Notice historique. Avec figures. Paris: Masson et cie, 1909. (Price, 2 fr.)

Binet, Alfred.—L'Année psychologique. Quinzième année. Avec la collaboration de Lagueur des Bancel, Dr. Troisième édition, revue. Avec 333 figures. Paris: Masson et cie, 1909. Pp. xii-496. (Price, 15 fr.)

Calmette, A.—Recherches sur l'épuration biologique et chimique des Eaux d'Egout effectuées à l'Institut Pasteur de Lille et à la station expérimentale de la Madeleine. Avec la collaboration de E. Rolants, E. Boullanger, F. Constant et L. Massol. Quatrième volume. Avec 18 figures et 12 graphiques dans le texte et 5 planches hors texte. Paris: Masson et cie, 1909. Pp. iv-214. (Price, 8 fr.)

Emery, E., et Chatin, A.—Thérapeutique clinique de la syphilis. 1 vol. Paris: Masson et cie, 1909. Pp. viii-639. (Price, 10 fr.)

Held, Hans.—Die Entwicklung des Nervengewebes bei den Wirbeltieren. Mit 275 Figuren auf 53 Tafeln. Leipzig: Johann Ambrosius Barth, 1909. Pp. 378. (Price, 30 M.)

Schatz, Friedrich.—Menstruelle und menstruationsähnliche Blutungen nach der Empfängnis und nach der Entbindung in der ersten Zeit der Schwangerschaft und des Wochenbettes. Nr. 518, Sammlung klinischer Vorträge. Leipzig: Johann Ambrosius Barth, 1909. Pp. 32.

Von Kubinyi, Paul.—Ueber die Inkazeration der retrodivierten schwangern Gebärmutter und des konsekutiven Blasengrängar. No. 519, Sammlung klinischer Vorträge. Leipzig: Johann Ambrosius Barth, 1909. Pp. 33.

Roth, A.—Scheppren nach Snellen's Prinzip. Zweite Auflage, Teil I, fünf Tafeln mit vier Textbeilagen. Teil II, zwei Tafeln. Leipzig: Georg Thieme, 1909.

Eulenberg, Albert.—Real Encyclopädie der gesamten Heilkunde. Medizinisch-chirurgisches Handwörterbuch für praktische Aerzte. V. Band. Fieber-Göbersdorf. Mit 68 Abbildungen im Texte, acht schwarzen und sechs farbigen Tafeln. Vierte, gänzlich umgearbeitete Auflage. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. 937.

Von Nottthoff, Albrecht.—Taschenbuch der Untersuchungsmethoden und Therapie für Dermatologen und Urologen. Fünfte, vielfach umgearbeitete und verbesserte Ausgabe. Leipzig: Max Gelsdorf, 1908. Pp. 280.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of, and deaths from, smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending November 10, 1909.

Places	Date	Cases	Deaths
California—Sacramento	Oct. 17-21	1	1
Georgia—Macon	Oct. 30-Nov. 6	1	1
Illinois—Danville	Oct. 10-Nov. 6	2	2
Kansas—Kansas City	Oct. 10-Nov. 6	1	1
Kentucky—Lexington	Oct. 24-30	1	1
Minnesota—Duluth	Oct. 10-Nov. 6	1	1
Mississippi—Holly Springs	Oct. 30-Nov. 6	3	3
Montana—Butte	Oct. 15-21	7	7
Tennessee—Memphis	Oct. 30-Nov. 6	3	3
Texas—Lubbock Pass	Oct. 24-30	3	3
Washington—Bellingham	Oct. 24-30	2	2
Wisconsin—La Crosse	Oct. 30-Nov. 6	1	1
Wisconsin—Menomonie	Oct. 30-Nov. 6	6	6

Places	Date.	Cases.	Deaths.
<i>Smallpox—Foreign</i>			
Argentina—Buenos Aires.....	Aug. 1-31.....	23	1
China—Shanghai.....	Sept. 27-Oct. 3.....	2	1
Chile—Valparaiso.....	Oct. 9-10.....	2	1
Gibraltar.....	Oct. 18-24.....	1	1
Hungary—Budapest.....	Oct. 3-9.....	1	1
Italy—General.....	Oct. 18-24.....	58	1
Italy—Naples.....	Oct. 18-24.....	9	1
Mexico—Acapulco.....	Oct. 19-25.....	1	1
Mexico—Medellin.....	Oct. 31.....	1	1
Mexico—Orizaba.....	Oct. 31.....	1	1
Mexico—Puebla and present along the lines of railroad.....	Oct. 31.....	Present	3
Mexico—Veracruz.....	Oct. 24-31.....	2	1
Spain—Málaga.....	Oct. 17-23.....	Present	3
Philippine Islands—Iloilo.....	July 1-Aug. 31.....	437	112
Russia—Warsaw.....	Sept. 12-18.....	9	1
Spain—Barcelona.....	Oct. 19-25.....	1	1
Spain—Valencia.....	Oct. 17-23.....	1	1
Turkey—Izmir.....	Oct. 17-23.....	Present	1
Turkey—Bagdad.....	Sept. 17-23.....	Present	1
Turkey—Constantinople.....	Oct. 18-24.....	Present	1
<i>Cholera—Foreign</i>			
China—Amoy.....	Sept. 26-Oct. 9.....	65	3
China—Kulsungu.....	Sept. 26-Oct. 2.....	3	1
China—Shanghai.....	Sept. 26-Oct. 2.....	Present	1
India—Bombay.....	Oct. 9-12.....	3	1
India—Calcutta.....	Sept. 26-Oct. 2.....	3	1
India—Negapatam.....	Sept. 11-17.....	3	1
Java—Batavia.....	Sept. 26-Oct. 2.....	17	3
Yokohama.....	Oct. 26.....	289	98
Japan—Mojri.....	Oct. 16.....	4	1
Japan—Shinkoku (island)— Matsuyama.....	Oct. 20.....	Present	1
Japan—Vankar.....	Oct. 20.....	Present	1
China—Chenulpo.....	Sept. 28-Oct. 9.....	Present	1
Korea—Pyong Yang.....	Sept. 28-Oct. 9.....	Present	1
Korea—Seoul.....	Sept. 19-28.....	1072	681
Manchuria—Daly.....	Oct. 3-9.....	1	1
Netherlands—Utrecht (province) —Jaarsfeld.....	Oct. 20.....	1	1
Philippine Islands—Manilla.....	Sept. 12-Oct. 9.....	73	28
Philippine Islands—Provinces.....	Sept. 12-Oct. 9.....	1004	74
China—General.....	Oct. 3-10.....	571	54
Russia—St. Petersburg.....	Oct. 17-22.....	116	35
<i>Yellow Fever—Foreign</i>			
Ecuador—Guayaquil.....	Oct. 1-15.....	13	4
<i>Plague—Foreign</i>			
British East Africa—Kismu.....	July 10-Aug. 24.....	12	12
Chile—Antofagasta.....	Oct. 16.....	Present	1
Chile—Iquique.....	Oct. 16.....	Present	1
Chile—Mejillones.....	Oct. 16.....	Present	1
China—Amoy.....	Sept. 26-Oct. 9.....	71	1
Ecuador—Guayaquil.....	Oct. 1-15.....	16	1
India—General.....	Sept. 26-Oct. 2.....	4377	3,490
India—Bengal.....	Sept. 26-Oct. 2.....	48	31
India—Bombay.....	Sept. 22-28.....	24	24
India—Calcutta.....	Sept. 26-Oct. 2.....	11	1
India—Rangoon.....	Sept. 26-Oct. 2.....	5	1
Japan—Kobe.....	Oct. 3-10.....	28	21
Japan—Shinko (island)—Kochi.....	Oct. 20.....	Present	1
Japan—Matsuyama.....	Oct. 20.....	Present	1

*Epidemic along the Yalu River.

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending November 17, 1909:

BAILEY, C. A., Acting Assistant Surgeon. Directed to proceed to St. John, N. B., on or about November 23, 1909, for medical examination of aliens.

BRINCKERHOFF, W. R., Assistant Director, Leprosy Investigation Station. Granted thirty days' leave of absence from December 2, 1909.

BRYAN, WILLIAM M., Assistant Surgeon. Granted thirty days' leave of absence from November 27, 1909.

CHENEY, E. L., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from November 16, 1909.

COBB, J. O., Surgeon. Granted one day's leave of absence, November 11, 1909, on account of sickness.

CORPUS, G. M., Passed Assistant Surgeon. Granted five days' leave of absence from November 12, 1909.

DEBROSE, R. E., Passed Assistant Surgeon. Directed to report to the medical officer in command at San Francisco, Cal., for duty and assignment to quarters.

FOX, CARROLL, Passed Assistant Surgeon. Granted ten days' leave of absence en route to station.

FRANCIS, EDWARD, Passed Assistant Surgeon. Granted two days' leave of absence while en route to places mentioned in department orders of November 9, 1909.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Directed to proceed to Mexico City, Mexico, upon special temporary duty.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted five days' leave of absence from November 18, 1909.

HUNT, REID, Chief, Division of Pharmacology, Hygienic Laboratory. Detailed to attend the meeting of the Council on Pharmacology and Chemistry of the American Medical Association, to be held in Chicago, Ill., November 12 and 13, 1909.

LAVINDER, C. H., Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the Chicago Medical Society, to be held in Chicago, Ill., November 24, 1909.

LLOYD, B. J., Passed Assistant Surgeon. Granted five days' leave of absence from October 19, 1909.

MACAFFRY, W. B., Acting Assistant Surgeon. Granted two days' leave of absence in October, 1909, under paragraph 210, Service Regulations.

MILLER, CHARLES, Pharmacist. Leave of absence for thirty days from September 30, 1909, amended to read twenty-seven days from September 30, 1909.

OSBORN, J. L., Pharmacist. Relieved from duty at Boston, Mass., and directed to proceed to the Savannah Quarantine Station, Ga., and report to the medical officer in command for duty and assignment to quarters.

PARKER, H. B., Passed Assistant Surgeon. Directed to report at the Bureau November 19, 1909, upon special temporary duty.

RANSOM, S. A., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 11, 1909.

RODMAN, J. C., Acting Assistant Surgeon. Granted five days' leave of absence from November 17, 1909.

RYDER, L. W., Pharmacist. Granted four days' leave of absence from November 8, 1909, under paragraph 210, Service Regulations.

SIMONSON, G. T., Acting Assistant Surgeon. Granted two days' leave of absence from November 16, 1909.

STILES, CH. W., Chief, Division of Zoology, Hygienic Laboratory. Detailed to attend the meeting of the New Jersey Sanitary Association, to be held in Lakewood, N. J., December 3 and 4, 1909.

WERTENBAKER, C. P., Surgeon. Directed to report at the Bureau November 15, 1909, upon special temporary duty.

WILBERT, MARTIN I., Technical Assistant, Hygienic Laboratory. Detailed to attend the meeting of the Council on Pharmacology and Chemistry of the American Medical Association, to be held in Chicago, Ill., November 12 and 13, 1909.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Cal., for the purpose of making a physical examination of two officers of the Revenue-Cutter Service. Detail for the board: Surgeon James M. Gassaway, chairman; Assistant Surgeon S. C. Hotchkiss, recorder.

Board of medical officers convened to meet at Astoria, Ore., for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Passed Assistant Surgeon J. M. Holt, chairman; Acting Assistant Surgeon Jay Tuttle, recorder.

Board of medical officers convened to meet at the Marine Hospital, Key West, Fla., for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon E. K. Sprague, chairman; Acting Assistant Surgeon S. D. W. Light, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 20, 1909:

ADAIR, GEORGE F., First Lieutenant, Medical Reserve Corps. Relieved from duty in present station; will proceed on February 5th from San Francisco, Cal., for Philippine service.

BARNEY, FRED M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Myer, Va., and ordered to Fort Clark, Tex., for duty.

BROWN, IRA C., First Lieutenant, Medical Reserve Corps. Ordered to proceed at the expiration of present leave of absence to Fort Lawton, Wash., for duty.

CAMPBELL, GEORGE F., First Lieutenant, Medical Reserve Corps. Granted leave of absence for three months.

CHASE, ALPHA M., First Lieutenant, Medical Reserve Corps. Relieved from duty in present station; will proceed February 5th from San Francisco, Cal., for Philippine service.

EWUREEL, GEORGE M., Captain, Medical Corps. Relieved from duty in Philippines Division; will sail February 15th for San Francisco, Cal.

ELIOT, HENRY W., First Lieutenant, Medical Reserve Corps. Relieved from further duty in the Philippines Division, and ordered to proceed at the expiration of present leave of absence to Fort McKinley, Me., for duty.

EWING, CHARLES B., Major, Medical Corps. Retired from active service, having been found disqualified for promotion.

HARRIS, JESSE R., Captain, Medical Corps. Granted sick leave of absence for three months.

HILL, EDEEN C., First Lieutenant, Medical Corps. Granted sick leave of absence for twenty-one days.

HOWARD, DEANE C., First Lieutenant, Medical Corps. Relieved from duty in Philippines Division; will sail February 15th for San Francisco, Cal.

JARRETT, ARTHUR R., First Lieutenant, Medical Reserve Corps. Granted leave of absence to December 29th.

KEEFER, FRANK R., Major, Medical Corps. Granted leave of absence for one month, seven days.

KELLER, WILLIAM L., Captain, Medical Corps. Relieved from duty in Philippines Division; will sail February 15th for San Francisco, Cal.

KENDALL, WILLIAM P., Major, Medical Corps. When relieved at Fort Ethan Allen, Vt., will proceed to Fort Riley, Kans., for duty.

KENNEDY, JAMES S., First Lieutenant, Medical Reserve Corps. Relieved from duty in present station; will proceed February 5th from San Francisco, Cal., for Philippine service.

LAMB, WILLIAM P., First Lieutenant, Medical Reserve Corps. Resignation accepted, to take effect November 18th.

LYSTER, THEODORE C., Major, Medical Corps. Relieved from duty with the Isthmian Canal Commission December 22d; will proceed to the United States for orders.

LYSTER, WILLIAM J. L., Major, Medical Corps. Ordered from San Francisco, Cal., to Fort Oglethorpe, Ga., for duty.

MCCALLUM, FRANCIS M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Schofield Barracks, H. T., and will proceed to San Francisco, Cal., on transport leaving Manila, P. I., February 15th.

MAGUIRE, DANIEL F., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will proceed to Fort Myer, Va., for duty.

NORRIS, HENRY C. R., First Lieutenant, Medical Reserve Corps. Ordered to active duty, and will proceed to Vancouver Barracks, Wash., for duty.

DE NIEDMAN, WILLIAM F., First Lieutenant, Medical Reserve Corps. Relieved from duty in present station, and will proceed February 5th from San Francisco, Cal., for Philippine service.

RICHARDSON, WILLIAM H., First Lieutenant, Medical Reserve Corps. Relieved from duty in Philippines Division, and will sail February 15th for San Francisco, Cal.

THORNBURGH, ROBERT M., Captain, Medical Corps. Order for duty at Army General Hospital, San Francisco, Cal., revoked.

WILSON, JAMES S., Major, Medical Corps. Order for duty at Military Prison, Alcatraz Island, Cal., revoked; will proceed at the expiration of present leave of absence to Fort Ethan Allen, Vt., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 20, 1909.

ANGENY, G. L., Surgeon. Ordered to the Naval Recruiting Station, Baltimore, Md.

CLEWELL, I. M., Surgeon. Detached from the Naval Academy and ordered to duty in connection with fitting out the *Solace* and to duty on board that vessel when placed in service.

BRISTER, J. M., Passed Assistant Surgeon. Ordered to the Naval Academy.

CLARK, G. F., Assistant Surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to duty in connection with fitting out the *Solace* and to duty on board that vessel when placed in service.

GARTON, W. M., Surgeon. Detached from the *Ohio* and ordered to the Naval Hospital, Norfolk, Va.

HEINER, R. G., Passed Assistant Surgeon. Detached from the *Albany* and ordered to the Navy Yard, Mare Island, Cal.

HOLCOMB, R. C., Surgeon. Detached from the Naval Hospital, Norfolk, Va., and to duty in connection with fitting out the *Solace* and to duty on board that vessel when placed in service.

MCDONNOLD, P. E., Passed Assistant Surgeon. Detached from the Naval Academy and granted sick leave for three months.

PICKRELL, G., Surgeon. Detached from duty in connection with fitting out the *Solace* and ordered to command that vessel when placed in service.

SCHMIDT, L. M., Assistant Surgeon. Detached from the Navy Yard, Charleston, S. C., and ordered to duty in connection with fitting out the *Solace* and to duty on board that vessel when placed in service.

SCOTT, T. W., Pharmacist. Detached from duty in connection with fitting out the *Solace* and ordered to duty on board that vessel when placed in service.

STREETS, T. H., Medical Director. Placed on the retired list from November 20, 1909; detached from duty as a member of the Naval Retiring Board, Washington, D. C., and ordered home to await orders.

VICKERY, E. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to duty in connection with fitting out the *Solace* and to duty on board that vessel when placed in service.

Births, Marriages, and Deaths.

Married.

FREUND-GOLDSMITH.—In Detroit, Michigan, on Tuesday, November 9th, Dr. Hugo A. Freund and Miss Hortense Goldsmith.

GRENFELL-McCLANAHAN.—In Chicago, on Thursday, November 18th, Dr. Wilfred T. Grenfell and Miss Anna E. McClanahan.

Died.

BARR.—In Ottawa, Canada, on Friday, November 19th, Dr. John Barr, of Dufferin, aged sixty-two years.

BARTLETT.—In New York, on Monday, November 15th, Mrs. Eleanor Brooks Pearson Bartlett, wife of Dr. Frederick H. Bartlett, aged forty-one years.

BECKWITH.—In Cleveland, Ohio, on Friday, November 19th, Dr. D. H. Beckwith, aged eighty-five years.

BELL.—In Yonkers, N. Y., on Monday, November 15th, Dr. William A. Bell, aged fifty-six years.

BURGIS.—In Pittsburgh, Pennsylvania, on Saturday, November 13th, Dr. Thomas C. Burgis, aged sixty-one years.

BURNISON.—In Des Moines, Iowa, on Monday, November 8th, Dr. Samuel F. Burnison, aged sixty-three years.

CLARKE.—In Los Angeles, California, on Thursday, November 11th, Dr. G. Morgan Clarke, aged sixty-three years.

CONGDON.—In Springfield, Massachusetts, on Thursday, November 4th, Dr. Lemier Congdon, aged seventy-four years.

COTTEN.—In Raleigh, North Carolina, on Wednesday, November 10th, Dr. A. T. Cotten, aged sixty-five years.

CUTTER.—In Somerville, Massachusetts, on Thursday, November 11th, Dr. Charles K. Cutter, aged fifty-eight years.

HARRIS.—In Norwich, Connecticut, on Wednesday, November 3d, Dr. George R. Harris, aged forty-four years.

HATFIELD.—In Chicago, on Thursday, November 11th, Dr. Marcus Patten Hatfield, aged sixty years.

McLAUGHLIN.—In Philadelphia, on Thursday, November 11th, Dr. Dennis McLaughlin.

MOORE.—In Calumet, Michigan, on Monday, November 8th, Dr. J. W. Moore.

RICKARD.—In Weeping Water, Nebraska, on Monday, November 8th, Dr. E. T. Rickard, aged forty years.

SPRAGUE.—In Providence, Rhode Island, on Wednesday, November 17th, Dr. Francis B. Sprague, aged forty-four years.

WHITAKER.—In Utica, Mississippi, on Saturday, November 6th, Dr. P. R. Whitaker, aged seventy years.

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THE INFLUENCE OF DIET ON INFANTILE MORTALITY.*

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The excessive mortality in early life has long been a source of anxiety and even of self reproach to the medical profession. The death rate of infants in the first year of life reaches far too high a figure, when we consider that we are dealing, not with disease, but with individuals born, at least most of them, in good health and with apparently no reason why they should not continue so. A rough estimate has given the average death rate in the first year at about eighteen in every one hundred infants born, varying somewhat in different years and in different localities, or about one fourth of the total mortality for all ages. In France, from 1896 to 1900, according to Budin (*Annales de médecine et de chirurgie infantiles*, vii, p. 181, 1903), 134,434 infants under one year died, a percentage of 20.2. The United States Census for 1900 gave in the registration area a death rate of 18.28 per cent.

Further examination of statistics shows that an unusual proportion of deaths in the first year are due to digestive disturbances. Thus, in Berlin, there died yearly from 1897 to 1901 inclusive, according to the statistics of Heimann (quoted in *Jahrbuch für Kinderheilkunde*, lxi, p. 500, 1905), an average of 10,993 infants under one year of age, and over one third of these suffered from digestive diseases; more than 3,500 infants less than one year old dying yearly from this cause. Other statistics equal or exceed these figures. It is to be noted, moreover, that many deaths registered under other titles are, in reality, dependent upon digestive disturbances. This is true, for instance, of the term "convulsions," a very frequently assigned cause of death in statistical reports.

All this points in but one direction, namely, to the influence of diet upon infantile mortality, since digestive diseases depend, almost always, upon faults in feeding. Infants properly fed are likely to live; those improperly fed are placed in jeopardy.

There is but one truly proper feeding, i. e., suitable breast milk given in a suitable manner. Not every breast milk is suitable. There is a decided

normal range in composition of the milk, as well as an abnormal range, and the food upon which one infant may thrive, may not answer at all for another. Yet the fact that breast fed infants, as a class, have a much greater chance of living than those artificially fed is proved beyond doubt by statistical studies. We find, for instance, that of 4,000 infants dying in Munich in 1903, eighty-three per cent. were artificially fed (quoted by Wile, *Pediatrics*, xxi, p. 203, 1909). In Berlin in a period of five years only nine per cent. of the infant mortality occurred in breast fed babies (Graham, *Journal of the American Medical Association*, li, p. 1045, 1908). In 1,000 children studied by Armstrong (*British Journal of Children's Diseases*, March 1904, p. 115) but 8.418 per cent. of those wholly breast fed died in the first year, against 22.826 per cent. of those wholly bottle fed. The studies of Tugendreich (*Archiv für Kinderheilkunde*, xlviii, p. 390, 1908) are of especial interest. In 388 breast fed children in sixty-four families there had been seventy-seven deaths, a mortality of 19.8, while in 229 bottle fed children in thirty-three families, ninety-nine had died, a mortality of 43.2 per cent. Twenty-four of the sixty-four families, with 109 exclusively breast fed children, had not lost a single child, while not one of the thirty-three families with exclusively bottle fed children had escaped without a death. In twenty-nine families some eighty-five of the infants had been breast fed and some 109 bottle fed; none of the first class were dead, but one half of the second class.

With our present knowledge there are reasons why an artificial food in general can never be made the equivalent of breast milk, no matter how accurately the percentage composition of it may be made to simulate that of the natural supply. There are inherent chemical contrasts in the ingredients which cannot be overcome. The proteids are distinctly different: the fats very decidedly so; the sugars also probably not the same. Perhaps still more important is the presence in human milk of certain ferments, alexines, antibodies, and other substances studied by Spolverini, Moro, and many others, many of them different from those in cow's milk. The function of these substances is little understood, but that they play an important rôle is beyond question. It is possibly through their influence that an infant can sometimes be made to thrive if only it is given daily one or two nursings from the breast. Something imbibed in this way appears to render the cow's milk more readily absorbable by the infant's digestive tract.

*Read before the Conference on Prevention of Infant Mortality, St. Louis, November 11, 1909.

Physicians welcome with joy the apparently increasing desire of mothers to nurse their own children, since for a period of years there seemed to be, certainly in some localities, a steady diminution in the number of babies who were breast fed. Thus Neumann (*Deutsche medizinische Wochenschrift*, xxviii, p. 795, 1902) found that in Berlin in 1885, 55.2 per cent. of the infants were fed at the breast, while in 1890 but 31.4 per cent. were so fed. Yet the custom is still too prevalent of weaning without due consideration and for very slight excuses. One mother of my acquaintance refused to attempt to nurse because, she said, she had never been able to nurse her other children. Yet she had milk in her breasts and I did not doubt that it was lack of desire which was her real reason, rather than lack of milk. Another weaned her infant abruptly in order to attend the funeral of a relative in another city. Mothers alone are not to be blamed for this jeopardizing of the infant's life. Physicians are far too ready to advise weaning because there appears to be some difficulty, often only temporary, in the digestion by the infant of the maternal supply. Some monthly nurses, too, have a strange desire to see the infants weaned. In one instance such a nurse surreptitiously fed the baby upon a cream and water mixture until the child, preferring this mixture, refused to take breast milk, although there was an abundance of it. A very interesting recent publication by Keller (*Wiener klinische Wochenschrift*, xxii, p. 635, 1909) illustrates this well. This writer studied the histories of 1,300 children in Vienna, coming to the out patient department of the hospital. Of these 278 (21.4 per cent.) had never been nursed at all, often through the advice of a physician or midwife. The reasons assigned by the mothers were very curious and characteristic. Among these we note "too weak," "too ill," "too young," "too old," "husband unwilling," "no milk," or "too little milk," yet without having put the child to the breast: "would not take the breast," yet admitting that no trial had been made; "breast tender," yet nursing had not been attempted. It was only perfectly certain in 0.8 per cent. that the mother could not have nursed her child.

The studies of Mme. Dluski (*Thèse de Paris*, 1894, quoted by Marfan, *Revue mensuelle de maladies de l'enfance*, xx, 11, 1894) upon 500 women in the maternity department of Professor Pinard in Paris, yielded much the same result, it appearing that ninety-nine per cent. could nurse their infants, either from the beginning of the establishment of lactation or after a shorter or longer interval.

I have dwelt at length on this part of my subject, because to my mind it is one of the most important. Undoubtedly a great many deaths could be prevented by a greater persistence on the part of the mother in nursing, or by greater willingness to employ a wet nurse. I realize to the full all the family and personal inconveniences of wet nursing, but there are frequent instances where a fatal ending could have been avoided by the prompt employment of this method.

The influence of artificial feeding upon infantile mortality has already been indicated in the comparisons I have made. The high mortality from gastrointestinal disease prevails especially in bottle

fed infants. So, too, the influence of excessively hot weather is seen almost entirely in bottle fed infants. The diet is a factor in causation of death, first, through its *composition*. Faulty cow's milk mixtures have much to do with it. There is too much rule of thumb work and too little attention to the needs of the individual child. The pernicious custom is widely spread of giving every infant a formula of a certain strength because it has reached a certain age; or a physician devises a formula easy to remember and gives it to all children *because* it is easy to remember, not because it suits the individual. Too little study is given to the effects of the different ingredients of the milk mixture. More infants are overfed than underfed, and the overfeeding, beginning as it does in the early weeks of life, rapidly produces digestive disturbances which are frequently fatal.

Clinical experience has convinced many of the especial indigestibility of the fat of the food, the proteids being much less harmful than had been previously supposed. The subject has been studied from a scientific standpoint, especially by Finkelstein in a series of articles. In this connection I may refer to the calorimetric method of feeding which has come into prominence in recent years. The estimation of the number of heat units in the food mixture will enable us to determine at once whether the nourishment is in excess or deficient for the actual needs of the infant. The method does not, however, help us in any way to determine how well suited to the digestive power of a certain infant any one of the separate food ingredients may be.

The faults in composition mentioned apply still more to the numerous proprietary foods on the market. Although these foods have unquestionably saved life, they are, I truly believe, one of the most fertile sources of infantile mortality. Not only is the composition of most of them extremely faulty, but they are advised and given on the faulty principle of one food to suit many infants. If the physician, with all his care and personal observation, finds the feeding of one sick baby difficult, how is it to be expected that the manufacturers of Blank's patent food can feed thousands of infants of whom they personally know nothing. The patent food is the boon of the lazy doctor, the bane of the suffering infant.

Perhaps even more important than the composition of the food is its *decomposition*. Bacterial growth is a prolific death producer in infant life. Hot weather, apart from its directly harmful, depressing effect upon the infant, is especially injurious through the great impetus which it gives to the increased growth of bacteria. There is, perhaps, no better culture medium for germs than is milk; no medium from which it is more difficult to remove germs entirely. It is to be borne in mind that it is not so much the souring of milk which is harmful through the growth of germs producing lactic acid, as it is the effect of microorganisms of other sorts. The fallacy is evident, then, of the belief which many mothers have that tasting the contents of the bottle before it is given to the baby will, in any way, determine its fitness as food. Taste will not detect the presence of the more dangerous microbes. It is to be remembered, too, that it is not the germs them-

selves which kill the infant, but their action upon the milk, and the poisonous substances, the toxins, produced by them. Sterilization and pasteurization, which are useful in killing the organisms and stopping further production of toxins, do not destroy those already produced to any considerable extent. They cannot make bad milk good; they merely prevent it from getting worse.

Clean milk is, then, one of the great desiderata for the prevention of mortality due to diet, and very much has already been gained by efforts made in this direction. In many cities commissions have arisen for the supervising of especial dairies, in the effort to obtain milk as nearly germ free as possible, and the public are slowly but surely awakening to the benefit which accrues. The commission of Newark, N. J., was the first of these, and that of Philadelphia the first which threw open certification to any dairy able to meet the requirements. In some cities the health authorities have interested themselves in the obtaining of cleaner milk for the whole municipality. This is as it should be, and the results have been most encouraging. In Rochester, according to Still (*Practitioner*, February 21, 1905), the mortality under one year has been reduced sixty-five per cent. since the introduction of the carefully guarded municipal milk supply. Park and Holt (*Pædiatrics*, December, 1903), in a very extensive investigation among the poor of New York city, proved that diarrhœa was much more common in store milk infants than those receiving clean milk of higher grade. This was particularly true in summer weather, showing that the bad results came from the greater bacterial growth taking place in the milk at that season.

In France the average infantile mortality in ten years was reduced from 167 per mille to 137 per mille, largely through the more careful supervision of the milk supply, and the watching of the individual infant in the *gouttes de lait*, which have been so productive of good.

It should be noted, however, as Carpenter (*British Journal of Children's Diseases*, April, 1904) has well pointed out, that municipalities are no more suited to select the food for the individual infant than are proprietary food venders. The formula to be employed should be selected in every case by the physician under whose care the infant shall remain.

It is evident, then, that upon the line of procuring "clean milk" our energies should be largely expended. Much has been done; much more can be done. The public must be instructed, the poor, especially, taught the need of clean milk and the proper method of its employment. Milk dispensaries properly managed, district nursing, direct teaching of the mothers, will all aid in raising the palace of infantile health, founded upon the cornerstone of a clean milk supply.

A few words more about the sterilization and pasteurization of milk. This is a matter upon which much experimental study has been expended. It is probable that prolonged heating at high temperature destroys many of the ferments, and likewise alters the digestibility of the proteids by its action upon the lime salts. It has been shown, however, that at least many of the ferments and other bodies are not affected by pasteurization at proper temperature.

From a purely clinical standpoint there is no doubt that milk of poor quality is much more harmful raw than sterilized. I have, myself, little fear of the bad results attributed to heating as compared with the danger of milk rich in bacteria, and I believe that with all doubtful milk, and probably with all milk during the hottest weather, pasteurization is to be recommended. The sale of commercially sterilized and pasteurized milk is to be condemned. Robertson and Mair (*British Medical Journal*, 1894, i, p. 1122) found that only fifteen per cent. of all so called sterilized milk supplied by the Corporation of Leith, failed to develop growth of bacteria; and Pennington and McClintock (*American Journal of the Medical Sciences*, 1905, July), in Philadelphia, showed that trade pasteurized milk gave larger numbers of bacteria after twenty-four hours than did clean, raw milk;—in one instance reaching 46,000,000 to the c.c. Bergey (*Proceedings of the Pathological Society of Philadelphia*, viii, 102, 1905) and others have shown that pasteurized milk will develop dangerous bacteria more rapidly than will raw milk, the heat having destroyed the lactic acid germs, which, if left alive, check by their growth the development of the proteolytic varieties. Pasteurized milk is, then, valuable, but the necessity of care in its production and especially the care of the product afterward, is evident.

The terms "sterilized milk" and "pasteurized milk" on the milk wagon merely give the mother a false sense of security, even supposing that the process has been honestly and properly carried out by the dealer. All sterilization and pasteurization should be done at home. In the case of pasteurization it must be done accurately, either with a thermometer, or a special pasteurizer which will produce a predetermined temperature, and the milk must be kept constantly cold afterward. If these precautions are not followed, infantile mortality, dependent upon diet, may be increased rather than decreased.

1810 SPRUCE STREET.

THE IMMUNIZING TREATMENT OF HAY FEVER.*

By WILLIAM SCHEPPEGRELL, A. M., M. D.,
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The subject of hay fever is one of special interest, not only on account of the large number of persons subject to this affection, and the prolonged suffering which it causes, but also because heretofore the methods of treatment have generally been only palliative and otherwise unsuccessful.

My investigations of this subject date back four years and were at first confined entirely to the cause and pathology of the disease. In a city like New Orleans, we have the usual amount of dust, and the size of the city and the character of the surrounding country make it practically impossible to determine and isolate the special cause of this affection. In the suburbs of Hendersonville, North Carolina, however, where these investigations have been con-

*Read before the annual meeting of the Southern Medical Association at New Orleans, November 7-11, 1906.

ducted, the dust could be almost entirely eliminated and the various vegetations that might be responsible for hay fever could be studied in association with the development of the disease.

About two years ago the serum treatment was introduced and heralded with so much *éclat* that I temporarily abandoned this investigation in the hope that a successful treatment had been discovered. Personally, I could not understand the rationale of the treatment. As hay fever is due not to a special pathogenic germ but to a form of vegetable pollen which acts as a physiomechanical irritant on the eye and respiratory passage, and the resulting symptoms are not due to any absorption of a special germ into the system but to a simple inflammatory reaction and to disturbance of respiration due to the congested nostrils and its general effect on the nervous system, it was not probable that any serum treatment would be curative. Subsequent developments have proved this to be the case. Those of my patients who were benefited were so few that the results could easily be attributed to other causes, and laryngologists in general now report a similar experience. The method, moreover, was expensive, so as to be beyond the reach of the large majority of sufferers.

In seeking for a cure of this so common disease, it was my object to devise some method that would not only be effective, but could also be easily applied, and inexpensive enough to be within the reach of even the poorest. In order, however, to determine the most effective treatment it was of the first importance to decide the particular cause responsible for the development of this disease.

In my investigations in North Carolina, surrounding conditions were especially favorable for the study of hay fever. In the immediate vicinity there were large fields in which the various forms of weeds could be watched in their development, and their relation observed to the patients suffering from hay fever who formed the subject of these investigations.

The weed which formerly was held responsible for hay fever is the goldenrod. There were several varieties and large numbers of weeds in these fields. As their period of pollenization commenced about July 7th and continued until the plants were destroyed by freezing, it was quite natural that any patient in whom hay fever developed between July 3rd and October 5th, might blame the goldenrod for his affliction. In the patients, however, whom I had under observation hay fever developed in no instance in July in Henderson County, nor could the actual inhalation of the goldenrod pollen produce the well known symptoms.

* There is one feature in this disease which must not be overlooked in considering its aetiology. After the actual onset of the disease has developed, the mucous membrane of the nose becomes so highly sensitive that any irritation, such, for instance, as would ordinarily produce but slight effect, as smoke, dust, etc., will aggravate all the symptoms, and even the pollen of the goldenrod at this time will cause irritation.

The ragweed is one of the commonest in Henderson County, and while also found on the edge of

fields that have been abandoned, so that it is not uncommon to see many acres covered with ragweed growing as closely as an oat field. From August 15th to August 20th, depending upon the season, the upper part of the ragweed presents a whitish color, indicating that its pollen is becoming mature. A week later this color becomes a pale yellow, and the plant begins to distribute its pollen.

The peculiarity of the ragweed is that the stamina which supply the pollen and the pistils which form the seed are not on the same flower. The pistillate flowers grow between the opposite growing leaves and the stem, and the staminate flowers form a linear cluster at the end of the branches. In the conservation of nature, therefore, the plant has to supply a large amount of pollen, as the fertilization of the plant is not direct, but depends on insects and the effects of the wind. When, therefore, we consider this in connection with the enormous number of the plant, we can easily understand how the air may be completely charged with these fine particles of pollen.

So direct is the relation between the pollenization of the ragweed and the development of hay fever, that during the last three years I have been enabled to predict to a day the development of hay fever in the cases under observation. Occasionally a rain just at this time, by washing away the pollen, retarded the development for a day or two.

Not only was the development of the disease almost immediately consecutive to the pollenization of the ragweed, but the inhalation of a small amount of the pollen by patients who had been protected from this plant immediately resulted in a paroxysm of the disease.

As this is a preliminary report, it must be understood that I do not wish to affirm that the ragweed is responsible for every case of hay fever. In about eighty cases which I have observed with a view of ascertaining this it was the causal factor in every case as far as I could ascertain with exception of one case, which was undoubtedly due to the goldenrod.

Preparatory to explaining my method, I would state that I have not abandoned any of the statements, which I have formerly made, that an important feature in this as in other diseases of these parts, the nose and throat should first be placed as near as possible in a normal condition. Nasal spurs, hypertrophies, polypi or other growths, catarrhal conditions, etc., should first be corrected. These tend to maintain a condition of chronic irritation, which should be corrected, not only because they prolong the treatment of the hay fever, but also because they endanger the integrity of the ear and other neighboring parts and the system in general. My experience has been that in about fifteen per cent. of cases, such treatment alone has resulted in the entire prevention of the hay fever.

In order to understand the method of developing immunity in hay fever, we must first follow the clinical history of the ordinary development of this disease.

The pollen of the ragweed is not simply a mechanical irritant, like dust, as is usually supposed, but it contains a pungent aromatic compound which acts as an irritant on the nasal mucosa. When this

pollen is inhaled or comes in contact with the conjunctiva of the eye it produces an irritation causing sneezing, lachrymation, and a watery discharge from the nose. This is soon followed by a congestion of the mucous membrane, blocking the nasal passages, and impeding nasal respiration. While the nostril is in this irritated condition, the air, still charged with the pollen, now comes in contact with an irritated mucosa, and the symptoms become aggravated. An inflammation of the mucous membrane now supervenes, and the pollen coming in contact with this increases the symptoms in proportion to the inflamed condition of the mucous membrane. The nostrils being obstructed, nasal respiration becomes difficult or impossible, and this increases the general discomfort and the consequent disturbance of the nervous system.

In addition to the normal development of the symptoms, others arise due to medication. In order to relieve the symptoms, the majority of patients use some form of spray, the most of which contains cocaine or a solution of adrenalin,¹ and frequently both. While these preparations give temporary relief, they are invariably followed by a reaction, both as to congestion and irritation, and thus actually aggravate the pathological condition.

In the meanwhile, Nature attempts to develop a tolerance in such cases, beginning from the initial irritation. At first, however, this is so slight and the irritation so rapidly aggravated that for the first week it is without perceptible effect. During the second week, however, it begins to assert itself, and usually at the end of the second or third week it has balanced the irritation, so that the patient finds that although still suffering from the effects of hay fever, the disease has lost its initial violence, in spite of the fact that the air is now more charged with the pollen than during the inception of the attack. From this time the developed tolerance gradually increases, so that at the end of the fifth week many patients are comparatively comfortable, a larger number at the sixth week, and a considerable number recover entirely from the attack before the disappearance of the pollen from freezing.

Certain weather conditions influence the normal course of the disease as described. A continued rain, by washing the pollen from the air and the plant, temporarily brings about an amelioration of the symptoms, and a dry wind by blowing a large amount of pollen into the air and keeping it in suspension, increases the violence of the disease.

As a scientific basis for the prevention of hay fever, one of two conditions must be produced. We must either cause the entire disappearance of the plant which produces the causative factor of the disease, or we must artificially develop in patients susceptible to it that degree of tolerance which naturally exists in persons not suffering from hay fever.

A legislative enactment which would result in the destruction of all ragweed would be followed by the disappearance of hay fever from this cause, or about ninety-five per cent. of all cases. It is a weed, however, which not only grows on the edges of cultivated lands, where its destruction would not be difficult, but it likewise has a special predilection for

old fields which have once been cultivated. At this stage of our development, therefore, it would, perhaps, be impracticable to enforce such a law. In pasture land, moreover, it is freely eaten by cattle, and besides, in the economy of nature, it supplies potash to the soil very much as clovers and other leguminous plants supply nitrogen.

The alternative, therefore, is the development of an artificial tolerance to the irritating pollen in persons subject to hay fever. As already explained, such a tolerance is gradually developed in the progress of the disease. When the attack commences, however, the ragweed is already pollinating, and the air is so charged that it causes not only marked irritation of the mucous membrane, but also a considerable degree of inflammatory reaction as well as disturbances of the respiratory and nervous system, so that the effects of the tolerance is delayed for several weeks. The object of the treatment is to develop this tolerance before the inception of the attack, and thus establish an artificial immunity.

Having now explained its underlying principles, my method will be easily understood. As the staminate flowers of the ragweed contain its pollen, these are made use of. At a period of time varying from two to six weeks the pollen of the staminate flowers are inhaled by the patient. These inhalations are at first made two or three times a day, and later, as the time of the usual development of the disease approaches, more frequently. The inhalation is followed by a slight attack of sneezing, some lachrymation, and a watery discharge from the nose, and then a congestion of the mucous membrane of the nostril. As no inflammation exists, these effects are not disagreeable or painful, and ordinarily pass off in the course of an hour. If the patient takes a walk or other form of exercise immediately after the application is made, the congestion of the mucous membrane is less marked.

In a few days, the applications produce less reaction, and more pollen may be inhaled and the inhalations made a greater number of times. Gradually the reactions become less and finally are not observed by the patient. When this is the case the patient is immune to an attack of hay fever at this time.

This immunity, it must be understood, is not permanent, and therefore the treatment should not be discontinued until the regular advent of the hay fever season, when it should be entirely discontinued as the natural pollen of the air takes the place of the artificial inhalations.

Should the patient leave the hay fever zone in which the ragweed has been destroyed by freezing, and come further south where the ragweed may still be pollinating, the staminate inhalations should be resumed during this interval to avoid an access of the disease from the diminished tolerance that may develop.

My opinion is that if the staminate inhalations are resumed after the cessation of the hay fever period, a permanent tolerance will gradually be developed which will give the patient permanent immunity. The patients, however, whom I am testing for this purpose are still under observation, and on this point I shall not be able to report until after the next hay fever season.

¹Pituitrin, an extract of the pituitary gland, resembles adrenalin in its effects, but the reaction is somewhat delayed.

The method sometimes recommended of confining the patient to a room from which the air is kept within the limits of comfort, is especially to be condemned. On the contrary, the patient should assist the treatment by free exercise in the fresh air and thus improve his general health. With this in view, the digestion should be guarded by the avoidance of excessive, rich, or indigestible food and drinks.

In my efforts to simplify this method, I have tried various forms of powder blowers, but finally decided on a very simple but expedient method. About two teaspoonsful of the staminate flowers are placed loosely on a piece of sterilized gauze, such as is used for surgical dressing, and the ends then tied together to make it a bag. This is tapped gently against the elevated nostrils for several inhalations, and the bag gently rubbed, the motion causing a loosening of the pollen from the staminate flowers sufficient for the purpose. After having been used about ten times the reaction diminishes considerably, and new staminate flowers should be used, as the pollen has probably become exhausted.

While the staminate flowers of the previous season are probably the best, still I have used some that were at least two years old which were still effective. Care should be taken that the flowers have not been exposed to freezing, as this disintegrates the pollen and destroys its utility for this purpose.

My claims for this method of treating hay fever rest upon its success and effectiveness, the entire absence of danger, complications, or reactions characteristic of other methods, its simplicity, and finally its cheapness, as the staminate flowers abound everywhere and are easily obtained.

Its effectiveness I have demonstrated on my patients, who, while not large in number, were typical cases, and all under my personal supervision. The economy of the method applies not only to the insignificant cost of the flowers, but also to the fact that the patient can easily apply it himself, thus saving considerable cost. It must be remembered that while the poor man may be treated for this at our public institutions, still a visit usually means the loss of half a day, which, in a prolonged treatment, may be more expensive to the poor man than the fee of the wealthy patient who visits the physician's office.

Its simplicity is one of its most important features. All that is needed for the physician is to determine that it is true hay fever. While the treatment of other affections of the nose and throat would be valuable not only in making the treatment more effective, but also in preventing complications of the ears and other adjoining parts which are liable to result, still this is not absolutely necessary for this treatment. The directions are then given to the patient, who will then have little difficulty in carrying them out.

The comparatively small number of cases of hay fever which are due to the pollen of the goldenrod and other weeds will, no doubt, respond to an analogous treatment such as I have here described, but I have thus far limited myself to the ragweed variety, and I hope to make these the subject of a later communication. The shortest time that the treatment may be commenced still remains to be determined. In four patients, upon whom the treatment

was commenced from five to six weeks before the beginning of the hay fever season, the immunity appeared complete. In one patient upon whom the treatment was commenced ten days before the expected attack the symptoms were moderated, but the treatment had undoubtedly been commenced too late. As I have a committee of experienced physicians associated with me in this investigation before the beginning of the next hay fever season, I hope in my next communication to give a full report regarding these details.

516 HIBERNIA BANK BUILDING.

A REPORT OF A CASE OF RESECTION OF FIVE FEET OF INTESTINE FOLLOWING THROMBOSIS OF THE MESENTERY:

*With Remarks upon the Diagnosis.**

By GEORGE ERETY SHOEMAKER, M. D.,
Philadelphia,

Gynecologist to the Presbyterian Hospital; Consulting Surgeon to the Woman's Hospital.

CASE.—E. M.; single, twenty-eight years; a tall, poorly nourished mulatto woman, was admitted November 14, 1908, to the Presbyterian Hospital with severe cramps in lower abdomen, both sides, accompanied by nausea and vomiting of greenish material, beginning suddenly twenty-four hours before. The temperature was a little below normal, the pulse 60 and of fair volume, the leucocyte count was 9200; there was no local muscular rigidity, the whole abdomen flat and rather tender. The bowels had moved within twenty-four hours.

There was a history of disease of both tibiae at the age of twelve. There were present scars of old ulceration on both legs with anterior bowing, probably congenital syphilis. Seven years ago a suppurating ovarian cyst of the right side had been removed at another hospital and a sinus which remained had been closed by operation nine months later at the same institution. There was a history of occasional attacks for some years of pain with vomiting, relieved after two or three days.

In spite of the severe pain and vomiting present on admission, the comparative absence of signs of severe trouble, especially the good pulse, made it seem advisable to await developments. In the next forty-eight hours there was frequent vomiting of watery mucus with occasionally a bile tinge, no blood, no fecal odor, very severe general pain, at first intermittent, then constant. Absolutely no distention. General tenderness of abdomen, which was most marked on the right, made examination unsatisfactory, but no local swelling or enlargements and no relative muscular rigidity could be made out. Efforts to get a movement of flatus or feces through the bowels entirely failed. Temperature normal or below, respirations normal, but the pulse gradually lost volume and tension became accentuated, the rate from 96 to 112. Slight distention now began, and under the diagnosis of intestinal obstruction of obscure type the abdomen was opened an inch to the right of the old scars.

November 16, 1908. Operation, assisted by Dr. George M. Laws.—There was thin, dark, watery fluid in peritoneal cavity, a few ounces, no lymph. No general adhesions were found, but a few were easily separated about the broad ligaments, especially to the right. Nothing in pelvis to account for symptoms. Many coils of ileum were purplish black and somewhat distended. Peritoneal coat was smooth, but lacking lustre, and edematous. On delivering these coils the mesentery was found thick, purple, swollen, and rather rigid, as though from blood stasis. On under surface, at two points, was sensation as of hard, thrombosed vessels. Two narrow adhesion bands were severed which seemed to partially obstruct bowel. There was a well organized adhesion of bowel of pencil size attached to upper part of old scar. No sharp line of de-

*Read at a meeting of the College of Physicians of Philadelphia, February 10, 1909.

marcation of the dark color was found, which involved the upper portion of the mesentery and about five feet of upper ileum and jejunum. Clamps were placed on healthy bowel above and below and the intestine rapidly trimmed off the mesentery near its border, except at one point where a portion, about two inches from the edge, which was more firmly infiltrated with blood, was cut away. From the cut edges much venous black blood drained, a few oozing points were controlled by chromatinized catgut stitches put in with round needle. The ends of the bowel were united by two rows of Pagenstecher thread after the manner of Moynihan. The redundant mesenteric folds had now drained largely of blood, were much smaller, and were folded over upon themselves after Kocher's method. A cigarette drain was left, and the wound in abdomen was nearly closed. The patient was afterward placed in the Fowler position. Murphy salt solution by rectum.

After operation there was much adynamia, but no peritoneal infection. The low vitality of the patient caused an absence of attempt at union of the incisions, the lips of a dark gray color falling apart down to the peritonæum when the stitches were removed. Intestinal wall floored this depression. There was no leakage at the site of anastomosis, but a small fistula formed in the exposed intestinal wall about the seventh day. This was apparently caused by sloughing out of a small infarct.

There was little fever and no vomiting at all. Flatus passed in twenty-four hours. Bowels moved freely and naturally by anus after fourth day with tendency to diarrhoea. Nutritive enemata were at first used instead of food by mouth. Great improvement in strength followed the use of iodide of mercury, after convalescence was established.

(Addendum. Six months later the fistula was successfully closed by resection and end to end anastomosis. The patient remains well.)

This is a typical picture of the conditions described as thrombosis of the mesentery. The purplish black color was different in shade from the black of strangulation, and the peritonæum looked more oedematous or sodden. There was no sharp line of constriction at the site of the bands, but the discoloration continued beyond them and shaded to the normal. The bands probably did not completely occlude the bowel, but, as in the attacks in previous years, only as the bowel distended did they interfere. The primary condition was thrombosis. The distension was very late and secondary.

Strangulated portions of omentum may show large, saclike accumulations of bloody fluid. Moynihan mentions a case of volvulus associated with a distinct tumor which was removed with the bowel and afterward proved to be blood alone, but there is nothing except occlusion of mesenteric vessels which is capable of giving such extensive hæmorrhagic infarcts with diffuse swelling in the non-strangulated mesentery.

Not many cases show the slow development of distention and pulse change which my patient showed, but if they do in the presence of severe pain and vomiting, a diagnosis of thrombosis is more likely than one of acute strangulation. In many cases of thrombosis, however, the development of distention and secondary peritonitis following the attack by organisms upon the engorged tissues is so rapid that it is not possible to separate the primary disease from mechanical ileus or from the so called dynamic ileus.

The condition must be distinguished, says Eisen-drath, from acute peritonitis associated with cholecystitis or appendicitis and from intestinal obstruction, from torsion, bands, intussusception, hernia, etc.; from acute pancreatitis, lead or renal colic, and

torsion of tumors. Referred pain from pneumonia or pleurisy, especially diaphragmatic pleurisy, must be considered. Each of these conditions has symptoms of its own and can usually be differentiated. Thrombosis or embolism of the mesentery may, however, appear as secondary to any inflammation along the portal or mesenteric vascular systems, so that appendicitis, for example, may be thus complicated.

The various causes of embolism elsewhere apply here. They include diseases of the heart valves or of the blood vessels, syphilis, arteriosclerosis, or vascular traumatism.

The outcome is usually fatal, though collateral circulation has in a few rare instances been reestablished. Ninety-four per cent. of the patients are said to die. The only hope is in resection of the intestine, but operations are said to be very discouraging and few patients recover. Of forty-seven operations quoted by Jackson only four patients recovered. Even a very small embolus in one of the terminal branches may cause a small perforation of the intestine when all else is well.

As to the method of operation, Moynihan considers that all patients should have the diseased part rapidly cut away and an artificial anus established without an attempt at anastomosis, owing to the difficulty in telling how far the gangrene will ultimately extend. In the case reported the anastomosis was successfully completed, though a small fistula arising at another point remains.

The evidence of thrombosis before operation was not clear, nor does an after study of the symptoms do more than show that they were consistent with such a condition, while not excluding slowly progressive ileus from chronic causes such as bands.

The diagnosis of thrombosis is always uncertain and often impossible. It is likely to remain so because types of cases vary greatly. In one type there are copious bloody stools with diarrhoea, and if the higher branches of the superior mesenteric vessels are involved there may be bloody vomiting. On the other hand, many cases, such as this one, show absolute impermeability of the bowels and no blood is seen. The sudden agonizing and continuing pain is a marked feature, and is never absent, but pain is common to nearly all acute abdominal conditions and is not diagnostic. Hæmorrhage, when it occurs, is very suggestive, but it is not present where the bowels do not move. Only in the rare, slowly progressive forms can more common causes of ileus be probably excluded. There is no symptom group which really serves to make the diagnosis, but fortunately operation is indicated in practically all of the conditions for which it might be mistaken, and operation is the only hope.

There is little help to be obtained from the locality of the symptoms, as these vary so greatly with the extent of the infarct and the branches of the superior or inferior mesenteric vessels primarily or secondarily involved. The amount of bowel imperiled varies from a narrow ringlike band produced by the occlusion of a terminal branch to a large part of the small intestine with portions of the large. The areas are extensive if the portal system is invaded.

TYPHOID FEVER FROM THE SURGICAL POINT OF VIEW.*

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Typhoid fever, from a surgical point of view, suggests at once its main and most serious surgical complication, perforation of the intestine with resulting peritonitis; but many other conditions arise during the course of the disease that call for the intervention of the surgeon, and we will briefly consider the more frequent ones before discussing the subject of intestinal perforation.

In the brief time allowed me I have been able to consult the records of the Beth Israel Hospital for no more than the last three of the eighteen years that I have been serving it. During these three years to September 30, 1909, there have been 217 cases of typhoid fever treated in the wards. The surgical complications of this series will be referred to under their various headings.

The lowered vitality, induced by the severity of the toxæmia and length of the disease, facilitates the progress of any pathological process, while at the same time it prepares the field wherein the various bacteria gain their opportunity to accomplish their parasitic work. From within, entrance is afforded not only the typhoid bacillus, but the usual inhabitants of the intestinal canal as well, the colon bacillus, streptococcus, staphylococcus, etc. These, though innocuous when restricted to their habitation within the lumen of the healthy gut, are extremely noxious when they invade the tissues beyond, and they do so, through the opportunity offered them by the open wounds of the ulcerations pathognomonic of the disease. From without the normal resistance of the skin surface is so lowered that comparatively insignificant causes, which otherwise would have no consequences, are magnified into conditions with serious effects. An instance of the latter is bed sores. Interference with the circulation of the soft parts over the sacrum results in gangrene, the open surface of which may permit the entrance of pathogenic germs which set up a diffuse cellulitis.

Furunculosis is another instance of infection from without and may be classed together with abscesses in the cellular tissue and at the sites of hypodermic punctures, even when made with the utmost care. Infection may enter through the slightest abrasion of the skin, or through the hair or sweat gland follicles. There are two factors concerned in the prevalence of this class of infections; firstly, the entrance of the infective agent, and, secondly, the resistant powers of the economy to the proliferation of the germ after it has gained entrance. The first is well illustrated by the comparative infrequency of furunculosis and bed sores under the cleansing effects of the cold bath treatment. The second by the facility with which the germs gain their foothold in typhoid, for the development of infection in any condition does not depend merely upon the introduction of the infective agents, which more or less are always with

us, but to a positively greater extent on the resistant power of the system to the invasion of that particular organism. Physiology and physiological therapeutics are now developing along these lines, and we may hope in the near future to know more of the manner of entrance of infections and may be able to apply the knowledge to prophylaxis.

Among the 217 hospital cases mentioned before, there were eleven patients in whom these superficial suppurations were marked complications, five had extensive bed sores, three general furunculosis, one abscess of the face, one cellulitis, and one erysipelas. One of these cases deserves special mention as the severest case of typhoid fever in which I have ever seen a patient recover. The patient was transferred to my service in the hospital for intestinal perforation during a relapse. Among her other complications were two hæmorrhages, one before and one after the perforation, two relapses, bed sores, furunculosis, cellulitis, erysipelas, fæcal fistula, and pulmonary œdema. The furunculosis was so marked that my house surgeon used up all his spare time for weeks in going down to the room where she was isolated and incising miscellaneous abscesses as they developed.

Another and more serious class of suppurations that are likely to occur during the course of the disease is involvement of the internal organs and, unlike the superficial lesions, the source of the infection is from within and may be carried to its place of lodgment in various ways which will be considered under four headings: 1. By transportation by the blood current; 2, by extension through the lymphatic circulation; 3, by direct continuity, or by extension from one organ to another along the calibre of connecting tubes or ducts; and, 4, by changes in the blood and vessel walls permitting clotting and thrombosis, and parenchymatous changes in the organs, all due to the disorganizing effect of the toxæmia on the cellular elements.

In the first mode the blood carries the typhoid bacilli, as well as other bacteria that gain entrance through the lesions of the disease, to their place of lodgment, and there is therefore hardly a portion of the body that may not possibly become infected through this means. The more frequent suppurations that have been observed, whose origin may be explained in this manner, occur in the glandular organs and have been noted in the thyroid, in the pus of which the typhoid bacillus has been found, the testicle, ovary, and other glands; in the serous sacs, as joints, pleura, and pericardium; and in the bones where osteitis, periostitis, or necrosis is frequent as a late complication. The typhoid bacillus has been found alone or accompanied by other organisms in the pus of these bone lesions long after the subsidence of the fever. Among the 217 typhoids previously referred to, there were, under this variety of complications, two cases of arthritis, two of pleuritis, and four of periostitis.

2. As instances of the second mode of infection mentioned, that through the lymphatic circulation, the most prominent would be abscess of the mesenteric glands carried from the intestinal ulcerations. Other lymphatic extensions may in like manner, have their origin from any of the secondary lesions that occur during the disease. There was only one

case under this heading, an axillary adenitis, in the series herewith reported.

3. Infection by the third mode, direct continuity or along the ducts, would include local peritonitis due to continuity of the inflammation through the unbroken gut or through a perforation previously protected by visceral adhesions. It would also include free peritonitis, diffuse or general, due to perforation with spilling of the intestinal contents, to which subject we will revert later. There is another class under this heading in which it is difficult to determine whether the infection reaches them by continuity or in the mode mentioned as first, that through the blood current. It is reasonable to suppose that it may happen in either way. Parotitis, submaxillary adenitis, cholecystitis, pancreatitis, appendicitis, mastoiditis, or other sinusitis of the head, might be carried in either way, but as these organs all connect through their ducts or mucous passages with various parts of the alimentary canal, where there is always filth enough, especially during the course of the fever, to infect them directly; they are more likely to be involved in this way. Of this variety of infections there were, in the 217 cases, eight intestinal perforations, one cholecystitis, one appendicitis, and one otitis media.

4. The fourth mode of infection mentioned, that through changes in the blood and vessel linings, permitting clotting in the vessels, includes some of the most serious complications of the disease. Emboli detached from the thrombi of inflamed veins, arteries, or heart, are likely to be carried to various organs, where they may set up suppurative processes either by direct inoculation with the pyogenic organisms in their substance, or, by clogging the circulation, prepare the field for development of the bacteria in the blood. Phlebitis, arteritis, and thrombosis attack the vessels in the lower extremity more often than any other, with results of any grade of severity from temporary cedema or the persistent swelling and disability, usual in femoral phlebitis from any cause, to complete gangrene of the extremity from arterial thrombosis. There were four cases of femoral phlebitis in the 217 of this series. Mesenteric thrombosis, likely through its resulting peritonitis to be mistaken for intestinal perforation, is a fatal complication.

Parenchymatous changes in the organs, such as liver, spleen, kidney, etc., while they are essentially medical complications, favor the lodgment, especially in the areas of necrosis produced by the toxæmia, of infective bacilli from the blood, with resulting abscess formation of or about these organs.

The treatment of these various complications I will pass over with very few remarks, as, in general, it is no different from that directed to these same conditions when they develop from other causes than typhoid fever, and the relation of the latter is to be considered as an additional depressing influence to the usual strain of the operation when required.

Cholecystitis is a complication that calls for special mention, as it seems to take on a more virulent course in typhoid. It may occur during the course of the fever in the third or fourth weeks or much later as a sequel of the disease. The typhoid bacillus is generally found in the contents of the gall-

bladder in cases operated on during the course of the fever and very often when the gallbladder is opened at a much later period for disease or at post mortem examination. It has even been found in the nuclei of gallstones. Gangrene and perforation are prone to occur, and for this reason cholecystitis should be closely watched for prompt interference when called for by threatening symptoms. Perforation, allowed to go without operation, is fatal and with operation it has a mortality of fifty per cent. Thomas gives the frequency of the occurrence of cholecystitis in a series of 895 cases of typhoid, as happening in $1\frac{1}{3}$ per cent. or twelve, of which four patients requiring operation were so treated with two deaths, and one was allowed to die of perforation without operation. Ashhurst, in a series of 2,864 cases, found cholecystitis to occur in $\frac{2}{3}$ per cent., or eighteen, of which two patients were operated upon with one death, and three died without operation, though not necessarily as the result of the cholecystitis.

Appendicitis deserves special mention, not so much from his viewpoint as a complication as from that of differential diagnosis. Occurring during the course of the disease it may so simulate intestinal perforation as to be indistinguishable from it, but as the treatment for either condition is the same, this distinction is not as important as that of a primary appendicitis from typhoid fever. Early typhoid is frequently taken for appendicitis. Pain and tenderness in the right iliac region and fever are the leading symptoms common to both, but other signs such as leucocytosis, which is low in typhoid, but with a relatively high lymphocytosis, vomiting, which is rare in typhoid, mode of onset and character of pain, etc., when taken into consideration should be sufficient to distinguish them.

Intestinal perforation is a comparatively frequent and most serious complication and is the result of the intestinal ulcerations peculiar to the disease. It is most likely to happen in the third or fourth week, though it may occur earlier or later, especially in a relapse. It takes place, according to Harte and Ashhurst in about 2.5 per cent. of cases, this figure being based on a total of nearly 3,000. According to the same authors the perforation is single in eighty-five per cent., and the location is in the ileum within twelve inches of the ileocaecal junction in seventy-five per cent., and over three feet away in only two per cent. of cases. At the Beth Israel Hospital for the three years to September 30, 1909, among a total of 217 typhoids, there were eight perforations, a proportion of 3.5 per cent., half again as high as the figures quoted.

The mortality of the complication is high. If not relieved by operation it is almost surely fatal, though recovery is a possibility through the formation of a local abscess which could result if there were protective adhesions about the perforation or if the amount of material thrown out were moderate and not of a specially virulent nature. But these are only possibilities and not to be figured on. The results of operation, collated by the same authors as quoted before, in a series of 362 operated cases up to 1903, show a mortality of seventy-four per cent., and subsequently in a series of 162, collated by Allen up to 1907, a mortality of sixty-two per cent.

But while there is a large percentage of patients who die the mortality should not be ascribed to the operation, as a large number succumb to other complications of the disease after having practically recovered from the effects of the operation.

The most important element in the prognosis is the timeliness of the operation. If done within from six to eighteen hours of the time of perforation there is a reasonable hope for success. If the condition is unrecognized or neglected until the resulting peritonitis gains sufficient headway to add an additional septicæmic element to the existing septicæmia infection of the disease, the prognosis is necessarily influenced in proportion. Yet hopeless looking cases are so often successful that every patient ought to be given the benefit of the chance, be it ever so small, of relief by operation. Of the eight patients at the Beth Israel Hospital during the period stated, one died without operation, seven were operated upon, of whom five died, a mortality of seventy-two per cent.

The symptoms of perforation should be differentiated from those of the resulting peritonitis and the latter should not be awaited, for the more clear they will have become the more dubious the prognosis. A typical set of symptoms is uncommon, yet the most frequent initial symptom of perforation is a sudden, acute pain or sudden aggravation of an existing pain, more likely to be felt in the right iliac region, but it may be more or less general. There will be tenderness or an increase of existing tenderness, usually in the same region, and rigidity of the right rectus muscle or of the lower abdomen, both of which signs are of especial import in the presence of previously existing distention. Respiration will be increased in frequency and likely the pulse. A sudden fall in temperature is a valuable sign when present, though that, as well as frequency of the pulse, may be caused by hæmorrhage. Rise in temperature, treacherous pulse, abdominal distention, dullness in the flanks, anxious facial expression, absence of liver dullness, etc., may be present, but by the time these symptoms, or most of them, have developed we have to deal with an extensive free spreading or general peritonitis.

Error in diagnosis is a possibility, but most other conditions that are likely to be mistaken for perforation also call for operation, which should be done in the presence of fairly clear indications rather than leave the patient with the uncertainties of the development of a fatal peritonitis.

Peritonitis may occur without perforation by extension of the inflammation through the unbroken gut from the ulcerations within to the peritoneum without, the nature of the inflammation, whether serous or suppurative, depending on whether the bacilli have permeated the inflamed tissues, or having permeated whether they are neutralized or not by peritoneal phagocytosis. Serous peritonitis, which is common, needs no special treatment, but when septic, with perforation or without, the only treatment is operative.

Operation must be simple to be efficient. General anæsthesia is preferable and to be employed if the patient's condition justifies it. Otherwise local anæsthesia may be used. A median incision leaves a suitably situated drain opening, though

the right rectus incision is preferred by many. Intra-peritoneal work should be limited to finding and closing the perforation and inserting the drain. This can be done very quickly by locating the ileo-cæcal junction and following up the ileum till the perforation is found. Its edges should be inverted and sewed over by one, or better two, rows of Lembert suture and the gut returned. A drain to the pelvis will serve for drainage of the whole region below the pelvic brim. If there is exudate in the flanks, above the brim, or in the region of the liver or spleen, insert additional drains there. Drains should not be of bare gauze, but of folded strips of gutta-percha tissue or of the tissue wrapped around a core of gauze to give it body. The drains being quickly inserted the wound is closed up to the small drainage opening that it is necessary to leave. No flushing of the cavity or sponging should be done. With insertion of the drains the excess of fluid will escape through the wound and an additional quantity will be taken up by the pads used during the operation. The balance will either drain out or be taken care of by the peritoneum. As the after treatment differs in no wise from that of peritonitis from other causes, we will not go into its details, as this paper has already much exceeded its intended length.

1325 MADISON AVENUE.

A CASE OF AMÆBIC ENTERITIS WITH UNCLINARIA, TRICHOCEPHALUS, AND TRICHOMONADS, SHOWING RESULTS OF TREATMENT AFTER FOUR YEARS.

By JOHN G. GAGE, M. D.,
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(Reported from Professor Dock's Service, University Hospital, Ann Arbor, Mich.)

On July 29, 1908, about four years after treatment for amœbic dysentery, a patient returned to the Medical Clinic because of cough and spitting of blood. Dr. Dock advised examination on account of the suspicion of liver abscess ruptured through the lungs. This was found not to be so and recovery from the dysentery seems to warrant this report.

Osborn¹ reported the case in 1904, but as the report appeared in the proceedings of a society, and not as a formal paper, I take the liberty of again presenting a résumé of the case, with the later notes.

The former notes are as follows:

Patient, C. S., admitted to the University Hospital because of chronic diarrhœa with blood and mucus in the stools.

Family history was negative except that patient's mother had had "consumption" for the last nineteen years, but was better than formerly.

Personal history: Patient was born in Württemberg, Germany, and came to this country when six years old. He was well as a child. Lived in Michigan until about sixteen years old when he went to Philadelphia to work, and stayed there about a year, returning to Michigan in 1898. In August, 1899, he went to Sanburn, North Dakota, and while there had a diarrhœa for two or three weeks, which he thought was due to alkali. In 1900 he went to Fort Crook, Nebraska. While there he was in a hospital for "cold and fever, pain in the chest and bloody sputum." The patient then went via San Francisco to Manila, arriving April 17,

¹*The Physician and Surgeon*, April 1904. Proceedings of the Clinical Society of the Hospital of the University of Michigan.

1901. Later he went to the Island of Mindanao and was up and down the coast at intervals for a year and took marches inland twenty or thirty miles.

In July, 1901, he had an attack of diarrhoea and cramps at night. From that time on the diarrhoea grew gradually worse. Patient did not think there was blood in the stools but reported to the hospital twice daily and became so ill that in August or September, 1902, he was taken to the hospital, where he remained ten days but still had diarrhoea when he left. He went back to the hospital late in November, at which time he was having twenty to twenty-five stools daily. The stools contained blood and mucus but no pus. Pain was "terrific" with a burning in the abdomen and tenesmus. While in the hospital he received enemata containing silver, zinc, etc., and took quinine by mouth. He left the hospital on December 25, 1902, and was sent to Manila, where he remained in a hospital from January 1, 1903, until February 5, 1903. He had enemata every second day and salts once a week. Sailed for San Francisco, where he arrived March 3, 1903. After staying in a hospital in San Francisco for two or three days he returned to Michigan, arriving March 10, 1903. In June he went to work on a Lake Michigan boat and stayed until November, never free from diarrhoea.

Status præsens, March 11, 1904 (Dr. Morris): Temperature, 97.4° F., respiration, 22, pulse, 76. Usual weight, 141 pounds, present weight, 126 pounds. Height five feet, seven inches. Panniculus small, muscles well developed. Skin smooth and dry, slightly darker over abdomen. Numerous areas of light brown pigmentation over abdomen and thighs, 3 to 5 mm. in diameter giving a mottled appearance. (Patient said he had "dhoobie itch"). Few small hæmangiomas over thorax. Feet and ankles not oedematous. Conjunctivæ and lips fair color. Teeth in fair condition. Tongue large, flabby, clean, moist, and somewhat pale.

Thorax: Expansion good, symmetrical. Percussion, negative. Auscultation, good vesicular throughout. Heart, apex in the fourth intercostal space, 1 cm. inside nipple. Impulse small; dullness not enlarged; heart sounds moderately strong and clear.

Abdomen: Below level of ribs, flattened particularly across lower half. Moved with respiration. Walls moderately strong. Patient complained of tenderness below left costal margin. Slight tenderness throughout. No rigidity or muscle spasm. Spleen and liver not palpable. He complained of tenderness in gallbladder region on deep pressure.

Urine: Fresh sample, 125 c.c.; specific gravity, 1.025; reaction acid; yellow; all tests negative; few leucocytes and cylinders.

Blood: Red corpuscles 4,492,000; leucocytes 9,167; Tallqvist, ninety-five per cent; rolls well formed.

Stool (Dr. Dock) had the appearance of currettings, contained blood and mucus. Microscopical examination showed leucocytes and granular material. Many large amœbæ, containing red blood cells.

Diagnosis: Amœbic dysentery.

Treatment: Hot normal saline ($100-115^{\circ}$ F.); tube was passed eighteen inches, saline enema was run in slowly. After a pint had entered the tube was moved higher. Hips were elevated and a quart injected, hips were then still more elevated and another quart injected. Carlsbad salts, ounces one half in aq. menth. pip. every morning.

Diet: Albumin water, milk and lime water.

March 19th (Dr. Dock). Stool small, soft, rather unformed with a small mass of blood tinged mucuslike material adhering to the side of the vessel. Examination of this showed a good many blood corpuscles, bacteria, a few vegetable cells, no protozoa. Some of the cells looked somewhat like eggs but were rather too variable in size and showed no internal structure. No Charcot's crystals.

March 23rd (Dr. Dock). Tube passed into rectum this morning. Few drops of yellowish liquid with few opaque particles obtained, containing blood corpuscles, leucocytes, trichomonads, and one large amœba with red blood cells in it. One very large Charcot's crystal.

In another drop of material obtained, enormous numbers of large active amœbæ containing red blood cells were found and large numbers of Charcot's crystals.

Patient received six eggs, fifteen crackers, six pieces of toast daily. Raw or rare beefsteak ordered once daily.

March 25 (Dr. Dock). Rectal tube passed. Small bit of granulation tissue with many amœbæ and red blood cells obtained.—(Dr. Osborn). Stool passed this evening; small, reddish yellow, streaked with blood; some mucus

present. Under the microscope few dead amœbæ, few encapsulated bodies with lobules (ova of uncinariæ) were seen.

March 26th. On examination of stool placed in incubator last night, developing ova were found. The embryos

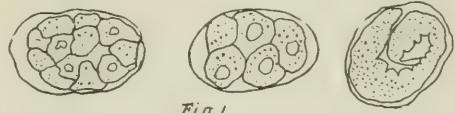


Fig. 1.

FIG. 1.—Ova, March 26, 1904, 9.00 a. m.

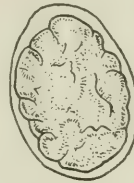


Fig. 2.

FIG. 2.—March 26, 1904, 9.00 p. m.



Fig. 3.

FIG. 3.—March 26, 1904, 9.00 p. m.

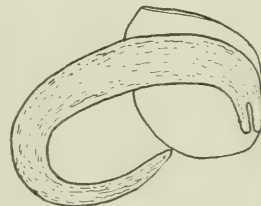


Fig. 4.

FIG. 4.—March 27, 1904, 9.00 a. m.

showed movement within the shell and presented the appearance as represented in the illustrations. Many Charcot's crystals.

March 26th, 9:00 p. m. Examination of sample for ova and developed embryos showed that both were present. The embryos were in a few cases more developed than in the examination of the morning, but there were all stages of development present up to the most mature one, as shown in the illustration. Fresh stool examined at 11:00 p. m. showed practically the same contents as the one noted at 9:00 p. m. of the preceding night; two ounces in volume.

March 27th. Patient had received crackers, which were discontinued, and received six pieces of toast, six eggs, raw scraped beef, once daily, and albumin water.

March 28th (Dr. Dock). Sigmoidoscopy passed about six inches into rectum, and showed mucosa slightly swollen. In some places were narrow, round or irregular hyperemic lines, slightly elevated like the margins of healed ulcers. Stool passed just before examination was of creamy consistency, greenish brown with red streaks. Small amount of gas in very fine bubbles.

April 3rd (Dr. Osborn). Stool passed were very fluid, four ounces, and contained large numbers of very active amœbæ, many of them containing red blood cells. Many red blood cells in stool, and considerable numbers of trichomonads. No uncinariæ eggs seen in three spreads.

April 13th (Dr. Osborn). Stools examined showed amœbæ, red blood cells, but no uncinariæ eggs.

April 16th. Ordered Carlsbad salts stopped. Sulphur, grains xxx, ordered four times daily. (Dr. Osborn): Examination of stools on April 15th, showed large numbers of motile amœbæ and red blood cells. One uncinariæ egg was seen. Up to this point very little had been accomplished by the treatment. Colonic flushings with hot salt solution had been tried for about five weeks. Patient was passing eight or ten stools daily in which amœbæ were always present.

	March 11, 1904.	March 25, 1904.	March 31, 1904.	April 4, 1904.	April 12, 1904.	April 20, 1904.	May 1, 1904.	May 9, 1904.	May 16, 1904.	May 24, 1904.	May 31, 1904.	June 7, 1904.	June 14, 1904.	June 21, 1904.	June 28, 1904.	July 5, 1904.	July 12, 1904.	July 19, 1904.	July 26, 1904.	August 2, 1904.	August 9, 1904.	August 16, 1904.	August 23, 1904.	August 30, 1904.
2. Lymphocytes	8.2	1.1	11.6	14	26	12.2	18.2	18.2	19.4	17.8	18.6	12.2	20	12	28.8	24								
1. Lymphocytes	18.2	10.2	3.2	1.0	3.0	3	5.6	9.0	8.0	7.8	6.0	5.4	6.0	5.6	9.4	12.4								
1. Eosinophils	2.0	1.2	1.0	3.2	1.0	2.2	2.2	0.2	1.0	1.4	1.2	1.8	1.0	2.8	1.4	3.0								
P. lymphomononuclears	59.3	69.4	72.5	62.4	60.0	65.0	50.2	60.4	62.6	66.0	66.4	63.2	73.2	54.2	56									
Eosinophiles	12.1	11.2	13.8	9.4	11.4	13	9.0	18.4	10.6	10.4	7.8	11.0	9.8	4.4	9.2	4.2								
Eosinophiles	0.1	1.0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0								
Number of cells counted, 1000	600	500	520	500	500	500	500	500	500	500	500	500	500	500	500	500								
Red count	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000	4,402,000								
White count	9,167	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950	10,950								
Hemoglobin	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%								

The stools also contained trichomonads and uncinariæ eggs. Irrigations with quinine solution (1 in 5,000) were tried. Patient complained of more pain than usual by the irrigation. He was able to retain the three quarts only two or three minutes. Examination of stools showed many active amebæ, trichomonads, uncinariæ eggs, and red blood cells. Patient felt quite well.

April 26th (Dr. Morris). Patient said he felt rather weak, had no appetite. Pain was sharp across lower abdomen just before movement of bowels; pain did not radiate; no pain at time of passage. On palpation there was tenderness in the suprapubic area and throughout the left side. In the right iliac region a mass was felt running parallel to Poupart's ligament about the thickness of the middle finger. This was somewhat tender. A similar body was felt extending transversely across the abdomen about three fingers' breadth above the navel. Marked tenderness on palpation of it at left side, and another along left side extending well into left iliac region. Marked tenderness throughout on left side when palpating this mass. Gurgling, fine and coarse, felt in left iliac region. Bowels moved four times.

May 5th. Dr. Morris counted the eggs in the feces, finding two to five eggs per centigramme, indicating about ten worms. The patient was put on Ashford and King's treatment:—Epsom salts, one ounce at 6:00 a. m.; no breakfast; thymol, grain xxx in capsules, at 7:00 a. m.; thymol, grains xxx again at 8:00 a. m.; epsom salts, one ounce at 11:00 a. m.

May 6th. The first stool was brown and watery and contained a good deal of blood in small clots. A later one, brown and watery, about 1 c.c. of pale yellow, granular powder; under the microscope this showed small crystals without definite shape, colorless, along with small yellow bodies. The next stool contained numerous thymol crystals floating on top, strong thymol odor, considerable brownish granular material. Toward the end the first worm found, also a few pink sloughs. In all, eight worms, four each male and female. After this no worms or eggs were found, but the amebæ still persisted. Salol, grains v; bismuth, grains x; three times daily, were prescribed.

May 20th. Thus far nothing had been accomplished in the treatment of the dysentery. After about five weeks of colonic flushings with hot saline solution and nearly four weeks' treatment with quinine irrigations, the patient was still passing ten stools daily, containing large numbers of amebæ, and other symptoms were not much improved. Ipecac powder was ordered, 7 grammes in one half gramme boluses coated with salol, at intervals of one half hour, beginning at 9:30 a. m.

May 21st. Many dead amebæ in stools.

May 23rd. Yesterday patient passed three formed stools. Last night slept all night and up to 4:00 p. m. To-day had had no movement of the bowels. He was not nauseated to any extent by the large amount of ipecac taken, and said that except for more severe pain on taking the quinine irrigations noticed no ill feeling from it.

May 24th. Examination of stool showed rather small, formed, black movement. Microscopical examination showed calcium oxalate, bismuth sulphide, and triple phosphate crystals. Some partly digested starch granules of *Linnæa* (the *Acetabularia* *acuticarpa* made, no blood).

May 25th. Bismuth sulphide.

May 26th. Patient had after the ball, salts, one ounce, (the *Acetabularia* *acuticarpa* made, no blood). The next stool was brown and watery, about 1 c.c. of pale yellow, granular powder; under the microscope this showed small crystals without definite shape, colorless, along with small yellow bodies. The next stool contained numerous thymol crystals floating on top, strong thymol odor, considerable brownish granular material. Toward the end the first worm found, also a few pink sloughs. In all, eight worms, four each male and female. After this no worms or eggs were found, but the amebæ still persisted. Salol, grains v; bismuth, grains x; three times daily, were prescribed.

amebæ, no trichomonads, and no blood. Patient advised to take more care in chewing food.

May 29th. Patient stated he felt perfectly well. Tenderness in the region of the tenth and eleventh ribs was rapidly clearing up. He went to the dining room, and said he "took everything in sight." He gained four and one half pounds in six days. Was given Rochelle salts this morning. At 3:00 p. m. passed large, soft stool containing a rather large amount of undigested food, small amount of mucus, no blood. At 5:00 p. m. passed a small semifluid stool containing a small amount of mucus, no blood, some undigested food. Microscopical examination: Triple phosphate, calcium crystals, starch granules, muscle tissue. No blood, no amebæ, no trichomonads, no eggs, and no Charcot's crystals. Patient was passing but one stool each day and that only when large quinine enema was given.

June 2nd (Dr. Dock). Patient was free from symptoms. Advised to abstain from eating fruits and sugars, and also from cold drinks and beer. Stool yesterday was entirely negative except for some undigested food.

June 3rd. Patient discharged. Felt well.

The stomach findings showed a normal acidity in two tests and a subacidity in the other with an excess of mucus in all three, and are recorded as a matter of interest:

March 26th. Test meal, shredded wheat biscuit; time, one hour; quantity, 50 c.c.; lavage, some mucus, few particles biscuit; mucus, in excess. Acids, free hydrochloric acid, 34. Total acidity, 42. Lactic, negative. Digestion per mette, pepsin—3.75 mm. in eleven hours. Microscopical examination showed rather numerous short, thick, motile rods.

March 27th. Test meal, shredded wheat biscuit; time, one hour; quantity, 28 c.c.; lavage, small amount mucus; few particles biscuit; mucus, in excess. Acids, free hydrochloric acid, 32.5. Total acidity, 45. Lactic, negative. Digestion per mette, pepsin—3.75 mm. in ten and three quarter hours. Microscopical examination, few nonmotile rods.

March 28th.—Test meal, shredded wheat biscuit; time, one hour; quantity, 25 c.c.; lavage, clear. Mucus, in excess. Acids, free hydrochloric—10. Total acidity, 20. Lactic, negative. Digestion per mette, pepsin—3.5 mm. in ten and three quarter hours. Microscopical examination, nothing abnormal.

The number of red blood cells and the hæmoglobin were about normal. The white corpuscles showed a slight increase, the highest count being 11,240.

The eosinophilia was the most interesting feature in the blood picture and was the only thing in the case which pointed to the uncinariæ or other intestinal parasites. The highest percentage of eosinophiles was 18.4, the lowest 4.4, the average 10.5. The number of eosinophiles four years after treatment was 4.2, which is about the upper normal limit.

When the patient returned to the Medical Clinic, July 28, 1908, he complained of cough, and said he had coughed up blood on three different occasions. About a year and a half previous to his return, he took cold after getting wet, and raised blood streaked sputum. The first and most severe hæmorrhage occurred about two months later, at which time he coughed up several mouthfuls of blood. Since that time he had had two smaller hæmorrhages. When he entered the hospital he was coughing occasionally, especially in the morning, but had very little sputum. Had lost twenty pounds in weight in the last year and a half. Appetite fair, bowels constipated.

Physical examination showed involvement of both apices.

No tubercle bacilli nor elastic tissue were found in the sputum on several examinations. The patient left the hospital before a tuberculin test could be given.

The patient was given salts on admission and the stools examined. The stools were foamy and contained much undigested food, but repeated examinations failed to show parasites of any kind, or ova.

This was a case of amœbic dysentery of about two years standing and could not be considered a very promising one for treatment. Such a case would now be considered, by many at least, one for surgical treatment. The results show, however, that some chronic cases can be permanently cured by medical treatment.

It also illustrates the value of the ipecac treatment. The cure in this case is permanent, as shown by the freedom from symptoms for four years and the results of examinations of the stools. The character of the stools shows some intestinal indigestion, which may be the result of the former dysentery.

The uncinariasis was very mild. There were only eight worms in the intestine, there was no distinct anemia, the eosinophilia was not marked, and there were no symptoms of the disease. The thymol treatment was successful in getting rid of all the worms.

The trichomonads were evidently not greatly affected by the thymol. They were present in the stools afterward, but apparently not as numerous. They were not present in the stools after the ipecac was given.

The trichcephalus eggs were found on only one occasion and then only four. No worms were seen in the stools. This is a common experience. The number of trichcephalus eggs found is usually small and the worms themselves are very rarely seen in the stools.

Credit for numerous examinations of stools, blood, and urine should be given Dr. R. S. Morris, Dr. Samuel Osborn, Dr. W. A. Scott, and Dr. John G. Rulison.

314 POPLAR STREET, WARREN, PA.

TEX CASES OF CARCINOMA IN EARLY LIFE.*

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The ten cases that I report were taken from the records of the McManes Laboratory of Pathology and represent well authenticated cases of this condition in various forms occurring in patients under twenty-five years of age. This number represents the total number of such cases from a total of over 2,800 cases, including cases studied at autopsy and specimens removed surgically. The diagnoses are borne out by histological examination except in one instance (Case II) in which, however, the gross description is so accurate that there can be little doubt as to the diagnosis. I was stimulated to make this report by performing the autopsy on Case I of the series and also by papers of Philipp and Lindemann which will be more fully referred to after presenting

the cases. Especial attention is called to Cases I, IV, VIII, in which both clinical and pathological notes are very complete.

CASE I.—A. B., a female white child, ten years of age, was admitted to the Children's Department of the Philadelphia General Hospital, March 11, 1908, complaining of persistent diarrhea. Her case was studied clinically by Dr. Howard Childs Carpenter. Her parents were said to have died from unknown cause and no family history of tuberculosis or postnatal exposure to this disease could be elicited. She was born in the United States and attended school until the present symptoms appeared last summer (1907). She had none of the diseases of childhood and especially denied a history of measles or varicella.

The present illness began during the summer of 1907 (about seven months previous to admission) when she began to suffer from frequent bowel movements, the desire being urgent and accompanied by sharp pain in the lower part of the abdomen.

Physical examination showed a fairly well developed child of unusual intelligence for her age. Skin was fair and slightly flushed about the cheeks. No scars, deformities, or eruption. The eyes were brown and showed no deviations from parallel axes; pupils were equal and reacted to light. The lungs were resonant throughout and normal to auscultation except that there was a slight roughening and prolongation of expiration at the right apex posteriorly. Heart was regular and showed no murmurs. The abdomen was flat and tender in variable situations; was tympanitic throughout except in the lower third. Palpation disclosed a mass in this latter position which was thought to be due to contraction of the recti. The spleen and liver were not enlarged.

The tuberculin reaction of Calmette was tried at different times in both eyes. In the right eye the test was absolutely negative. Five days later it was tried in the left eye, and after twenty-four hours the caruncle and semilunar fold were deep pink, but there was no capillary congestion and no exudation. After forty-eight hours the slight congestion persisted, but became no more severe. A two per cent. tuberculin ointment applied to the right submaxillary region and later to the lower abdomen gave no response. Von Pirquet's vaccination on the right arm was absolutely negative and an injection of 0.75 mg. of tuberculin (O.T.) gave no reaction either locally or generally.

After a month's observation she was transferred to the surgical wards, where she was operated upon by Dr. Frazier for what was supposed to be tuberculous peritonitis. The operation showed a large mass situated retroperitoneally in the neighborhood of the rectum. This was believed to be malignant, and an artificial anus was produced. The patient made a good recovery and lived a fairly comfortable life for five months, when she died from a general toxemia on September 23, 1909.

The urine examined on admission was cloudy, straw colored, acid, and negative for albumin and sugar. Microscopically it showed cellular and other detritus, yeast, and fibrin. The sputum was negative for tubercle bacilli, but these organisms were found in the feces shortly after admission.

Her temperature for a short time after admission was fairly high, running up to 102° F. on a few occasions, but after two weeks ran close to the normal line, except for occasional temperature elevations to about 100° F. The respirations were from 25 to 30, and the pulse rate was proportionate.

The clinical diagnosis was miliary tuberculosis of the lungs, dilatation of heart, pleurisy, bronchopneumonia, malignant disease of rectum.

The autopsy was performed by me twenty-five hours after death and the notes from it are abstracted as follows:

Body of a child, apparently normal, died at ten years of age; lymph nodes of groin are markedly enlarged; a well healed artificial anus is found in the right inguinal region.

Preliminary incision shows a thin panniculus adiposus and dark red musculature.

Abdominal cavity contains a slight excess of fluid; liver extends 4 cm. below the costal margin; left ovary visible above the tubes. Transverse colon greatly distended; sigmoid attached to abdominal wall by formation of artificial anus; other portions of intestines also attached by adhesions.

Spleen shows passive congestion and slight follicular hyperplasia both grossly and minutely. Left kidney shows microscopically an acute parenchymatous nephritis. Grossly there is moderate hydronephrosis and hydroureter, the latter increasing the diameter of the ureter to 1 cm. down to a point where it is embedded in and compressed by a mass of enlarged pelvic lymph nodes. Histologically this ureter shows distinct cancer involvement of the lymphatic channels outside the muscular coat. Right kidney shows nothing more than acute parenchymatous nephritis. The adrenals grossly show no pathological change but histologically show well marked cellular vacuolation and normal chromatin content. Bladder, grossly, is normal. Liver shows slight peribiliary fibrosis, fatty degeneration and numerous tumor metastases varying in diameter from 1 to 5 mm., and being generally spherical. Histologically the metastatic tumor masses are composed of an irregular network of rather loosely arranged connective tissue supporting a number of cells similar to those to be described in the chief tumor mass, except that in addition to the central necrotic masses there are many more caryocentric figures, and some of the cells show globules of pale blue stained, finely granular material which is evidently mucin. In places the mucin groups are within a mass of cells in a fashion suggestive of irregularly formed alveoli. Pancreas shows a slight grade of chronic interstitial pancreatitis, one small tumor nodule and a small area of fat necrosis. Stomach is grossly normal. Small intestine is normal as is also the appendix.

Large intestine is congested throughout; shows adhesions to the abdominal wall by artificial anus. At about the junction of the sigmoid and rectum there is a sharply defined rectal ulcer from a point to cm. above the anus to mucotaneous junction, the margins showing congestion and hemorrhage and thickening of the musculature; as the ulcer extends down it is surrounded by an area of marked thickening, varying from 3 to 12 mm., which in cross section shows finely striated, hyaline, and yellowish gray cut surface. Rectum is surrounded by greatly enlarged and densely adherent lymph nodes, which on cross section show a bulging, mottled, soft surface which presents numerous areas of caseation, varying from pin point to 1 mm. and showing punctuate hemorrhages. Histologically the rectum shows considerable elongation of the glands of the mucosa and well marked mucoid degeneration of the epithelial cells lining them, so much so that it is with difficulty that the cells can be made out, their nuclei being so closely grouped with the nuclei of the membrana propria that they are with difficulty distinguishable and the mucin masses of the protoplasm fusing centrally to form large masses whose cell outlines cannot be made out. Membrana propria shows marked infiltration with lymphocytes, several solitary follicles show well marked enlargement and congestion, although they show no adventitious cells. Muscularis shows marked thickening and moderate fibrosis. Scattered through the muscular coats, especially in the deeper layers, are large epithelial cells similar to those described in the lung and liver, but with somewhat different arrangement. Instead of appearing in large masses, they appear in smaller chain-like groups which seem to spread here and there through the muscularis in the lines of the smaller lymphatic channels forming a coarse and irregular network. A second section of rectum taken close to the anus shows considerable dipping down of the squamous epithelium with no definite penetration of the latter. In this section the epithelium of the cancer is grouped in enormous masses, the cells in most situations having completely lost their outline because of the presence of large masses of mucin. In many cases this has gone on to such a degree that it appears as if large masses of mucin lay between the heavier mucin bundles separating the latter, one from another.

Uterus and Fallopian tubes normal, as is also the right ovary.

Uterus by its size has been forced out of the pelvis, is 10x4.5x3.5 centimetres; is firm, smooth, cuts with moderate resistance, and shows a finely striated yellowish gray cut surface which shows numerous small cysts about the size of a pea, and contains viscid hyaline fluid. Histological examination shows the germinal epithelium to have completely disappeared, the outer layers of the cortex being condensed and rather poor in nuclei. Descending deeper into the mass, however, this structure is found to be marked by the presence of the fibrillar being well separated by a

faintly pink staining, finely granular material. The nuclei, however, are normal. Scattered throughout this section and arranged in places in enormous masses, in other places as fine streaks through the lymph spaces, are epithelial cells. Those confined to the smaller lymph spaces show no degenerative changes, whereas those in the larger groups show marked mucoid degeneration. One large follicle is found showing a rather thick mass of cells of the stratum granulosum; the latter, however, for the most part separated and lying within the lumen of this enlarged follicle and imbedded in a finely granular slightly acid stained albuminous precipitate. At one place where the stratum is still in continuity with the wall it is found that there is what appears to be a direct continuity between the cells of the stratum and the cells of the tumor mass. Comparison of the cells of the stratum and of the cells of the tumor would indicate that they are of essentially the same nature. The cells are large mononuclear cells, rich in protoplasm and with relatively large vesicular nuclei. The protoplasm of the cells is mildly acidophilic. The nuclei in many cases show caryocentric figures. The size of the nuclei is variable, but generally is in uniform proportion to the size of the cell. Heaping up of the chromatin in irregular masses, solid staining of the nuclei, peripheral grouping of the chromatin, are common variations from the usual vesicularity. In many of the cells there is seen within their protoplasm small masses of finely granular or hyaline pale blue stained material which is evidently mucin. In addition, masses of mucin quite outside the cell bodies are also to be found.

Mesentery shows diffuse superficial metastases of pinhead to small pea size scattered over the peritonæum but extending only slightly over the intestine.

The pleural cavities practically are free from adhesions and contain but a small amount of fluid. The right lung is voluminous; shows dense adhesions between the lobes; surface glistening and transparent; shows a generally mottled white and black color; mottlings of white are formed by the presence of numerous variously sized nodules, which on cross section are found to surround the bronchi, are firm; show no tendency to necrosis and are of a yellowish white color; lung cuts with increased resistance and shows a firm, slightly bleeding nonbulging mottled cut surface, white mottlings varying in size from pinhead to that of a small pea, the latter showing openings which undoubtedly are small bronchi, the smaller ones also showing perforations. At the apex is found a small cavity with fibrous thickening of the mucosa and the presence of a moderate amount of bloody mucus. Vessels are normal and peribronchial glands greatly enlarged. Cross section shows a little pigment; they seem to be of the same character as the nodules in the lung except that they show minute points of hemorrhage. The histological sections show no pleura. The alveoli show generally the spaces of about normal size, which are in many instances filled with a finely granular or hyaline albuminous precipitate. Again, the alveoli in some places show distinct enlargement, atrophy of the cells, and rupture of vesicles into neighboring vesicles. Congestion is moderate. Throughout the section are irregularly circular masses of epithelial cells, showing no attempt whatever at any definite arrangement. The most marked involvement is immediately about the larger vessels and bronchi, although extensions into the surrounding tissue are very common, and in places isolated areas quite independent of either large vessels or bronchi are to be found. Peripherally, the masses show healthy cells, whereas in the larger masses central necrosis is marked. Necrotic areas showing vague suggestions of the original cells and at the periphery marked karyorrhexis. The cells of these metastatic nodules are of the same nature as those found in the ovary. A second section of lung shows essentially the same features. In neither section can histological evidence of tuberculosis be found.

Heart shows slight, cloudy swelling of the muscle and a slight overgrowth of connective tissue. Grossly there appears to be slight dilatation of the left ventricle.

Lymph Nodes: The mesenteric and retroperitoneal lymph nodes are greatly enlarged, but show as generally discrete masses having an average diameter of about 1.5 cm. The inguinal nodes are of the same nature. The superior mediastinal nodes also are discrete, but *en masse* show as an enormous mass the size of a child's fist surrounding the primary bronchi and the arch of the aorta. Histologically the three sections examined show diffuse involvement by

enormous masses of cancer tissue, in some places showing simple arrangement in fine strands, but in most cases showing as large masses with central necrosis and with well marked mucoid degeneration.

CASE II.—J. K., twenty-three years of age, male, white; autopsy in the University Hospital by Dr. Forman in 1882. No clinical history was available. The autopsy showed in the pancreas a large nodulated new growth situated in the head of the organ, pressing upward into the hilus of the liver so as to obstruct the bile ducts, cystic, hepatic, and common, producing an enormous distention of the gall-bladder. The liver was enormously enlarged by the presence of numerous variably sized umbilicated metastases which increased the weight to 4350 grammes. The stomach and intestines were normal, but the mesenteric lymph nodes were much enlarged by metastatic involvement.

CASE III.—A. B., age seven years, white male; section submitted to the laboratory by Dr. Davis, of Wilkesbarre. The tissue was from a lymph node which had been removed at autopsy from the region of one of the boy's eyes. Although the section was sent in as glioma, on section the tissue presented the general characteristics of a lymph node, the capsule of which was evident and beneath which we had a portion of the usual lymph node structure. Infiltrating this node and making up a large portion of the section there was a mass of epithelium in the form of large nests of large epithelial cells with broad protoplasm, vesicular nuclei, many of which showed active mitotic figures. Some of these nests in the centre showed as a necrotic mass. There was no arrangement of these tumor cells suggestive of adenocarcinoma nor of squamous called epithelioma.

The diagnosis therefore was secondary carcinoma simplex of lymph node of unknown position.

CASE IV.—M. R., twenty-two years of age, female, white, married, was admitted to the University Hospital in the service of Dr. Musser, December 8, 1905. Her case was studied especially by Dr. Sailer. A brief extract of her history follows:

Born in Russia, she came to this country one year ago and stated that she had always lived fairly well and had never had any harder work than the ordinary housework. Her family history showed no history of neoplasm, tuberculosis, kidney, or heart disease, and there had been no deaths in her immediate family. She stated that she had never been ill before and denied any recollection of the diseases of childhood. She had menstruated regularly except for an absolute amenorrhea for the last four months. She was in good health up to six months before admission, at which time she began to suffer from severe epigastric pain, which had gradually become more and more severe, was later complicated by the appearance of pain at the angle of the left scapula and finally became continuous. She had anorexia, constipation (three movements weekly), but never vomited and suffered no increment of pain on taking food. She had lost flesh and strength progressively since the beginning of the illness.

Physical examination (abstracted): Pupils were equal and reacted normally. Tongue coated and pale, teeth fairly preserved. Expression of suffering. Poor nutrition. The heart was normal in outline and in sounds. The lungs were also normal, but deep inspiration was painful. Liver dullness began at the seventh rib and was movable, gastric tympany was marked and patient rested with thigh drawn up, as if in great pain. A large tumor was present in the epigastrium, about three inches in diameter, spherical in shape, firm in consistence, dull on percussion, showing distinct upward but not expansile pulsation. It showed respiratory and passive movement and shifted from one side to the other with the position of the patient. It was evidently tender to palpation, but the belly muscles were relaxed. Kidneys and liver were not palpable. Right tenth rib was free. There was slight hyperaesthesia on the left side of the belly. The superficial lymph nodes were not palpable.

Blood examination shortly after admission showed hemoglobin, 62 per cent.; erythrocytes, 3,092,000; leucocytes, 9,200. The faeces showed no occult blood or evident blood. The urine was clear, amber, specific gravity 1.025, showed a trace of albumin on boiling and microscopically a few hyaline casts and leucocytes.

She was operated upon by Dr. Martin ten days after admission, who found a large tumor in the pancreas directly involving the posterior wall of the stomach. A piece of the pancreas sent to the Laboratory of Surgical Pathology was reported by Dr. John Speese to show adenocarcinoma.

The patient made a good recovery from the operation and ten days later the blood showed, hemoglobin, 60 per cent.; erythrocytes, 3,620,000; leucocytes, 10,400. The urine at this time was the same as on admission. The patient was comfortable for several weeks after the operation, but in February of 1906 the pain returned and the tumor was found to be increasing in size rapidly. On the first of March she showed beginning jaundice. The jaundice, pain, and emaciation became worse, and she died on March 12, 1906.

Her temperature throughout was practically normal, but the pulse averaged about 100 per minute and the respirations about 28 per minute.

The autopsy was performed by Dr. R. S. Lvenson, the patient on the table showing profound emaciation and marked icterus. The abdominal cavity showed no adhesions except at the site of operation, (notes abstracted):

Spleen showed chronic fibrous splenitis and perisplenitis. Liver showed cloudy swelling, jaundice, and a few small cancer metastases.

Pancreas showed, substituting the normal pancreatic tissue entirely, a tumor mass in the neighborhood of the size of an infant's head, measuring approximately 18 to 20 cm. in diameter. The surface was slightly irregular, in one portion toward the posterior abdominal wall extremely nodular from the presence of a number of lobules the size of a walnut. The color of the surface was yellowish with streakings and mottlings of red; could be cut with firmness; cut section was yellowish white in color with a prominent admixture of red, and was of a somewhat lobulated appearance, the central portion of the lobule containing a yellowish, thick, viscid material. There was also a moderate amount of this same liquid distributed over the remainder of the cut surface. The duodenum surrounded a portion of the tumor to the right and was tense from distension by the tumor. The tumor compressed the bile ducts, but it was possible to force bile into the duodenum with considerable pressure. The greater curvature of the stomach, especially toward the pyloric end, was rather firmly adherent to the mass. The lower border and the free margins of the liver were also adherent; apparently the tumor had metastasized to this portion of the liver by contact. Microscopically, there was externally a rather thin capsule from which sprang delicate connective tissue trabeculae to form the framework for the epithelial elements. The latter assumed a glandular character in which the mucous membrane consisted of a single layer of epithelial cells with protoplasm apparently actively secreting mucus, and oval, deeply staining nuclei, placed near the basement membrane. In many cases the lumina had been so dilated as to form a cyst and apparently subsequent to this papillary ingrowths from the wall had occurred. Due to the cutting of these papillae the appearance of isolated islands was here and there produced. The cavities of the cysts were filled with a faintly bluish staining mass with small eosin staining granules. In the capsule of the tumor and in the tumor itself were scattered areas of leucocytic infiltration. A number of vessels were seen, especially in the capsule into which masses of the tumor had grown.

Diagnosis: Papilliferous cystadenocarcinoma.

Adrenals were normal. Kidneys showed slight chronic interstitial nephritis. Stomach showed no cancerous involvement of the mucosa, the latter aside from slight ecchymosis being normal. Intestines and genitalia normal. Pleural sacs normal. Lungs showed moderate emphysema and edema. Pericardium was normal. Heart showed simple, cloudy swelling of the myocardium.

CASE V.—C. A., twenty-one years of age, female, white. The tissue from this case was removed from the breast and referred to the laboratory by Dr. Daniel S. Rice, of Hastings, Pa.

Under the microscope the specimen showed mainly a loose fibrous or gelatinous connective tissue, in which at places were enclosed practically unaltered mammary ducts and small islets of acini. In the section examined the connective tissue usually showed as islets more or less surrounded by one or perhaps two layers of cuboidal cells, the tissue evidently in the gross specimen projected in fingerlike or lobose masses into the interior of cystic spaces (these spaces represented by the clefts between the papillomatous islets and ingrowths). In addition to these features, however, there were a number of positions very evident irregular proliferations of the epithelium and its in-

filtration into the tissue of the stroma, indicating a malignant change. The growth was only moderately vascular; the vessels well formed. Diagnosis: Papilliferous cystadenocarcinoma of mammary gland.

CASE VI.—E. R., twenty-three years of age, male, white (Mexican). The case was referred to the laboratory by Dr. Hugh Crouse, of El Paso, Tex., who sent a brief note of the history as follows:

The patient was operated upon March 2, 1907, for a tumor of the left testis which was believed to be tuberculous. In October of the same year there were noted intra-abdominal growths, which on exploration were found to be tumor masses extensively involving the omentum and the retroperitoneal space. These increased rapidly and to the extent that the abdominal wall was ruptured and death ensued.

Examination of the tumor of the testis sent to this laboratory formed, with the tunica vaginalis partly adherent, with its epididymis an ovate mass 9.5 cm. in length and 5 and 7 cm. in its transverse diameters. The epididymis, save at the lower portion, was not easily distinguishable from the general mass. It was of a firm, fleshy consistence; and on section the cut surface (after preservation in a formaldehyde solution for some weeks) was of a generally yellowish white color, at places showing patches of necrosis, and with numerous minute cysts throughout. The tunica albuginea was thickened and dense and irregular fibrous trabeculae ramified throughout the tissue.

Microscopically the section showed but few remnants of testicular structure and the tumor was found to be of teratomatous type. It showed smooth muscle cells, cartilage, adenomatous areas, ganglionic nerve cells. What was especially notable in the constitution of the growth were certain tubes and epithelial lined cysts and other epithelial or epithelioid cells invading the stroma. Some of these tubes as suggested in the preceding might be remnants of the tubes of the rete, being so regular in their structure and appearance. Some were, however, undoubtedly spaces lined by cells of the type of cells of Langhan's of the chorion. Frequently in such cases the cells had proliferated and formed thick, many layered coverings of the peripheral columnar epithelial lining cells, the inner layers taking on the characteristics of stratified squamous epithelium. In some instances by the concentric condensation of these latter in the interior space "pearly bodies" of typical appearance had formed; and several of these showed at their periphery (taking the place of the ordinary Langhan's cells) fine examples of syncytia. In at least one place such a syncytial body was noted, too, in the interior space of a cyst without the presence of a "pearly body." Many of the tubes and cysts were filled with Langhan's cells, usually in more or less necrotic condition and generally mingled with numerous polynuclear leucocytes (contents of such spaces often so necrotic that no cells could be longer distinguishable). It was notable that in places the Langhan's cells were found extending in infiltrating manner into the stroma ("wandering chorionic cells"); and several of the cystic areas showed well marked features of adenocarcinoma of the same glandular tubes.

An excellent résumé of the subject of chorion epithelioma of the testis has been made by Frank¹ of New York, and a case was reported recently by Orton.²

CASE VII.—W. B., twenty-three years of age, male, white; coal miner. Tissue was referred to the laboratory through the State Department of Health by Dr. C. C. Miller, of Saxton, who stated that it had been taken from a superficial ulcer (situation not indicated) which had been discharging somewhat viscid cloudy fluid for a considerable time and was believed to be of tuberculous nature.

The growth was a small, rounded, partly encapsulated young, vascular, highly cellular tissue covered by a layer of squamous epithelium of very irregular appearance. The growth was composed of numerous small, rounded, and branching rootlets in which were met occasional large, rounded, and branching rootlets.

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Diagnosis: Squamous epithelioma.

CASE VIII.—E. F., eleven years of age, female, white. Section was submitted to the laboratory through the State Department of Health by Dr. H. Y. Pennell, of East Downingtown, Pa. Dr. Pennell in a letter gave the following history:

Family history: Three grandparents living and all well. Father's father died from hernia. Father and mother and six brothers and sisters all living and well; exceptionally robust stock. Father had nine brothers and sisters, two of these died in infancy of unknown cause. One brother died with a tumor on inside of leg. The others were all living and well. Mother had seven brothers and sisters. One sister died of consumption. The others all living and well.

Patient was eleven years old, had always been strong and healthy except for an attack of pneumonia eight years ago. Present illness began early last summer. Consulted a physician in June, 1907, and following months for jaundice. This (jaundice) with loss of energy and disinclination to work or play or walk far was the chief symptom, until within the last two or three months. She had been going to school the past winter, but had not been well, and her parents thought her lazy. Recently they had noticed that she had become unnaturally stout and so weak that she could with difficulty go upstairs. She complained of no pain excepting over the heart on exertion.

(Quoting from Dr. Pennell's letter): "On examination, I found that she presented a cachectic pallor and slight jaundice of the skin, the jaundice being more distinct in conjunctiva. A general anasarca, more marked as ascites, but affecting also face, hands, and lower extremities. There was distension of the small superficial veins more marked on the sides of the abdomen and inner surfaces of thighs. The abdomen contained so much fluid that I could with difficulty outline the organs, but I thought the liver and spleen both were somewhat enlarged at this time. The heart was hypertrophied, and the apex beat two inches outside the mammary line, and I detected a murmur systolic in time, heard best at the apex. There was marked shortness of breath. Physical examination of the lungs was negative. Temperature was 102°; pulse, 130; and respiration, 34. The urine was normal in quantity and quality, except for bile pigment, which was constantly present in variable amounts. On these physical findings I made a provisional diagnosis of acute endocarditis, which, as you will notice, coincided perfectly with the history.

"With absolute rest and a restricted diet the symptoms improved slightly for about eight weeks. The dropsy disappeared in the face and limbs and became somewhat less in the abdomen. She breathed more comfortably, and lying in bed felt no discomfort at all. The heart murmur was constant, and the temperature ranged from 99° to 103° F. Appetite was fair. Tongue mostly clean and moist. Bowels moved normally. Faces sometimes pale in color, sometimes normal. Urine never contained any albumin nor sugar. The blood count showed nearly 4,500,000 reds and no leucocytosis on several counts. About the first of May the ascites began to increase, and on the fourteenth I tapped her, drawing about eight quarts of clear, straw colored fluid, specific gravity 1.010. When the abdomen was collapsed, the spleen could easily be felt, with its pointed end almost in the median line above the umbilicus, and its rounded lower border felt smooth. The liver was about normal in size, but felt distinctly nodular.

"These abdominal symptoms, the prolonged continued fever, and the whole history of the case forced me to nearly or quite abandon the theory that the heart was the primary cause of trouble, and it seemed the diagnosis must lay between malignant growth or tuberculosis, most likely of the liver or gallbladder and disease of the spleen, particularly leucemia. The latter I was forced to exclude by the blood examination, and the age of the patient made malignant growth seem improbable. In any case the outlook seemed to be hopeless and she was allowed more latitude in diet, etc.

"The first tapping was followed by a week of entire comfort, and at the end of the second week the operation had to be repeated, this time drawing about nine quarts of similar fluid.

"From this time on until the end, twelve days later (June 8th) the fluid rapidly accumulated and the patient's exhaustion increased. She died commonly distended with edema of extra tissue.

"A post mortem examination was obtained with difficulty, and with special stipulation that nothing should be taken away and only the abdomen opened. Owing to this I could not examine the heart. On opening the median line of the abdomen the first thing met was the enlarged spleen, about the size of a normal liver, very dark and uniform in color, soft, and smooth. The small piece sent you was nipped off. The liver was next investigated and found to be of a brownish yellow color, a little smaller rather than larger than normal, very hard, and containing on the surface and within the substance innumerable tumors, of size from those just visible to that of a walnut. The larger ones showing radiations from umbilicated centres. It was a portion of one of these sent for examination. The gall-bladder was empty, normal in size, but almost pure white in color. The stomach and bowels, as also both kidneys and pancreas appeared to be normal. There was no tumor in the pelvis. I regret not having examined the heart and mediastinum, but was convinced at the time that we had the primary seat of trouble in the liver."

Histologically, the section of liver showed the peribiliary connective tissue much increased and the seat of numerous fibroblastic and other early cellular elements indicating the progressive character of the cirrhotic feature of the case. All through this tissue were found small biliary tubules, and scattered in the structure were small, isolated groups of hepatic cells which had been cut off from the lobules by the invading connective tissue. In addition there were scattered numerous smaller epithelial cells of the type of the bile ducts, both as isolated cells and in more or less broken columns. The cirrhotic fibrous tissue penetrated to some extent into the hepatic lobules, but in very irregular manner and degree.

The hepatic tissue showed a variable state; at places (generally rather toward the periphery than centre of the lobule) it was definitely necrosed or fatty degenerated. Much showed a minor grade of fatty infiltration, and much was practically unchanged. No pigmentary deposits noted, either in the liver cells or in the peribiliary tissue.

The general appearance was that of an adenocarcinoma of the biliary ducts, apparently quite diffuse, and accompanied by a progressive cirrhosis, the "cirrhotic biliary cancer" of the French.

Spleen showed the capsule of normal thickness in the section examined; some minor sclerotic increase in trabeculae; vessel walls not sclerosed. The Malpighian follicles slightly larger than usual, apparently from increase in number of their lymphoid cells. There was not shown any special hyperæmia of the pulp, and there was no pigmentary deposit. The pulp of the spleen was unusually open, the reticulum spread out as though by an edematous distending fluid. This condition brought into more than usual prominence the endothelial elements, but there was no evidence of endothelial proliferation.

CASE IX.—L. C., fourteen years of age, male, white. The case occurred in the service of Dr. J. T. Schell in the Northwestern General Hospital and was studied in this laboratory by Dr. W. Taylor Cummins,³ who also showed the specimen as a "card specimen" before the Pathological Society early in this year.

The family history showed nothing of neoplasms, the mother and one brother having died of pulmonary tuberculosis. Aside from having chorea two years ago the patient had always been well. The present illness dated back four months before death, when diarrhœa developed with vague abdominal pains. The condition progressed hand in hand with emaciation, and shortly after his admission to the hospital exploratory operation was performed. This showed the presence of a large mass in the pelvic region and almost universal adhesion of the peritoneum. A small portion of the omentum was removed for diagnosis. The patient died a few days later, but no autopsy was permitted.

Grossly the tissue consisted of a large mass of tissue, of irregular thickness and presented numerous small nodular areas (2 to 3 mm. in diameter) some of which were yellowish white and grayish white in color resembling areas of fat necrosis, while other nodules were partially translucent and had the general appearances of mucous tissue. Between these areas the tissue was quite thin and had the general appearance of omentum. Some of these yellowish white areas were as large as 2 mm. in diameter and irregular in contour resembling fatty tissue. There was one large

nodule resembling a soft fibroma in consistence and structure, there being a definite coarse framework of fibrous tissue with intervening tissue looser and much softer in consistence. This was roughly triangular in shape and measured about 2 cm. on a side.

Microscopical examination of two sections was made. One taken through the small nodular masses including adipose tissue showed the tissue made up largely of the adipose type through which were found small masses of lymphocytes and here and there an eosinophile. In addition there were several small, well defined, compact masses made up of lymphocytes and numerous rather large cells with deeply stained nuclei, many of which were eccentrically placed. The protoplasm of many of the cells contained fine, bluish granules. Those in which the granules were absent presented a vacuolated appearance. There was a coarse, bluish reticulum between many of the cells. Quite a few eosinophiles were seen in these areas.

The other section was made through the large mass described under gross appearance. There were coarse and fine trabeculae ramifying the section. Much of this tissue was loose and presented many fibroblasts. Between the trabeculae were found large and small nests of epithelial cells, many of which showed advanced mucoid degeneration, the nuclei being eccentrically placed and the protoplasm filled with finely granular bluish material. In addition there was a well marked, bluish reticulum present, and these masses in many places showed almost complete destruction of the cells by the mucoid material.

Diagnosis: Metastatic mucoid carcinoma of omentum (probably originating in the descending colon, or sigmoid).

CASE X.—S. A., nineteen years of age, female, white, single, milliner. This case was referred to the laboratory through the State Department of Health by Dr. H. F. Hoffmeister, of Mauch Chunk, Pa., who stated that the tumor was removed from the outer upper quadrant of the left breast, where it was first observed two months previously.

Sections showed an extensive stroma of fibrous tissue of fairly dense character, most dense immediately about the scattered lobules, acini and ducts of the mammary gland which were found here and there in it. These glandular structures were for the most part, very definite and their epithelium well limited by the membrana propria. Some had become cystic. Most were lined with a single regular layer of epithelium; but here and there marked proliferation of the epithelium was shown.

While mainly, from the description, the growth was one of an intercalicular fibrosis or fibroma, some of the gland areas showed very clearly an early but unmistakable extension of cells beyond the basement membrane into the surrounding fibrous stroma, indicating the assumption of a cancerous change; and making the original tumor a scirrhous adenocarcinoma. Probably, however, the growth, if the specimens were typical of the whole tumor, was of a relatively low grade of malignancy among mammary cancers.

Diagnosis: Intercalicular fibroadenoma of breast with early malignant degeneration.

A brief résumé of this series of cases will show that in point of age the youngest is seven years, the others in order of age being 10, 11, 14, 10, 21, 22, and 23 (three cases). It will be seen that the frequency increases with the age. In reference to sex there is found an equal division, five being male and five being female. The duration of the disease has been short in all the cases where a good clinical history has been available. In Case IX the patient died after one year. The general symptoms have been marked in so far as they have been recorded, but in none of the cases was cachexia noted.

These observations merely support those of other observers, particularly those who have studied large numbers of cases collected from the literature. In a review of the recent literature on the subject the paper of Phillip⁴ stands out as being of superior merit as a complete and critical review of the cases

³Communicated to the Pathological Society of the University of Pennsylvania, Philadelphia, December 1, 1909.

⁴Phil., N. S. vol. No. 2, p. 116.

of cancer in early life. He reviewed 390 cases of cancer in children under fifteen years of age, but found that only eighty-seven of these could be considered authentic in the light of our more modern knowledge of the anatomy of cancer. To this number he adds six cases, making a total of ninety-three cases in the literature up to that time. Since then Lindemann¹ has reported a case in a boy, seventeen years of age, who died with a cancer of the rectum after only two weeks' illness according to the history. The patient, however, appears to have died from the obstructive influence of the cancer rather than from metastasis or toxæmia. In addition he has collected a considerable number of cases less than thirty years of age, but his report is not highly critical and needs little detailed review. From these papers and from my own cases it would appear that in the face of the enormous number of cases of cancer in adult life the number in early life is very small, and that cancer before the age of twenty-five or thirty years is extremely rare. In Lubarsch's laboratory there were, in 11,000 autopsies, 1,010 cases of cancer, of which only one appeared before fifteen years of age. In 1,600 additional cases operated on for authenticated cancer there were three patients under this age limit; thus, in a total of 12,600 cases there were only four patients in this early period of life (0.03 per cent.).

In childhood (before fifteen years) Phillipp notes that cancers of the digestive tract including liver and pancreas, constituted forty-six per cent. of all the cases, whereas in adult life it is estimated at about from thirty-five to forty per cent. Following in order of frequency were cancers of ovary, forming 20.45 per cent., while those of the testicle formed only 3.2 per cent., the ovarian tumors being far more common in childhood than in adult life (5 per cent.), and the testicular tumors forming about the same proportion as in adult life. Next in frequency were cancers of the skin. Cancers of the kidney, formerly supposed to be so frequent, are in reality rare, the mistake being due to the inclusion of mixed tumors and sarcomata.

It is found in practically all references to the subject that the occurrence of these tumors becomes less frequent as we approach the natal period; only two cases at birth being on record, according to Lindemann.

In early life the sexes seem to show equal predisposition to cancer, the boys showing more cancers of the gut tract and skin; compensated for in the girls by the relative frequency of ovarian cancers.

The general opinion of all observers is that cancer runs a much more rapid course in childhood and early life than in adult life, this probably being due to the fact that the rapid consumption of protein on the part of the tumor takes from the child that rich protein supply so necessary to its growth and activity during the developmental period of life, thus diminishing its resisting power. So it follows *a priori* that the younger the child the more rapid usually is the progress of the tumor, this being borne out by my study.

The generally accepted theories as to the ætiology of cancer are influenced little by these reports, al-

though it would appear at first glance that the traumatic theory would suffer. Sites such as lip, tongue, stomach, breast, gallbladder, urinary bladder, uterine cervix, are frequent sites of cancer in adult life and are probably so because of the predisposing influence of traumatism or prolonged irritation. The essential and underlying cause of the condition probably is general, and the disease localizes here because of the traumatic factor. The same traumatic or irritative factors are not present in childhood and, curiously, in support of the traumatic theory is the fact that these situations mentioned are very rarely the site of cancer in early life. In this relation it is interesting to note that ovarian cancers occur chiefly at puberty, a time when increased blood supply and other factors are stimulating rapid growth of the epithelium, a fact favoring the view that chemical stimulation (possibly somewhat in the nature of the hormone) plays a very important part in the production of cancer.

My thanks are due to the gentlemen whose cases I have used in this report, and to Mr. J. B. Nutt, of the third year class, who has helped me considerably in its preparation.

1320 SOUTH BROAD STREET.

FRACTURE-DISLOCATION OF THE SPINE.

*With Report of a Case.**

By H. STUART MACLEAN, M. D.,

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Cases of fracture-dislocation are of such infrequent occurrence and of so serious a nature as to prompt the report of one which has recently come under the care of the writer.

Fractures of the vertebral body are usually due to violence acting in the long axis of the spinal column, combined with an arching or bending of the spine. The vertebral body may be crushed or mashed, or fragments of the body may be splintered off, usually from the upper anterior border and, as a rule, wedge-like in shape. Fractures of the spinous processes or arches are produced by direct violence, and while they may not produce the characteristic kyphotic deformity of a fracture of the body they are apt to present a more extensive bone injury and resultant damage to the cord. Fractures of the body occur usually in the lower dorsal or lumbar regions where the bone is large, thick, and of softer or more spongy consistency. Fractures of the spinous processes and arches may occur at any point of the spine, depending upon and corresponding to the site of violence. They are liable to work greater damage to the cord on account of the fact that the injury to the bone may be more extensive and the fragments of the broken arch forced in against the cord, tearing the membranes and crushing the contents. Localization of a fracture is done by noting the site of the deformity, palpation, and a study of the symptoms of cord pressure. As a rule, sensory and motor disturbances will manifest themselves along the distribution of the first and second nerves of exit below the point of injury. Loss of sensation

*Read before the annual meeting of the Medical Society of Virginia, held at Roanoke, October 4, 5, 6, 1909.

deepens as we pass downward over the body, sometimes becoming complete only as low down as the third nerve below the point of injury (particularly in injuries of the lower dorsal region).

Dislocation accompanying fracture occurs in cases of direct violence. It occurs more frequently in the cervical and upper dorsal regions and may be partial or complete, lateral, or anterior or posterior. The partial, or dislocation of the articulation on one side, is less liable to do serious damage to the cord, although equally serious conditions may be produced by accompanying hæmorrhage into the cord. Following is a record of the case referred to:

CASE.—On July 14, 1909, R. N., aged thirty-four, received an electric shock while climbing a telephone pole in Petersburg, Va., and fell a distance of eighteen or twenty feet to the street, striking his back on the edge of the curbstone. Complete loss of motion and sensation from the waist down was immediate, together with severe pains up and down his back. He was carried to the hospital where I saw him a few hours later with his physician, Dr. John G. Rennie. He had complete loss of sensation from the line encircling the abdomen on a level with the iliac crests, complete loss of control of both bladder and rectum, and loss of motion in both legs. The reflexes were abolished. Patient was considerably shocked, pulse 110, respirations 44. There was a marked depression over the eighth and ninth dorsal vertebrae with crepitus of their spinous processes. An operation was immediately done as follows:

A four inch incision over the site of the injury exposed the spinous processes and it was found that the eighth and ninth were crushed and the tip of the seventh broken off. Upon removing them the arch of the ninth vertebra was found to be crushed and driven in on the spinal canal, while the eighth arch was fissured. Both arches were removed and the cord exposed. The cord was bruised or compressed at the point of pressure from the ninth arch, but not divided. The superior articular processes of the tenth vertebra showed clear and glistening, and upon investigation it was seen that the ninth vertebra had been dislocated forward, the inferior articular processes of the ninth vertebra "jumping" or sliding over the superior of the tenth. To reduce the dislocation a Carmalt artery forceps was introduced just beneath the arch of the seventh vertebra, and using a chisel placed across the wound below the ninth vertebra as a fulcrum, with the patient's shoulders pulled well forward, the displaced vertebra was lifted back into position, snapping back and locking firmly. A probe was passed up and down the spinal canal for some distance to be sure there was no further obstruction, and the wound was then closed, the muscular structure being drained with a few strands of twisted silk worm gut.

On account of the firmness with which the bones came together it was considered safe to dispense with any fixation dressings other than ample applications of adhesive plaster applied to limit bending of the spine, as it was feared that the handling necessary to apply a plaster cast might reproduce the dislocation.

On August 1st it was found that a partial dislocation of the right articular processes between the ninth and tenth vertebra had occurred while the patient was being shifted, so an incision was made and the deformity corrected. There had been no change in his condition up to that time, but it was evident that the slipping of the joint had not done any damage, as the removal of the eighth and ninth arches precluded a renewal of the pressure. After the second operation the patient was strapped to a well padded board splint, fitted to his back, with an opening in the centre to allow the wound to be dressed. This splint was kept on for three weeks, during which time the patient was kept on his face on an air mattress. Throughout August the patient had involuntary reflex jerking movements of his legs, due to stimulation of the spinal centres, but no voluntary motion and no return of sensation. The usual cystitis developed, with rise of temperature, but this was kept well under control by daily irrigation with boric acid solution.

About September 1st the patient began to regain some voluntary movements of the legs, particularly the right one.

and there was a noticeable improvement in the tonicity of the bladder and the retention of urine. As yet there had been little or no evidence of improving sensation, but on October 7th Dr. Rennie reported to me that there was decided improvement in the voluntary movements of the limbs. The patient's general condition was encouraging. The temperature, due to the cystitis, was subsiding, his limbs showed less atrophy than was expected, and under the influence of daily alcohol and olive oil rubs were now even putting on flesh. There were no evidences of diminished resistance and nourishment in the way of gangrene or trophic sores, or even irritation of the skin of the affected limbs. There was one bed sore over the lumbar region which came from pressure of the back splint applied after the second operation, but this steadily improved and is about healed.

Of course, the prognosis is grave as to the outcome even as yet, but the fact that there has been material improvement gives us reason to hope for more of it, as it is known that these cases at times make very slow progress, yet finally recover.

The question most frequently raised in these cases is whether or not to operate. Nonoperative treatment of the fractures and manipulation of the dislocation have their advocates and they quote statistics in their favor. But the fact remains that in any case of fracture with partial or complete paralysis, the extent of damage is so uncertain as to justify operative intervention to clear up the obscurity and afford an opportunity to remedy the harm done. It should also be borne in mind that in fracture-dislocation the danger from attempts to reduce by manipulation is far greater than from the open operation. Undoubtedly, in the case reported nothing would have been gained by expectant treatment with the existing pressure on the cord, nor would I have been willing to attempt reduction by manipulation under the circumstances. One unusual feature in the progress of this case is the marked improvement in motor symptoms with little or no sensory improvement. This can only be explained on the ground that the injury to the cord by pressure of the crushed ninth arch did most damage to the posterior columns.

The question occurs as to this man's condition in the event of restoration of the functions of the cord. There probably will be a weakened condition of the vertebral column owing to the loss of the spines and arches and the supporting supraspinous and infraspinous ligaments and ligamenta flava, but it is hoped that connective tissue development, with the added strength of the muscles which were brought into the wound from each side to fill up the gap, will provide a reasonable substitute for this loss. Further than that the question resolves itself into the application of an appropriate brace if one is necessary.

A large share of the credit for the favorable progress of the case must be given to Dr. Rennie, whose faithful and untiring attendance upon the patient has warded off these unfortunate sequelæ which so frequently terminate these cases.

The case is reported because of the extensive damage done by the accident, the complicating dislocation, the great lapse of time before evidences of recovery appeared, the marked motor improvement in advance of sensory improvement, and the recent satisfactory progress of the case.

I hope to report further on the case at the next meeting of the society.

406 WEST GRACE STREET.

THE MANAGEMENT OF A CHOLERA CAMPAIGN IN THE PHILIPPINES.

BY ALLAN J. McLAUGHLIN, M. D.,
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Passed, Assistant Surgeon, Public Health and Marine Hospital
Service; Assistant Director of Health for the Philippine Islands.

I will consider the management of a cholera campaign from the viewpoint of the provincial health officer, or, as he is called in the Philippines, the district health officer.

His measures will vary according to the presence or absence of infection in his province. If his province is uninfected but is menaced by the proximity of cholera in other provinces he must put into effect the following measures:

I.

PREVENTIVE MEASURES.

1. Establishment of a system of securing and recording information.
2. Organization of available force for sanitary work.
3. Enactment of necessary ordinances.
4. House to house inspection.
5. Safe disposal of feces of the entire population.
6. Supervisory control of the water supplies.
7. Supervisory control of food and drink and prohibition of certain food stuffs.
8. Campaign of education.

1.

SYSTEM OF SECURING RECORDING, AND FORWARD- WARDING INFORMATION.

The first duty of the health officer is to locate accurately the extent of infection. This is best done by personal investigation and inspection of the territory under his control, and by recording the information secured upon maps.

The provincial health officer should have in his office a large wall map of the Philippine Islands and he should mark the infected municipalities with colored pins or flags, carefully noting the progress of the disease in contiguous provinces. Small flag pins in three colors are very useful. A blue flag, with date, indicates the first case. A red flag, without date, indicates present existence of cholera. A white flag, with date, replaces the red flag when the infection is extinct.

A large map of his own province is to be used in the same way, to follow closely the march of cholera in the province.

Most important and necessary are the maps of the municipalities. A Philippine municipality is made up of many barrios, often as many as twenty. These municipalities cover large areas, and a barrio may be several miles from the *poblacion* or centre of the municipality. When a provincial health officer records cases as occurring in the town without reference to the barrio, he has a very inaccurate idea of the location of the infection. He must always record on a proper map of the municipality the exact location of the infected house and barrio.

I remember receiving reports of a rather serious outbreak in three municipalities in Pampanga Province. These three infected towns covered an enormous territory and included forty-four barrios and 30,000 inhabitants. Upon personal investiga-

tion, I found the infection in three barrios contiguous, one barrio of each municipality. The real extent of the infected territory was small and general disinfection was done. Within forty-eight hours a few cases were reported and after three days the towns were clean and remained so.

A daily record should be kept of cases and deaths of cholera by municipalities within the province, on a form similar to the following:

Daily Cases and Deaths. Province of Pampanga. July, 1909.

Date.	Bacolor		Gueyga		Lubao		Porac		S. Fernando		Etc.	
	C	D	C	D	C	D	C	D	C	D	C	D
Ju. 10.....	3	4	0	0	0	0	0	0	0	1	2	
11.....	9	4	0	0	0	0	0	0	0	1	0	
12.....	5	2	0	0	2	1	1	1	3	2		
13.....	7	3	0	0	0	0	4	1	0	2		
14.....	14	5	1	1	0	0	3	1	1	0		
15.....	3	4	1	0	1	0	1	1	1	1		
16.....	2	5	1	1	2	1	0	0	3	2		
17.....	4	3	2	3	1	1	3	2	2	3		
18.....	6	5	1	1	2	2	1	0	2	1		
19.....	5	2	0	0	1	2	4	0	0	0		

etc.

This form can be used also as a part of the monthly report of cholera.

The district health officer is expected to establish prompt communication between the municipal health officer or person acting as such and his office. He is held responsible for the prompt reporting of suspicious cases. If telephone or telegraph communication exists it should be employed in reporting cholera cases. If communication by wire is not possible, service by mail or messenger must be established.

The district health officer should exact reports from municipal health officers daily after 5 p. m., and when cholera is actually present, twice daily, as soon as possible after 8 a. m. and 5 p. m.

The district health officer is required to report cholera cases and deaths by wire to the central office of the Bureau of Health daily, using the following form as a model:

Health, Manila.

Cholera: Ambos Camarines; Baao, seventeenth, four, two; eighteenth, six, five; Iriga, seventeenth, nine, four; eighteenth, six, one; Albay; Legaspi, sixteenth, seven, six; Bato, sixteenth, one, zero.

He is further required to make the following reports to the Bureau of Health:

A weekly report by letter of the cholera situation, the disposition of personnel, etc., forwarded to the central office of the Bureau on Saturday of each week.

A monthly résumé report by letter, giving the course of the disease, the disposition of personnel, the special measures taken, and any other interesting features.

2.

ORGANIZATION OF THE SANITARY PERSONNEL.

In organizing the sanitary personnel, the district health officer will meet the greatest difficulty with which we have to contend: viz., the extreme poverty of the average Philippine municipality. Almost invariably, in organizing a provincial town, I have been compelled to make use of municipal police and volunteers for inspection work, because of the inability of the municipality to pay salaries of municipi-

pal sanitary inspectors. However, the health officer must make use of whatever material he may find available, municipal or provincial sanitary inspectors, municipal police, *tenientes de barrios*, and other employees or volunteers. Usually, the Bureau of Health finds it possible to send a few insular sanitary inspectors (Americans) and assistant sanitary inspectors (Filipinos) from the highly trained force in Manila. These men are very valuable as instructors, and in supervising the house to house inspection work.

For some reason, municipal presidents do not always favor using police for sanitary work. They will advance as an excuse for not so employing them that the police have other important duties, such as the maintenance of public order. It can usually be demonstrated that sanitary inspection duty is not inconsistent with their other duties and that the maintenance of public order will be better effected by patrolling the *barrios*, rather than by sitting or sleeping in the *presidencia*. In asking for municipal police for this duty, the point must be made clear that in the event of disturbance of public order the police would naturally be recalled from sanitary inspection duty.

Secure all available personnel for house to house inspection; municipal police, municipal and provincial sanitary inspectors, *tenientes de barrios*, and other employees, are usually available. Divide the municipality into districts; the districts should be of such size as to permit one man to inspect each house and premises once daily in a working day of eight hours. Place one inspector, policeman, or volunteer in each district. Place one responsible man, such as an insular sanitary inspector, insular assistant sanitary inspector, or provincial sanitary inspector, in charge of the entire inspection force as chief inspector. He should have transportation to enable him to cover the entire municipality quickly, and he should visit all inspectors in their districts and supervise their work daily. In employing and using provincial sanitary inspectors do not employ them in the town to which they belong.

Municipal councils will sometimes refuse transportation (*carromatta* or saddle horse) for the chief inspector, on the ground of lack of funds. If the inspectors, the local health officer, and the justice of the peace do their full duty in finding and punishing violators of the health ordinances, considerable daily revenue will be derived and authority can be secured to employ this money for necessary sanitary expenses.

In addition to the inspection personnel, reserve sufficient force to disinfect houses or contacts. The size of the force will depend on the size of the outbreak. Before cholera appears, it will usually be sufficient to train one or two men under the direction of the president of the municipal board of health, or the chief inspector, in the elements of disinfection.

Provincial organization, at the capital. The district health officer; one to three experienced sanitary inspectors, to instruct provincial sanitary inspectors in house to house inspection and disinfection, and to take charge of general disinfection parties; a number of provincial sanitary inspectors under instruction, and in reserve for general disinfection or inspection work in the province.

Municipal organization, in each municipality. One local health officer; one insular or provincial inspector as chief inspector in charge of house to house inspection, and instruction of municipal sanitary inspectors, municipal police, or others acting as municipal sanitary inspectors; a number of municipal sanitary inspectors, municipal police, or others acting as municipal sanitary inspectors, for house to house inspection; two municipal sanitary inspectors for disinfection work under the direction of the municipal health officer.

The district health officer should divide the provincial capital into health districts, making of it a model town for demonstrating house to house inspection and disinfection to the provincial inspectors.

After instructing a group of provincial inspectors thoroughly, these should be sent out to the municipalities as chief inspectors, and they in turn will instruct the municipal sanitary inspectors in their duties. The district health officer should replace the provincial inspectors sent to the municipalities with others in need of instruction, until all have been instructed. He will then keep a reserve of provincial inspectors for general disinfection work. This procedure ensures two things; a trained provincial personnel and a trained reserve available for immediate duty in the worst infected places.

House to house inspection and house disinfection should be performed by municipal sanitary inspectors under the supervision of a provincial sanitary inspector. General disinfection of *barrios* should be performed by the reserve force of provincial sanitary inspectors under the direction of the district health officer or one of the experienced sanitary inspectors from provincial headquarters.

Material. Intelligent material may be obtained in most provinces at a salary of from 15 to 30 pesos per month. This is raw material, but two things only are necessary to convert these men into efficient inspectors and disinfectors, viz., patient instruction and frequent inspection.

Without frequent inspection, the patient instruction is wasted, and the chief inspector in charge of municipal house to house inspection must inspect daily the work of his men in their districts, and these chief inspectors and local health officers must be inspected at least once in every forty-eight hours by the district health officer or one of his sanitary inspectors from provincial headquarters.

3.

ENACTMENT OF NECESSARY ORDINANCES.

Such ordinances as may be necessary to enforce the foregoing instructions, if not already in force, should be urged upon the municipal council, and any delay or difficulty encountered in securing their enactment should be promptly reported to the Bureau.

Municipal ordinances should provide for proper disposal of *fæces*; collection of garbage; sanitary maintenance of premises; proper care of food and drink; and should impose adequate penalties for violation of the same.

4.

HOUSE TO HOUSE INSPECTION.

The object of house to house inspection is (1) to find cases of suspicious illness and (2) to enforce sanitary maintenance of premises.

Great stress must be laid upon the necessity for courtesy on the part of inspectors at all times. He must not depend upon his uniform alone for announcing the purpose of his visit, but he must repeat some such formula as this: "Excuse me, I am a sanitary inspector and desire to enter your house for inspection," or words to that effect. By the time he has repeated this formula, he should have at least one foot across the threshold.

The inspector should ascertain the number of persons in the house, making a careful note for future use, and should insist upon seeing all of them. He should leave *Cholera Circular No. 1* with the head of the family, and should be prepared to explain the contents of said circular and answer any questions pertaining thereto. He should pay particular attention to the methods employed for the care of water and food. He should insist that water and food be protected against flies and contamination from any other source. He should insist upon the removal of garbage, refuse, and filth, or any condition which favors the breeding and nourishment of flies.

The ground surface under and around the house must, whenever practicable, be rendered dry by filling and draining. The throwing of wash water or other wastes in the immediate vicinity of the house must be prohibited and prevented. For the correction of insanitary conditions, he should give verbal orders. If these orders have not been carried out by the time of his next visit, he should report the matter immediately to the chief inspector for action.

If he finds a case of suspicious illness, he should (1) place the house in quarantine; (2) notify by messenger or any other means available, the local health officer or the chief inspector; (3) upon the arrival of the local health officer or the chief inspector with the quarantine guard, he will resume his house to house inspection.

5.

DISPOSAL OF FÆCES.

The inability, through lack of funds, to provide systems of disposal of wastes in the provincial towns is largely responsible for the great difficulties which attend the suppression of cholera in the Philippines.

The existence of bacilli carriers renders necessary the safe disposal of the fæces of the entire population. Expensive systems of disposal of wastes are out of the question for the average Philippine town. In these poor towns, where no sewer or pail system exists, every householder should be required to dig a simple pit closet and to cover each fæcal deposit promptly with lime or fresh earth. If the ground is low and the pit fills with water in the rainy season, a disinfecting solution should be furnished to the householder and the inmates of the house required to deposit their dejections in this solution.

6.

SUPERVISORY CONTROL OF THE WATER SUPPLY.

1. Artesian wells. The Philippine government is spending 150,000 pesos yearly in drilling artesian wells. The director of health selects the itineraries, and wells are being bored in the provinces which habitually suffer from cholera epidemics. If an

artesian well is available in a district infected or menaced by cholera, water from all other sources should be prohibited.

2. River or stream. If the source of water supply is a river or stream and is uninfected, prevent pollution of the stream with human excreta and prohibit the washing of clothes in the stream. If the stream is infected or if its pollution cannot be prevented, have the water boiled in large tanks and issued under guard, and prohibit the use of unboiled water.

3. Surface wells. If the source of water supply is surface wells, select the best of these, one in each barrio, close the others, and protect the wells selected from pollution. If no wells can be found which furnish safe, potable water the contents of the well may be rendered safe by the permanganate method, or water can be boiled and issued under guard.

7.

SUPERVISORY CONTROL OF FOOD AND DRINK.

Irritating and putrefying or fermenting foods should be prohibited and all vegetables or fruits which are eaten raw, except bananas, oranges, and mangos.

The closest supervision should be exercised over markets, tiendas, restaurants, and any other place where food and drinks are manufactured and sold. Unnecessary handling of food stuffs should be prevented and all food stuffs should be protected from flies and insects. No drinks should be allowed to be sold containing water which is neither distilled nor boiled.

8.

CAMPAIGN OF EDUCATION.

Every effort should be made to instruct the people in the prevention of cholera, as outlined in *Cholera Circular No. 1*. The assistance of the cura parroco, of missionaries, and school teachers should be secured to cooperate in instructing the people, and inculcating habits of cleanliness. Special stress should be laid upon the use of boiled water, freshly cooked food, protection of food and drink from flies, and washing of the hands before eating. Teach the people that the infection of cholera is primarily in fæcal matter alone, and that if they properly dispose of their fæcal matter, no great spread of the disease is possible.

Cholera Circular No. 1 is as follows and is printed in the principal native dialects:

CHOLERA CIRCULAR NO. 1.

Cholera has reappeared in the city of Manila and its vicinity. THIS DISEASE CAN BE INTRODUCED INTO THE SYSTEM ONLY THROUGH THE MOUTH. It is caused by organisms too minute to be seen except with a microscope. These organisms are readily killed by heat, and the disease may therefore be successfully combated by the proper use of fire and hot water, which are at the disposal of every one.

To avoid cholera and prevent its spread observe the following precautions:

1. Boil all drinking water and place it while hot in covered vessels. Do not dip up the water when needed, but POUR it into drinking cups, otherwise cholera germs may get into the water from the hands.

2. Do not touch drinking water or food with the hands unless they have just been washed in water that has been boiled.

3. Eat only cooked food. Avoid all fruits, raw vegetables, and raw fish. Dried fish may be made safe by thoroughly heating. Fruits may be made comparatively safe by dipping them a few seconds into boiling water.

4. Flies may carry cholera germs on their feet from human excreta to food; therefore, to protect it from flies, cover all food immediately after it is cooked.

5. If cholera appears build smudges under houses to drive flies away.

6. Boil all water used for diluting milk.

7. Cook all meats and fish thoroughly so as to heat the same throughout.

8. Keep kitchen and table dishes thoroughly clean and scald them before using.

9. Keep the place in which you live, the ground under the house, and everything pertaining to it, clean.

10. Outhouses, closets, and vaults can be made safe by putting in lime or carbolic acid. When this cannot be done dejecta must be buried or thoroughly covered with earth.

11. Isolate all the sick. It is recommended that a house in each barrio be set aside for this purpose.

12. All the dead should be embedded in lime and buried three feet under the surface.

13. Filth, or vomit and the dejecta of the sick should be promptly cleaned up with boiling water and buried.

14. Clothes and bedding used by sick persons must either be burned or boiled. Do not wash any clothes near wells or springs nor permit surface water to run into any well or spring.

15. Municipal presidents and municipal councilors should enact these rules as ordinances and see that they are enforced.

16. All school children are requested to inform their parents of these rules, which, if observed, will prevent great loss of life.

When cholera exists within his province the district health officer will be obliged to make use of the following measures for its suppression:

II.

SUPPRESSIVE MEASURES.

1. Quarantine.
2. Disinfection.
3. Examination of stools.
4. Observation of contacts.

I.

QUARANTINE.

The only quarantine necessary in the prevention or suppression of cholera is the quarantine of infected houses. Interbarrio, intermunicipal, and interprovincial quarantines are seldom feasible and are almost invariably ineffective. Such quarantines impose unjustifiable restrictions upon commerce and personal liberty.

House quarantine is the only quarantine which a municipal or district health officer may apply legally without authority from the Secretary of the Interior and the director of health.

Quarantine of an infected house should be placed immediately upon discovery of the case, and maintained rigidly until death or recovery of the patient. Quarantine should include all persons exposed to infection whose clothing, hands, and feet have not been disinfected or persons living and remaining in the infected house.

The municipal police have demonstrated repeatedly their inefficiency as quarantine guards. They are worthless for this duty and may be employed to better advantage in the house to house inspection work. The best quarantine guard available is the constabulary soldier. There are no hospitals in the provincial towns, and the patients must be quaran-

tined in the houses. A lax quarantine is a very serious matter, and if the outbreak is serious the use of constabulary is almost a *sine qua non*.

2.

DISINFECTION.

Disinfection in the Philippines has some peculiar features. The absence of effective systems of disposal of wastes greatly increases the amount of disinfection necessary. The careless handling of fecal matter by the people, the presence of great quantities of flies, the numerous unprotected wells and water holes from which the people use the water, make necessary measures which are not found in the textbooks, and which might excite ridicule in one unfamiliar with Philippine conditions. Gaseous disinfection is not possible in Philippine houses, but this fact is unimportant in cholera work, as the disinfection is better accomplished by other means.

Much of the spread of cholera in the Philippines was formerly due to the old idea that disinfection of the infected house was alone sufficient to check the spread of cholera. Filipino health officers still report in cases of cholera that all precautions have been taken. Upon inquiry one finds that disinfection was confined to the house in which the patient was found. As a matter of fact, the cholera patient rarely gets his infection within the house, but usually gets it from outside. Infected food or drink is brought in or flies convey the germs from the outside to food within the house. This idea of confining disinfection to infected houses is derived from the custom prevailing in large cities with good water supplies and proper systems of disposal of wastes. Something more is necessary in the Philippines. The original focus outside the house must be sought and for this purpose the general disinfection of large areas is necessary.

The sun is one of our greatest disinfecting agents and combined with dry ground surfaces is fatal to cholera organisms. For this reason the drainage or filling in of swampy areas is of great assistance in general disinfection. It greatly lessens the infectible area and has been used with good results in swampy districts where stools were commonly thrown on the ground. Useless vegetation encourages the improper disposal of feces, and obstructs the disinfecting action of the sun. All useless vegetation should be cut away from the immediate vicinity of houses.

Three kinds of disinfection are recognized: House disinfection; general disinfection; and lime disinfection.

House Disinfection.

House disinfection should include disinfection of contacts desiring to leave the premises.

As the patients must remain in and be cared for in the houses in which they are found, one room is first disinfected, and the patient placed therein with a person acting as nurse. Disinfecting solution is furnished for the treatment of excreta, and instruction in the care of the sick and in self protection is given to those in attendance on the patient. The rest of the house and its contents are then disinfected by washing or by immersion of the articles in a disinfecting solution. The contacts are disinfected

and isolated; they are held under observation for five days and whenever possible their stools are examined for cholera vibrios.

Disinfection of contacts: Ordinarily, a thorough washing of the exposed parts of the body and a change of clothing will be sufficient. It is sometimes desirable to reduce the number of persons in the infected house, and a contact leaving the house during the quarantine period should have a more thorough disinfection; such an individual should take a complete bath with soap and clean water, then washing the entire body in a 1 in 4,000 corrosive sublimate solution. The district health officer should give instructions concerning the use of corrosive sublimate and its poisonous properties, to prevent its getting into the eyes. He should never permit the use of carbolic acid for disinfecting the person, as sufficient carbolic acid may sometimes be absorbed by the skin to cause fainting and serious symptoms of poisoning in those who are susceptible.

Disinfection of textiles and fabrics. Immerse all blankets, garments, mats, hats, chinelas, crockery, and other nonmetallic articles that may be infected, in a 1 in 1,000 corrosive sublimate solution or preferably a five per cent. solution of carbolic acid. Metallic articles may be placed in a carbolic solution. Garments soiled with feces or vomit should be soaked in the carbolic acid solution, and carbolic acid solution should also be used for porous earthenware, metal cooking utensils, knives, etc. The immersion should be complete and must be maintained for at least twenty minutes. The articles should then be removed and allowed to dry in the sun. Easily movable articles should be taken outside of the house for disinfection in order that they may not be recontaminated.

Disinfection of houses: Where houses may be disinfected and their destruction is not necessary, collect any loose straw, pieces of wood, paper, or other combustible material in the house, remove it, and burn it at once. Spray or mop the walls thoroughly with a five per cent. carbolic acid solution and mop the wooden floors, or better still, scrub them with a stiff brush, using the solution freely. Dirt or stone floors should be sprayed thoroughly with a five per cent. solution of carbolic acid.

The destruction of property to prevent contagion other than pillows or mattresses used by the sick will rarely be necessary. No article should be destroyed except by authority of the district health officer.

Disinfection of wells. Sound the well and estimate the quantity of the contained water from its depth and the diameter of the well. Add enough potassium permanganate, dissolved in a bucket of water, to convert the contents of the well into a 1 in 1,000 potassium permanganate solution. Mix this solution thoroughly with the water in the well, and wash down the sides of the well with the resulting weaker solution; if possible, have the same sides scrubbed with a stiff brush, using plenty of the potassium permanganate solution in the well. Leave the well undisturbed for twelve hours. If at the end of that time the water in the well is not a deep wine color, add the same amount of potassium per-

manganate in solution and let it stand an additional twelve hours, after which empty the well by pumping or bailing or remove the water until that which remains is clear.

Disinfection of cesspools and vaults. Add chlorinated lime solution up to at least ten per cent. of the contents of the cesspool or vault, mixing thoroughly. Repeat this at the end of twenty-four hours. "Milk of lime" may be used in the same proportion as the chloride of lime solution.

General Disinfection.

The object of general disinfection is (1) to find and disinfect all places soiled with fecal matter within a certain area; (2) to render safe all exposed collections of water within said area; and (3) to destroy flies or lessen their prevalence by cutting off their breeding places and food supplies.

General disinfection is indicated whenever there has been established in a barrio a focus of infection which cannot be located definitely. It is especially indicated when cases separated by an interval of more than five days occur within a certain area. General disinfection must be repeated if cases recur within the area disinfected after the fifth day. It is often wise to repeat even if a case occurs within less than five days, for the reason that this case may not be a contact infection but may result from a focus which through carelessness has been overlooked in the previous general disinfection.

Each disinfection squad or unit should consist of two disinfectors. The equipment of each unit consists of one spray pump, one pail of a two per cent. carbolic acid solution, one pail of saturated solution of potassium permanganate, with dipper.

The disinfection party should consist of as many disinfection units as can be assembled conveniently by the district health officer for the purpose. Five squads (ten men) will be found to be a convenient number. The equipment of such a disinfection party will consist of one carratela or cart, twenty gallons of crude carbolic acid, ten kilos of potassium permanganate in one half kilo packages, four spray pumps, ten pails, and five dippers. Four squads (eight men) use the pumps and one squad (two men) stays with the cart, mixing and distributing disinfecting solution to the disinfecting squads. One of the disinfectors pumps while the other handles the nozzle and directs the spraying.

A bottle of alcohol should be carried for prompt treatment of burns from carbolic acid.

The solubility of potassium permanganate is one in sixteen parts of cold water. Dissolving one half kilo package of potassium permanganate in an ordinary pail of water makes a solution nearly saturated. By means of the dipper, the necessary amount of this strong solution may be added to collections of water.

The carbolic acid solution is employed first, and should include thorough spraying of moist surfaces, under houses, and in the corners of premises, closets, or other places where fecal matter exists or may have been deposited. Carefully avoid disinfecting ground surfaces which are reasonably dry and which are exposed to the rays of the sun. Disinfection of a clean house should be limited to the kitchen floor,

cooking utensils, remnants of food, garbage, closets, etc., and the various receptacles for water, which are usually found at the rear of the house. If the house is dirty, a more thorough disinfection may be necessary. All collections of water, great and small, must be treated in one of two ways. If the water is dirty or contains much organic matter, treat with carbolic acid solution. If the water appears to be clean, add enough of the potassium permanganate solution to give the water a deep wine color.

Lime Disinfection.

Lime disinfection is a very useful measure in epidemic times, with the presence of bacilli carriers, where no effective system of disposal of feces exists. Lime should only be used upon fecal matter or moist surfaces soiled, or suspected of being soiled, with feces. Lime should never be used upon dry surfaces, as it will not operate dry and dry surfaces need no disinfection. Never use lime in pools of water or in any place where water exists in excess. Lime is most effective where only sufficient moisture exists to slack it.

Lime has the disadvantage of rapid deterioration in this climate and to have value must be fresh.

3.

EXAMINATION OF STOOLS.

Culture tubes of alkaline agar slants, in tin mailing tubes, are furnished by the Bureau of Health to the district health officer. A small portion of the suspected stool is streaked along the slanting surface of the agar, and the tube, properly labeled, and numbered, is mailed to the director of health.

Specimen cultures should be taken from suspects and contacts, or whenever the diagnosis is in question. If a microscope is accessible to the health officer, he should make smears from stools of persons quarantined and only discharge those persons from quarantine after negative examinations for vibrios. If a laboratory is accessible to the health officer, he should only discharge persons from quarantine after negative results by cultural methods.

Diagnosis of cholera can be made from specimens from remote parts of the islands by means of the alkaline culture slants. The writer has recovered cholera organisms from such tubes after they have been fifteen days in transit from Mindanao. If the specimen is taken after the first forty-eight hours of the attack, or if too much material is placed upon the agar slant, the chances of recovering the vibrios is lessened, but in general this method makes possible an exact diagnosis of cholera in distant towns where the sending of stool specimens is undesirable or impracticable.

4.

OBSERVATION OF CONTACTS.

Contacts whose stools are negative may be released from quarantine after disinfection at once. They should be observed for five days; that is, visited once a day for five days, without detention or interference with personal liberty.

In the Philippines, it is difficult to keep released contacts under observation, and if there is no lack of quarantine guards these contacts may be quarantined instead of being held under surveillance.

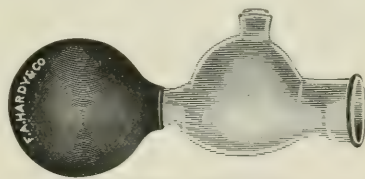
A NEW ARTIFICIAL LEECH.

By A. M. MACWHINNIE, M. D.,
Seattle, Wash.

The abstraction of blood for the relief of pain or local congestion is fast losing its hold upon the profession with each succeeding year. There was a time when every barber, with his various lances, was a blood letter, these instruments being used from one person to another, no attempt whatsoever being made to sterilize the instruments. The red sign significant of this feature is still on the barber pole, although with him it is now a lost art.

In cases of iritis, iridocyclitis, glaucoma, and chorioiditis, when rapid depletion is desired, the effect is quickly obtained by the local abstraction of blood. In cases of high tension in which the calibre vessels of the eye must be quickly reduced of their abnormal pressure the leech is a most valuable adjunct. The spastic condition of the iritis will readily yield to atropine after leeching from six to ten drachms of blood from the temples. This fact is often overlooked and the resulting adhesions that form could have been prevented.

In cases where there is simple hyperæmia of the fundus the abstraction of the blood over the mastoid process in the region of the emissary vein draws the blood from the transverse sinus. The latter is connected with the cavernous sinus into which the



MacWhinnie's artificial leech

ophthalmic veins empty. Some cases of chorioiditis may thus be immediately relieved.

The natural leech has many disadvantages. Six to ten must be applied in order to take away enough blood to be of any service. As a rule each leech will abstract about one drachm of blood. The number of leeches required covers too large an area, and they must be constantly watched for fear that they may migrate into the eye or the ear. Oftentimes it requires considerable tact in order to make them take hold, and the bleeding that continues may require treatment. This is due to the fact that they secrete a fluid which prevents the coagulation of blood. In fact, one case is reported by Lebrum of sympathetic ophthalmia following the bite of a leech which had been ordered by a physician.

We have no means by which we can tell whether the leech has ever been used before or not. Having been used on one person we are liable to infect another.

These various disadvantages can be obviated by the use of a sterile artificial leech made of glass, which is so shaped as to show the exact amount of blood being extracted, and can be used at any particular point that is desired. The one I have designed has three openings, the larger being for ab-

straction on the temple, while the smaller one on the same plane is made for attachment either with a large rubber bulb, or direct connection with a Pyncheon pump. The large end has a diameter of one and one quarter inches, and is adapted for the temple, cheek, or, in fact, any part of the face. The two small openings are arranged for the tragus, while the larger one may be used for the mastoid as well. When the surfaces are irregular the small opening is desired.

Being of glass it can be sterilized, and its size is convenient.

At the lower end of the bulb a cork is inserted which is removed when the proper amount of blood is obtained, and the whole instrument is then sterilized. No guess is needed as to whether the blood is being withdrawn or not, or in what amount.

When using the large end of the leech on the face, the cork is inserted in the small lower opening, the bulb or suction pump being on the other end. When being used on the tragus the bulb is on the small end and a cork inserted in the larger opening.

The artificial leech is first applied for several minutes to create a congestion, which will raise the part from two to five millimetres. Several small punctures are then made, preferably with a cataract knife. The artificial leech is then applied as described.

The artificial leech has been in use in the hospital here with excellent results.

411-414 WHITE BUILDING.

Correspondence.

LETTER FROM LONDON.

Professor Retzius's Huxley Lecture.—The Action of Pituitary Extract.

LONDON, November 16, 1909.

At the Royal Anthropological Institute of Great Britain Professor Gustav Retzius, of Stockholm, delivered the Huxley Lecture for the current year.

Professor Retzius is the son of Anders Retzius, who first laid the foundations of modern anthropology by dividing mankind according to the shape of their heads into two classes, dolicocephalic, or long-headed, and brachycephalic, or short-headed. Professor Retzius dealt with the increase of our knowledge regarding the origin and distribution of European races which had attempted the application of the methods introduced by his father.

A recent survey of recruits for the Swedish army had revealed the fact that eighty-seven per cent. of the Swedes were long headed, while seventy-three per cent. had fair hair. Professor Retzius regards his fellow countrymen as a pure representation of the north European race—a race still found in Scandinavia, North Germany, and Britain, but at one time spread widely over Europe—from earliest neolithic times downward. They might be regarded as the aborigines of Europe, not, as at one time widely believed by the philologists, Aryan invaders from Asia.

Professor Retzius agrees with those who take a gloomy view as to the future of this ancient race. The qualities which made them great in the past

are just those that unfit them for the routine life of an industrial civilization. The round headed, dark haired race which has replaced them in central Europe has gained its victory by the possession of superior industrial qualities, a superiority that threatens ultimately to overwhelm the fair haired north European stock. Professor Retzius pointed out that the importance of anthropological science was not sufficiently appreciated at the present time by statesmen and politicians, though it vitally affected the industrial and political activities of nations.

At a meeting of the Liverpool Medical Institution Dr. W. Blair Bell recently read a paper on the Pituitary Body and the Therapeutic Uses of the Infundibular Extract in Shock, Uterine Atony, and Intestinal Paresis.

After dealing with the work of other investigators who had confined their attention mainly to the anatomy and development of the pituitary body and to the physiological action of the infundibular extract upon the bloodvessels and kidneys, Dr. Bell described the results of his own experiments carried out with Dr. Pantland Hick, not only upon the blood pressure, but also upon the uterus and intestines. Further, he gave an account, with cases, of the clinical use to which he had put the extract. He had obtained striking results with an extract in shock, uterine atony, and intestinal paresis. He said it was especially indicated in such conditions as post partum hæmorrhage. He next discussed the origin of the active principle and its probable chemical composition. He also described the method of administration of the extract.

Sir James Barr congratulated Dr. Bell on the value of his work. He thought that pituitary extract should be used with caution, and said its misuse would bring it into disrepute. The drug was active in producing arteriosclerosis, in contracting the coronary arteries, and in leading to their degeneration. When used as recommended by Dr. Bell, with low blood pressure, no mischief could result, and, if reserved for such cases, it would hold a valuable position in therapeutics.

Dr. Pantland Hick drew attention to the danger of using the drug in heart failure.

Mr. Paul had used it in a case of intestinal paresis after operation with the most remarkable results after all else had failed to give relief.

Mr. Hope Simpson and Dr. Buchanan referred to a case of splenic anemia with distention and ascites in which the extract had given marked relief over a period of several weeks, when given at intervals. The relief was maintained, there was a great diminution in the size of the spleen, and the fluid was kept in abeyance. Dr. Buchanan also referred to the opinion held by Müller and others that the centres for the involuntary action of the uterus, bladder, and rectum were situated in the pelvic sympathetic ganglia, and desired to know if the pars nervosa of the pituitary body could be regarded as an integral part of the sympathetic nervous system or if the extract acted by stimulating the ganglia. He considered that those cases of so called acute intestinal paresis associated with peritonitis for which an operation had to be performed were not due to any special affection of the gut itself, but to paralysis of the sympathetic nervous system, and that the dis-

tention was a symptom of this condition, namely, shock. Dr. E. E. Glynn believed that the extract would be far less efficacious in intestinal atony due to acute general peritonitis than in that due to other causes.

Therapeutic Notes.

Treatment for Intestinal Worms.—The following useful summary of the symptoms of intestinal worms and their treatment is furnished by Dr. T. D. Savill (*The Practitioner*, November, 1909), who points out that intestinal worms may give rise to no symptoms at all. These worms are most frequently met with in children, and may remain undiscovered until they are found in the stools. The symptoms are very indefinite, and consist of vague and persistent, though often paroxysmal, pains in the abdomen; capricious and sometimes ravenous appetite, in spite of which the child becomes thin and sallow; grinding of the teeth at night, picking of the nose, and other reflex phenomena; irregularity of the bowels, or diarrhoea; threadworms produce intense itching of the anus, and consequently fidgetiness, especially at night. They may wander forwards and cause vulvitis.

The treatment differs for the different worms. For threadworms the best treatment consists of quassia injections. After an aperient, one ounce of powdered quassia to a pint of boiling water is, when cold, injected into the bowel, and retained as long as possible. Common salt injections of the same strength may be used. The worms are destroyed with two or three such injections.

Santonin (one grain) in a powder with calomel is very efficacious; it should be given on alternate days for three doses, followed by castor oil. Where the worm has its habitat high up in the intestine (as the tapeworm) treatment is conducted in three stages.

(1) In order to starve the parasite by keeping the alimentary canal as empty as possible, the patient should have no food after midday, and at night or the next morning a purgative must be taken. This leaves the worm uncovered, and thus readily acted upon by (2) the anthelmintic, which is given about an hour after purgation. The chief anthelmintic is extract of male fern. Some recommend thirty minims of spirit of turpentine to be given with this; others give koussou (four drachms) or pelletierine (two grains of the alkaloid); (3) two hours later give calomel with a saline aperient to eject the worm from the body. The stools must be examined to see that the head is passed. If only segments are passed, the worm will grow again, and the same treatment will have to be repeated within three months. For the round worm the specific remedy is santonin, given in two grain doses to a child of three and upwards; for an adult five grains are given.

The Treatment of Warts.—The successful treatment of warts is a subject that now and then becomes a matter of some interest to medical men, and according to *The Practitioner* for November, Dr. Graham Little's views on the matter are of great practical value; after mentioning that the common wart, as it occurs upon the skin, is most fre-

quent in children, and appears to follow a mild local irritation, he observes that internal medicines may be combined with local applications, especially where the warts are numerous. Arsenic is the best of these; Epsom salt may also be tried. For local use the following are suggested:—One part of corrosive sublimate, with twenty-five parts of flexible collodion painted on the wart once a day.

- B Potassium bichromate,gr. iij;
- Petrolatum5j.
- M. et. Sig.: Rub into the wart at night.
- B Chloral hydrate,1 part;
- Salicylic acid,4 parts;
- Acetic acid,1 part;
- Aether,5 parts;
- Collodion,15 parts.
- M. Sig.: Paint on wart once a day.
- B Extract of cannabis indica,1 part;
- Salicylic acid,2 parts;
- Collodion,40 parts.
- M. Sig.: Paint on wart once a day.

When these fail, curetting is probably the simplest and most efficacious of other methods of removal. The wart and surrounding skin are thoroughly scrubbed, and then the wart—and the surrounding skin for about one quarter inch—frozen with ethyl chloride; the wart is removed with a sharp curette and dressed with a dry antiseptic dressing.

The Treatment of Febrile Conditions in Children.—Lemanski devotes a chapter in the new edition of his *Art pratique de formulei* to the employment of antipyretics for children, giving the following prescriptions, which are cited in *The Practitioner* for November, 1909:—

For hypodermic injection:

- B Quinine hydrochloride,gr. xlv;
- Antipyrine,gr. xxx;
- Distilled water,5ij.
- M. Sig.: Half a syringefull to be given.

For a suppository:

- B Quinine hydrobromide,gr. v;
- Antipyrine,aa gr. j;
- Acetphenetidin, }
Cacao butter,gr. xxx.
- Misce. Fiat suppositorium.

For pastille:

- B Euquinine, }
Antipyrine, }gr. j.
- To be made into pastilles with vanilla chocolate, three or four to be taken daily.

For an enema:

- B Antipyrine,gr. xv;
- Quinine hydrobromide,gr. vj;
- Tilia water,5v.
- Misce. Fiat enema.
- To be given after a purgative enema.

For a draught:

- B Antipyrine,gr. viij to xvj;
- Syrup,5j;
- Tilia water,ad. 5iss.
- Misce. Fiat mistura, capiat 5j; 2 dis. horis.

For a powder:

- B Euquinine, }
Antipyrine, }aa gr. iss;
- Acetanilide,gr. i.

Misce. Fiat pulvis. Sig.: Two or three to be taken in the day in jam or sweetened milk.

It is scarcely necessary to add that the antipyretic remedy *par excellence* for children is a bath of one sort or another.

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NEW YORK, SATURDAY, DECEMBER 4, 1910

THE NEW YORK ACADEMY OF MEDICINE.

Quite unexpectedly to a majority of its members, we imagine, the academy finds itself confronted with a serious problem, that of providing adequate shelf room for its rapidly growing collection of books, pamphlets, and periodicals. It is estimated by the Library Committee, in a report made to the Council last week, that in the course of hardly more than another year either all new volumes acquired must be placed on the floor or else the shelves must be loaded with double rows in the few places where this can be done. This means, says the committee, that much time must inevitably be lost in searching for volumes wanted, so that readers will be subjected to annoying delays, and probably that the library staff will have to be increased in order to carry on the regular work of maintaining the catalogue. Either of these expedients, moreover, would prove no better than a makeshift, and the usefulness of the library would soon be practically extinguished.

Already the pamphlet cases are full, and all new pamphlets are piled on the floor or on window sills. There is no more space for a new pamphlet case, and it is pointed out by the committee that the collection of pamphlets is an increasingly valuable part of the library. The duplicate collection is so scattered as to be very inaccessible, being partly on shelves in various rooms not intended for library

purposes and partly in the stack room "most of it on the floor." "If, as seems probable," says the report, "all the unoccupied space will be exhausted by January, 1912, it is essential to have new accommodations ready by the summer of 1911, that the books may be shifted during the months when the closure of the library would be less serious. To accomplish this, building must be begun by June, 1910, at the latest, and to this end plans should be made at once."

The feasibility of adding to the existing building has been carefully considered. Its present capacity for library purposes is for 90,000 volumes, and there are now about 84,000. It is thought that the stack room may be so increased as to admit of its holding 70,000 more volumes, such increase to cost from \$45,000 to \$50,000, and that space for 225,000 volumes can be obtained at an expense of from \$75,000 to \$80,000. To do this, however, new foundations would be required, also new steel construction carried up independently of the present walls of the library, partly inside and partly outside the building. This would place the new stack directly over the present one. There would be large additional expenses for other necessary changes in the building, for the rewiring of the whole structure to conform to the underwriters' requirements in cases of considerable alterations of old buildings, and for enlarging or replacing the present lighting plant. Finally, "any remodelling of the present building sufficient to give increased stack facilities would necessitate closing the library for at least several months," and the added space would not probably suffice for more than from fifteen to twenty years. The money required would be difficult to raise, and the alterations would not increase the selling value of the property in the least. All things considered, therefore, the committee recommends the acquisition of a new site and the erection of a new building on a plan which would prove much more economical of space than that of the present structure and lend itself more readily to future requirements.

The committee's recommendation seems to us a wise one. Though the academy's existing building is only about twenty years old, it has manifestly been outgrown. At the time of its erection it was perhaps hardly possible to foresee such a result, especially in view of its great superiority to any quarters previously possessed by the academy. There are still some active members of the academy who remember the time when, having no home of its own, it held its meetings in "the small chapel of the university" in the old building in University Place overlooking Washington Square. The university was the University of the City of New York, as it was then called, now known as New York University and richly domiciled on University Heights. Then the academy bought a dwelling house in West

Thirty-first Street, between Fifth Avenue and Broadway, built a considerable addition to it in the rear, and for a few years found those quarters sufficient for library purposes as well as for meetings. When the building in West Forty-third Street was completed it was thought that it would prove adequate for many years, but the present exigency shows the futility of that expectation. It is evident that something radical must be done speedily, and we hope that a new and spacious building may soon be in course of construction on a suitable site.

ARTHRITIS DEFORMANS.

Nichols and Richardson (*Journal of Medical Research*, September) have been at work upon this subject for eight years. Their monograph is based upon a pathological and clinical study of sixty-five cases of chronic nontuberculous deforming arthritis. Complete autopsies were held in twenty-six of these cases, and a partial autopsy in one case, and material was obtained from thirty-eight cases by amputation and excisions. As a result of this study, the authors divide arthritis deformans into two pathological types—first, that which arises from primary proliferative changes in the joints, chiefly in the synovial membrane and the perichondrium; and, second, that which arises primarily as a degeneration of the joint cartilages. These two pathological types, however, do not correspond to two definite ætiological conditions. On the contrary, causes of a very varied nature, they say, may produce the primary changes in either class of case. Traumatism, acute suppurative infections, gonorrhoea, syphilis, faulty metabolism (perhaps), old age, bone tumors, gout, and central nervous system lesions may give rise to the trouble.

The authors describe the normal structure of a joint, and then the two varieties of the disease already indicated. Under each variety they discuss the general course of the complaint, its ætiology, its pathological histology, its gross pathology, its symptomatology, and its prognosis. The monograph is illustrated with twenty-five plates, five of which are in color.

IS LATIN A HUMBUG?

A letter in the November *World's Work* states that the writer now refuses to take his physician's prescriptions unless he knows the ingredients by their English names. If he is not an accomplished student of physiology, pathology, and materia medica, of what use is the knowledge to him? Is the physician to accompany each prescription with a little lecture on physiological action? Suppose we tell a patient we are giving him a mixture of iodide of potassium, of wine of the seed of colchi-

cum, of refined baking soda, of the compound tincture of gentian—explaining the various ingredients of the latter—how much better off is he than if he had taken his doses unquestioningly? The unhappy drivell of the average layman who has acquired a little dangerous learning of the kind is familiar to the long suffering physician; let us be spared any extension of mere sipping at the Pierian faucet. We believe the study of physiology to be a justifiable part of general culture, but by no means that of pathology and materia medica. Latin is not used by physicians to mystify the public. It is employed in an attempt, till something better is provided, to create a universal scientific nomenclature comprehensible by medical men in all parts of the world. However, all patients are not so wise as the writer of the letter referred to; it is sometimes really advisable to conceal from the patient what he is taking.

RED MEAT AND POULTRY IN THE DIET OF NEPHRITICS.

After summarizing the contradictory views of various authors as to the comparative harmlessness of red meat and poultry as articles of diet for persons affected with nephritis, a writer in the *Semaine médicale* for September 22d gives a condensed account of a recent study of the question by N. Di Giovine, of Naples (*Studium*, May), carried out in the second medical clinic of the University of Naples. That observer has investigated not only the relative proportions of extractives in the two varieties of flesh, but also and more especially their action upon nephritic patients.

Taking beef as the type of red meat and chicken as the representative of white meat, Di Giovine finds that there is a larger amount of extractives and of purin bodies in the former than in the latter. He thinks that it is not necessary to condemn the subjects of chronic renal disease to a strict milk diet, and that it may even be dangerous. What seems to suit such patients best, he avers, is a mixed diet including meat, the use of which is to be allowed in greater or less amount in individual cases according to the observed nitrogenous changes.

In patients affected with interstitial nephritis, quite the same as in those with the parenchymatous form, the evolution of the disease, and in particular the state of the nitrogenous excretions, vary according to the nature of the diet, though within comparatively narrow limits. Especially is there observed a greater retention of nitrogen, with an aggravation of the disease, when the diet is changed suddenly from one strictly of milk or from a miscellaneous diet containing chicken to one including beef. Consequently, as a general thing, poultry is preferable to red meat. It is of importance, moreover, to take

into account not only the nature of the meat allowed but also the method of its preparation. Boiled meat should always be preferred to that which has been roasted, for it is relatively less rich in extractives and in purin bodies.

THE SURGERY OF THE ARTERIES.

The question of operative intervention in the treatment of certain injuries of arteries was treated of very thoroughly and rather hopefully before the French Congress of Surgery in October. Monod and Vanverts presented a carefully prepared paper covering the literature of the subject. They did not seem discouraged by the cases of unsuccessful intervention, with removal of clot, or resection of the artery at the point of solution of continuity. The reason for their hopefulness lies in the favorable results of intervention in cases of complete arterial rupture. In these cases many patients have recovered under excision of a hematoma which by pressure threatened to produce gangrene.

Delorme, in 1902, showed that the restoration of even partial permeability to the blood channel was sufficient to delay the dangers of gangrene, and in the meantime some effective collateral circulation may establish itself. Delbet, in 1909, reverts to this principle. J. Vanverts, writing in the *Echo médical du Nord* for September 26th, lays stress upon the felicitous point at which our surgical procedures have arrived, so that we may expect the improved technique of to-day, with the knowledge of methods used in complete rupture, will succeed in overcoming cases of incomplete rupture. The so called *ligature en aval*, as used by Wharton in 1886, is suggested with some reservations.

SAFEGUARDING THE MILK SUPPLY.

Nothing can be more important to the health of the family, and especially to the baby's, than a supply of pure milk. It seems to us, however, that the dealers have now gone creditably far in their precautions against adulteration and dirt. Only healthy cows of high breeding are chosen, they are carefully looked after, their bedding is clean and dry, their food is the best, free from brewer's waste or ensilage, the milkers are obliged to wash their hands before milking and wear sterilized white clothing, and the water supply of each farm whence is obtained the milk is examined for impurities. All cans are scoured and subsequently hung in the sun. Dairies are sunlit and whitewashed. The milk is bottled at the farms and the bottles are packed in ice, there to remain thoroughly chilled till they reach the consumers' doorsteps. Such elaborate care has forced the price of milk up to twenty cents for "certified" milk, but the nine cent variety is generally a fit food

for a child. Yet the sensational journals are never tired of insinuating that prices are outrageous and that the statements of dealers as to the care exercised are to be taken with a grain of salt. Especially is milk the subject for the omnipresent crank. How human ingenuity can go further in safeguarding the supply is a problem, unless, indeed, each cow is to have a chambermaid who will brush her charge's teeth after each meal, spray her with cologne, and put up her tail in blue ribbons. Let those who complain of milk not forget that it is the duty of every mother to nurse her offspring, and that, were cow's milk to be supplied in a perfectly ideal condition, it could never agree with the baby quite so well as the human product.

A NEW TYPE OF MIND.

Some of the successful men and women of to-day are different in mentality from those of any other era, in two particulars. Great personages have always taken pride in encouraging genius. They welcomed painters, poets, inventors, and writers at court. To-day the successful people are amateurs *par excellence* in fields other than those in which they have won primary renown, so that the great railroad and financial geniuses are also not infrequently as skilful as professionals in sculpture, literature, or science. Far from a sense of the derogatory in doing artistic or mechanical work, it has become dignified to possess accomplishments in these forms of personal expression.

Instead of an assembly such as the Medicean age boasted, princes, dukes, and personages surrounded by the masters of science and art, we see to-day these same personages in the guise of masters themselves. It is conceivable that a prominent philanthropist, with his acute mind, takes more than a passive interest in reading the reports of the institute bearing his name.

What is this new mentality? What significance will it present historically? In all truth, it would seem to declare a better understanding of ethics and interrelations of mankind than ever before was attained. When wealth and social position are turned by their possessors to procure for themselves purer and nobler means of self expression, the future of the race is materially brightened. To-day many people of means devote them to private studios and workshops from which genuine production issues. Von Sternberg, the great pianist, told the writer that he knew many physicians in Germany who executed music "a d— sight better than many so called professionals" whose ostentatious *tours* did not accord with their abilities. Can it be that Fifth Avenue is to see its historic dwellings converted into a line of workshops, ateliers, editorial rooms, and studios?

Obituary.

WILLIAM B. ATKINSON, M. D.,
of Philadelphia.

Dr. Atkinson, who died at his home, in Germantown, on Tuesday, November 23d, at the age of seventy-seven years, was one of the oldest physicians in Philadelphia. He was born in Haverford, Delaware County, Pa., on June 21, 1832. He received his medical education at the Jefferson Medical College, from which he was graduated in 1853. He was the editor of the *Proceedings of the Philadelphia County Medical Society* just after he started to practise and he was the correspondent of a number of medical journals in various parts of the country at the same time. In 1858 he became one of the editors of the *Medical and Surgical Reporter*. In 1859 he was elected assistant to the professor of obstetrics in the Pennsylvania Medical College. He was elected lecturer on diseases of children in the Jefferson Medical College in 1877 and was subsequently a member of the faculty of the Medico-Chirurgical College. In 1863 he was elected permanent secretary of the Medical Society of the State of Pennsylvania and in 1864 he was elected permanent secretary of the American Medical Association. Both these positions he filled until the time of his retirement, about fifteen years ago. In 1873 he was president of the Philadelphia County Medical Society. Dr. Atkinson was the author of a number of papers on obstetrics. Since his retirement from active practise he had been in feeble health, so that the termination of his life was not unexpected.

I. NEWTON SNIVELY, M. D.,
of Philadelphia.

Dr. Snively, who died on November 23rd, was born near New Franklin, Franklin County, Pa., on April 5, 1862. After a number of years spent in scientific work he took his medical degree from the Bellevue Hospital Medical College in 1889. He then served a term on the house staff of Bellevue Hospital. He began the practice of medicine in Philadelphia in the autumn of 1889. In 1890 he was appointed visiting physician to the Methodist Home for Aged Couples. He began his work as a teacher in 1893, as assistant to the professor of physiology in the Medico-Chirurgical College of Philadelphia; in 1897 he was elected lecturer on physical diagnosis in the same institution. In 1891, 1892, and 1893 he was assistant neurologist to the Medico-Chirurgical Hospital. In 1901 he resigned his position at the Medico-Chirurgical College and accepted the chair of materia medica, pharmacology, and therapeutics in the Medical Department of Temple College, which was just being organized. Since then he has been also the dean of the department.

Dr. Snively was a very kindly man. His colleagues speak of him as being one of the most forbearing and friendly of associates, and as exhibiting these characteristics toward all those with whom he had acquaintance. He would not intentionally give offense even to a person whom he distrusted.

Dr. Snively was one of the founders of the North-western Medical Society of Philadelphia, and was its president in 1896 and 1897.

News Items.

Changes of Address.—Dr. John M. Scannell, to 699 Halsey Street, Brooklyn.

The McDowell Medical Society, of Cincinnati, will give a banquet on the evening of December 9th, to celebrate the centennial anniversary of Dr. Ephraim McDowell's first ovariectomy.

New Physicians in Minnesota.—At the October examinations thirteen physicians received licenses to practice medicine in the State of Minnesota, upon examination, and twenty-two by reciprocity.

The German Hospital, of Brooklyn, will celebrate its tenth anniversary with a banquet on the evening of January 12th. The new building of the outdoor dispensary of the institution will also be dedicated on that occasion.

Medical College of the University of Cincinnati.—The union of the Ohio and Miami Medical Colleges as the Medical Department of the University of Cincinnati was celebrated on Wednesday, December 1st, with suitable ceremonies.

A New Isolation Hospital in Milwaukee.—The sum of \$100,000 is included in the budget for 1910 for the erection of a new hospital for the care and treatment of contagious diseases. The two existing buildings have been declared wholly unsuited for the purpose.

Merger of Two Philadelphia Hospitals Planned.—According to newspaper reports, plans are afoot for the affiliation of the Philadelphia Polyclinic and College for Graduates in Medicine with another Philadelphia institution, the name of which has not yet been made public.

A New Building for St. Giles Hospital, Brooklyn.—The plot of land at the southeast corner of Brooklyn Avenue and President Street, Brooklyn, has been sold to the St. Giles Hospital, and the work of erecting a modern building, with all the latest improvements, will be begun at once.

Free Medical examinations and the adoption of other methods for the early detection and prevention of disease are recommended by the president of the Provident Savings Life Assurance Society, who has just issued a monograph on the increase of deaths from diseases of the kidneys, heart, and brain, and other non-communicable maladies.

Smallpox in Tonawanda, N. Y.—According to press despatches, the health authorities of Tonawanda are becoming alarmed at the spread of smallpox there. An order has been issued by the Health Department that all school children must be vaccinated, and unless the outbreak is stamped out very soon all schools will be closed. Several cases of the disease have also been reported in North Tonawanda.

Medical Society of the County of Ulster, N. Y.—The annual meeting of this society will be held in Kingston, N. Y., on Tuesday evening, December 7th, at 7:30 o'clock. Dr. Thomas O. Keator, vice-president of the society, will deliver the annual address. Dr. George F. Chandler will read a paper entitled *Postural Treatment to Prevent Vomiting Following Anesthesia*. Dr. Adelbert H. Mambert will read a paper on *Proprietary Medication*.

Great Britain Bars the Red Cross Christmas Stamps.—The Post Office Department at Washington has issued a circular announcing the fact that Great Britain and her South African possessions have refused admittance to their mails to the Red Cross Christmas Stamps and all other non-postage charity stamps, and Germany has stipulated that the stamps must be placed on the backs of envelopes or wrappers. The circular adds that all articles bearing such stamps for transmission in the international mails should bear on the covers the full address of the sender. The reason given for this action of the foreign postal authorities is that these stamps are often confused with the regular postage stamps of the United States.

The Second Harvey Society Lecture.—Professor Otto Conheim, of the University of Heidelberg, will deliver the second lecture of the course at the New York Academy of Medicine on Saturday, December 4th. His subject will be *The Influence of Sensory Impressions on Scientific Deductions*.

The Cincinnati Society of Medical Research held its annual meeting on Tuesday evening, November 23d, and elected the following officers for the ensuing year: President, Dr. Paul Woolley; vice-president, Dr. Wherry; secretary and treasurer, Dr. J. L. Tuechter; executive committee, Dr. Sidney Lange and Dr. Joseph Ranshoff.

Rochester, N. Y., Academy of Medicine.—A meeting of Section I of this academy, which comprise general medicine, neurology, psychiatry, materia medica, and therapeutics, was held on Wednesday, December 1st. The programme consisted of a review, with a demonstration, of Professor Hiss's treatment of acute infections by the use of leucocyte extracts, by Dr. John R. Williams.

The New England Association of Graduates of Jefferson Medical College held its fall meeting and dinner in Springfield, Mass., on the evening of November 17th. About thirty members of the association were present. Dr. W. M. L. Coplin, professor of pathology, at Jefferson Medical College, and Dr. Randle C. Rosenberger, assistant professor of bacteriology, were present as representatives of the college.

The Clinical Society of the West Side German Dispensary, New York, was organized on November 24th, with the following officers: President, Dr. Robert N. Disbrow; vice-president, Dr. Leon F. Garrigues; secretary, Dr. D. Livingston Morris. The society is composed of the members of the staff and faculty of the New York Clinical School of Medicine. Meetings will be held on the first Tuesday of each month at the hospital, 328 West Forty-second Street.

Personal.—Dr. Thomas Jennesco, dean of the medical faculty of the University of Bucharest, Bavaria, arrived in New York on November 30th.

Dr. Jules Brady has been appointed assistant professor of diseases of children in the St. Louis University School of Medicine.

Dr. John Wyllie Nicol has been appointed McCall Anderson Memorial lecturer in dermatology in the University of Glasgow.

The Lockport, N. Y., Academy of Medicine was organized recently. At the last meeting of the organization a constitution and by laws were adopted, and the following officers elected for the first year: President, Dr. C. N. Palmer; vice-president, Dr. F. J. Baker; treasurer, Dr. H. H. Mayne; secretary, Dr. C. L. Preisch; council, Dr. A. N. Moore, Dr. S. W. Hurd, and Dr. A. N. McNamara; trustees, Dr. F. A. Kittinger, Dr. W. P. Weaver, and Dr. W. H. Loomis.

The Medical Association of the Greater City of New York will hold a special meeting under the direction of the Chairman for the Borough of the Bronx on Monday evening, December 6th, at 8:30 o'clock. Dr. John F. Erdmann will read a paper entitled *Malignant Growths of the Sigmoid and Rectum*. Dr. Charles H. Jaeger will read a paper on *Mechanicotherapy the New Therapeutic Agent*. Among those who will take part in the discussion are Dr. Willy Meyer, Dr. Albert A. Berg, and Dr. Carl R. Kepler.

The Ohio Valley Medical Association held its eleventh annual meeting in Evansville, Ind., on Wednesday and Thursday, November 10th and 11th. The attendance was unusually large, and the meeting was in every way a great success. Officers for the ensuing year were elected as follows: President, Dr. A. E. Sterne, of Indianapolis; first vice-president, Dr. F. Frank Lydston; second vice-president, Dr. W. D. Haines, of Cincinnati; third vice-president, Dr. L. D. Brose, of Evansville; secretary and treasurer, Dr. Benjamin L. W. Floyd, of Toledo.

New Site for the Medico-Chirurgical College and Hospital of Philadelphia.—It is reported that, anticipating the sale of the entire property of the Medico-Chirurgical College and Hospital to the city for the new parkway, the trustees of the institution have had extensive plans prepared and hope soon to close negotiations for duplicating the buildings, but in more magnificent and important property to another site not far from the present situation. The trustees have offered the college property for sale for \$1,000,000.

The Neurological Institute, a public hospital for the study and treatment of nervous and mental and allied diseases, was opened for the reception of patients on Monday, November 29th, at 149 and 151 East Sixty-seventh Street, New York. The president of the institution, which includes a dispensary and has been incorporated under the laws of the State, is Mr. Richard H. Williams. Mr. Robert P. Perkins is secretary and Mr. Otto H. Kahn is treasurer. The medical board is composed of the following well known physicians: Dr. Joseph Collins, Dr. Joseph Fraenkel, and Dr. Pearce Bailey.

The Clinical Society of the New York Throat, Nose, and Lung Hospital will meet on Monday evening, December 6th, at 8:15 o'clock. Dr. Parker Syms will present a patient showing a resection of the superior maxilla for a crushing fracture. Dr. E. V. Hubbard will exhibit some throat instruments. Dr. Parker Syms will read a paper entitled *Indications for Treatment for Injuries to the Cranial Vault*. The discussion will be opened by Dr. M. Kakels. The officers of the society are: President, Dr. S. Goldstein; vice-president, Dr. C. J. Imperatori; secretary, Dr. P. B. Hough; and treasurer, Dr. J. A. Gonzales.

The American Society of Sanitary and Moral Prophylaxis.—The next regular meeting of this society will be held at the New York Academy of Medicine on Thursday, December 9th, at 8:30 p. m. The general subject for discussion will be *Shall the State require a Medical Certificate of Freedom from Transmissible Disease as a Condition of License?* H. M. Johnston-Wood, Esq., will deal with the subject from the legal side. The sociological side will be dealt with by Charlotte Perkins Gilman, and the medical aspect of the subject will be treated by Dr. L. Duncan Bulkley. There will be a general discussion.

The Italian Medical Society, of New York, held its first annual dinner at the Hotel Astor on Saturday evening, November 27th. About four hundred were present. Dr. Antonio Stella, president of the society, was toastmaster, and among those who spoke were Baron Mayor des Planches, Italian Ambassador at Washington; Lloyd C. Griscom, former ambassador to Italy; Congressman William S. Bennet, Health Commissioner Darlington, Dr. John W. Brannan, Dr. Seymour H. Houghton, and Dr. Rocco Brindisi. At the guests' table, besides the speakers, were the Italian Vice Consul, Dr. Gustave di Rosa; the Marchese Prospero de Nobili, Mrs. Antonio Stella, and Dr. Laferme Solari. Alessandro Bonci, Antonio Scotti, and Enrico Caruso, of the Metropolitan Opera Company; Giulio Gatti-Casazza, director of the Metropolitan Opera House; and Signor Toscanini, the conductor, were also present.

Insanity in Wisconsin.—According to a statement issued by the State Board of Control, the number of inmates of State institutions and county asylums on November 1st was as follows: State hospitals for the insane, Mendota, 643; Northern hospital for the insane, Oshkosh, 638; school for the deaf, Delavan, 194; school for the blind, Janesville, 77; industrial school for boys, Waukesha, 353; state prison, Waupun, 718; state public school, Sparta, 181; home for feeble minded, Chippewa Falls, 922; state reformatory, Green Bay, 241; state tubercular sanatorium, Wales, 88. Total in the state institutions, 4,055. In the Milwaukee county hospital for insane, Wauwatosa, the number of inmates is 653; total number of inmates in county asylums for the state, 4,594; total, 9,302. The total number of insane in the state is estimated at 6,528, estimated number of blind in the state 500, estimated number of feeble minded in the state 4,000.

The Red Cross Christmas Stamps.—More than two million Red Cross Christmas stamps were placed on sale in Pennsylvania on Wednesday, November 24th, of which more than a million were for Philadelphia alone. Great enthusiasm is shown throughout the State in the enterprise. The distribution of the stamps this year will cover every State in the Union except Wyoming and Nevada, where agents have not yet been appointed, and 50,000,000 stamps have been ordered. One feature of the distribution of the proceeds of the sale which seems to appeal to each community is that the money is used in the community where it is collected. Last year the net profits from the sale of the stamps amounted to \$140,000, and it is expected that the profits this year will reach \$300,000. A new feature of the enterprise this year is the selling of souvenir postal cards at one cent each, and reports from agents all over the country show that the plan promises to be a distinct success.

Gifts and Bequests to Charity.—The sum realized from the sale of the remainder of the estate of the late Patrick Keenan amounted to \$86,175, which is to be divided among the following institutions: St. Francis's Hospital, the Roman Catholic Orphan Asylum, the New York Catholic Protectorate, and St. Vincent's Hospital.

The following bequests are included in the will of the late Herman Jacoby, who died in Chicago on September 18th: Society for the Prevention of Cruelty to Animals, \$500; Ladies' Fuel and Aid Society, \$1,000; Beth Israel Hospital, \$1,000; Lebanon Hospital, \$1,000; Jewish Theological Seminary, \$1,000, and Young Men's Hebrew Association, \$500.

The Health of Chicago.—During the week ending November 20, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 156 cases, 27 deaths; scarlet fever, 148 cases, 9 deaths; measles, 130 cases, 0 deaths; chickenpox, 75 cases, 0 deaths; mumps, 36 cases, 0 deaths; pneumonia, 14 cases, 87 deaths; typhoid fever, 27 cases, 5 deaths; whooping cough, 32 cases, 1 death; tuberculosis, 104 cases, 60 deaths; erysipelas, 8 cases, 0 deaths. The deaths from other important causes were: Diarrhoeal diseases, 43 deaths; cancer, 20 deaths; nervous diseases, 13 deaths; heart diseases, 48 deaths; apoplexy, 7 deaths; Bright's disease, 48 deaths. There were two suicides, 27 deaths from accidents and 2 deaths from manslaughter, making a total of 31 deaths by violence. The total number of deaths for the week was 512, in an estimated population of 2,224,490, corresponding to an annual death rate of 12.00. The death rate for the corresponding period in 1908 was 14.35. The total infant mortality was 151; 93 under one year of age and 58 between one and five years of age.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending November 20, 1909, there were 1,389 deaths from all causes reported to the department, 153 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.87 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.78; the Bronx, 18.89; Brooklyn, 15.62; Queens, 13.63; and Richmond, 17.39. The total infant mortality was 396, 267 under one year of age, 70 between one and two years of age, and 59 between two and five years of age. Of the total number of deaths of children under five years of age, 58 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 70; pulmonary tuberculosis, 181; diarrhoeal diseases, over five years of age, 62; organic heart diseases, 120; Bright's disease, 108; cancer, 67; pneumonia, 127; bronchopneumonia, 95. There were 12 suicides, 50 deaths due to accidents, and 6 deaths from homicide, making a total of 68 deaths by violence. There were 138 stillbirths. Six hundred and sixty-two marriages and 2,205 births were reported during the week.

Meetings of Sections of the New York Academy of Medicine.—The Section in Dermatology will hold an executive session on Tuesday evening, December 7th. Officers for 1910 will be elected.

The Section in Pediatrics will meet on Thursday evening, December 9th, at 8:15 o'clock. Dr. Isidore Goldstein will present a patient with Amaurotic Family Idiocy, and Dr. Kaufman Schlivick will present a patient with Congenital Muscular Dystrophy. A paper entitled The Colloids of Milk and Ultramicroscopic Observations will be presented by Jerome Alexander, M. Sc., and Dr. Jesse C. M. Bullowa. Dr. John Lovett Morse and Dr. F. E. Talbot, of Boston, will present a paper on The Treatment of Intestinal Indigestion in Children on the Basis of the Examination of the Stools and Caloric Values. There will be a general discussion, followed by the election of officers for 1910.

At a meeting of the Section in Otolaryngology, to be held on Friday evening, December 10, at 8:30 o'clock, Dr. John R. Page will present a patient with Thrombosis of the Jugular Bulb without Apparent Involvement of the Lateral Sinus. Dr. Edmond Price Fowler will read a paper entitled The Serum Diagnosis of Syphilis in Its Relation to Diseases of the Ear. Dr. E. A. Crockett, of Boston, on Thrombosis of the Lateral Sinus. There will be a general discussion.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 27, 1909:

	November 20.		November 27.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	528	181	455	134
Diphtheria	353	32	302	29
Measles	304	8	263	7
Scarlet fever	232	14	272	9
Smallpox	..	..	..	..
Varicella	145	..	138	..
Typhoid fever	77	16	45	12
Whooping cough	57	3	23	7
Cerebrospinal meningitis	4	4	4	5
Total	1,697	258	1,592	203

The Health of Pittsburgh.—During the three weeks ending November 20, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh:

	November 6.		November 13.		November 20.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Chickenpox	14	..	40	..	34	..
Typhoid fever	24	8	24	1	10	..
Scarlet fever	40	..	42	1	39	3
Diphtheria	10	..	8	3	21	..
Measles	9	..	36	1	34	1
Whooping cough	2	1	14	..	11	..
Tuberculosis	39	17	43	10	41	7
Totals	138	26	207	16	191	14

The total deaths from all causes for the three weeks were 171, 159, and 146, respectively, in an estimated population of 572,000, corresponding to annual death rates of 15.54, 14.45, and 13.27 in a thousand of population.

Scientific Society Meetings in Philadelphia for the Week Ending December 11, 1909:

MONDAY, December 6th.—Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society; Wills Hospital Ophthalmic Society.

TUESDAY, December 7th.—Academy of Natural Sciences; Philadelphia Medical Examiners' Association.

WEDNESDAY, December 8th.—Philadelphia County Medical Society.

THURSDAY, December 9th.—Pathological Society; Section Meeting, Franklin Institute; Lebanon Hospital Medical Society.

FRIDAY, December 10th.—Northern Medical Association; West Branch, Philadelphia County Medical Society.

Society Meetings for the Coming Week:

MONDAY, December 6th.—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society.

TUESDAY, December 7th.—New York Academy of Medicine (Section in Dermatology); New York Dermatological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association.

WEDNESDAY, December 8th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York (annual); Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

THURSDAY, December 9th.—New York Academy of Medicine (Section in Pediatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, December 10th.—New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York (annual); Saratoga Springs, N. Y., Medical Society; New York Academy of Medicine (Section in Otolaryngology).

SATURDAY, December 11th.—Therapeutic Club, New York.

The Association of French Physicians of North America will hold its fifth congress at Sherbrooke, Quebec, during the second week of August, 1910. This date was selected in order that the members might attend the meeting of the Canadian Medical Association, which will be held the last of the month. Elaborate plans are being made to make the meeting a success in every respect, and an invitation to be present is extended to all French physicians in Canada, the United States, and elsewhere. Dr. Frederic A. Gadois, of Sherbrooke, is secretary general of the congress, and the other officers are: President, Hon. P. Pelletier, of Sherbrooke; first vice-president, Hon. J. J. Guerin, of Montreal; second vice-president, Dr. Joseph E. Laroche; and treasurer, Dr. J. Omer Ledoux, of Sherbrooke.

Southern Surgical and Gynecological Association.—The twenty-second annual meeting of this association will be held at Hot Springs, Va., on Tuesday, Wednesday, and Thursday, December 14th, 15th, and 16th, with headquarters at the Hot Springs Hotel. According to the preliminary programme which has just been received, forty-seven papers will be read, and the list of authors includes the names of well known men from all over the United States, while the subjects announced give promise that the programme presented will be of more than ordinary interest. The subject of the president's address will be Latent and Active Neurasthenia in its Relation to Surgery. Ample arrangements have been made for the entertainment of the visiting members and their friends, and a good time is expected. Dr. Lewis C. Boshier, of Richmond, Va., is chairman of the Committee of Arrangements, and the present officers of the association are: President, Dr. Stuart McGuire, of Richmond, Va.; vice-presidents, Dr. John Young Brown, of St. Louis, Mo., and Dr. R. S. Cathcart, of Charleston, S. C.; secretary, Dr. W. D. Haggard, of Nashville, Tenn.; and treasurer, Dr. W. S. Goldsmith, of Atlanta, Ga.; council, Dr. Howard A. Kelly, of Baltimore, Md.; Dr. Lewis S. McMurtry, of Louisville, Ky.; Dr. George H. Noble, of Atlanta, Ga.; Dr. George Ben Johnston, of Richmond, Va., and Dr. Bacon Saunders, of Fort Worth, Tex.

A Postgraduate Course in Tropical Medicine.—Announcement is made of a course in tropical diseases and medical parasitology to be given in the Oakland, Cal., College of Medicine during January, February, and March, 1910, under the direction of Dr. Creighton Wellman. This course is open to students and graduates outside the regular attendance at the Oakland College of Medicine. The course, while approached from the viewpoint of scientific medicine, will be eminently practical in character, the students doing for themselves the actual work of preparing and examining pathological material. The work has been specially planned to meet the needs of practising physicians in detecting and handling tropical diseases. Particular attention will be paid to diseases already endemic in this country. The course will consist of twenty-four lectures and laboratory periods, two being given each week, besides the exhibition and study of interesting cases of tropical diseases both at the school and at various hospitals. The course is as follows: 1. Why the Physician in Temperate Climates Should Study Tropical Diseases; 2. The Value of Scientific Method in Tropical Medicine; 3. Protozoa and Human Disease; 4 and 5. The Systematic Position and Life Cycle of the Human Malarial Parasites; 6. Intestinal Amebiasis and Its Effects; 7. The Rarer and Less Important Protozoal Parasites; 8. The Nature and Prevalence of Helminthiasis in Man; 9. The Zoological Characters of Some Parasitic Nematodes; 10. The Parasitology of Filarial Diseases; 11. Hookworm Disease; 12. Other Round Worm Infections; 13 and 14. Structure and Biology of the Commoner Trematode Parasites of Man; 15 and 16. The Biology and Structure of the Common Cestodes found in Man; 17. Arthropod Carriers of Human Disease; 18. The Characters, Metamorphosis and Significance of Mosquitoes; 19. House Flies and Public Health; 20. Other Noxious Arthropods; 21. A General Consideration of the Bacterial Diseases of the Tropics; 22. Human and Rodent Plague and Fleas; 23. Leprosy in Men and Animals; 24. Some Tropical Diseases of Unknown Etiology. The fee for the course will be \$50, which includes pathological material, stains, etc. For further information concerning the course, address Dr. Edward N. Taylor, registrar, First National Bank Building, Oakland, Cal.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 18, 1909.

1. A Review of Recent Experimental Work on Hemorrhagic Conditions, By WILLIAM PALMER LUCAS.
2. The Treatment of Summer Diarrhoea as Influenced by Etiology, By CHARLES HUNTER DUNN.
3. Report of a Case of Hodgkin's Disease in a Child, By HALSEY DeWOLF.
4. The Care of Club Foot in Infancy without Operation, By ALBERT EHRENFRIED.

2. Treatment of Summer Diarrhoea.—Dunn bases his treatment of summer diarrhoea upon the known facts as to the aetiology. He takes up the treatment as it should be carried out in the four distinctive types: 1. Acute nervous diarrhoea: Castor oil or calomel, boiled water for twelve or twenty-four hours, temporary dilution of food, paregoric in persistent cases. 2. Acute intestinal indigestion, type of deficient secretion, irritative diarrhoea: Castor oil or calomel, boiled water for twenty-four hours, barley water or other carbohydrate solution for a second twenty-four hours, followed by dilute milk modifications, with low fat and casein and high sugar and whey proteid; irrigation of the colon in long standing cases. 3. Acute intestinal indigestion, fermentation type, fermental diarrhoea: Castor oil or calomel, boiled water for twenty-four hours, barley water for the second twenty-four hours; avoid proteid foods, such as albumin water or whey. It is safest not to begin milk feeding till the third day, and then very cautiously, with modifications low in fat, whey proteid and casein. Living lactic acid bacilli are a specific against this disease and are given in ripened, fat free milk or in buttermilk, which is best begun after forty-eight hours. Irrigation of the colon in long standing cases. 4. Infectious diarrhoea: Castor oil or calomel, boiled water for twenty-four hours, barley water for the second twenty-four hours; subsequent feeding according to the type of indigestion also present; irrigation of the colon twice daily; antidyenteric serum in resistant cases.

4. Club Foot in Infancy.—Ehrenfried thinks that practically all cases of congenital club foot are curable without operation if taken in hand before the child is six weeks old, the younger the infant at the time of instituting treatment the better. The results are better than if treatment is postponed until operation becomes necessary. The routine treatment consists of manipulation, followed by a plaster bandage, every two weeks, progressively overcorrecting the foot; as soon as the foot offers no resistance to overcorrection and maintains the normal position naturally, continued manipulation, a tin splint to be worn at night, or a brace if the child is old enough to walk. Relapses are bound to occur under any form of treatment if the aftercare is neglected; the patient should be kept under close observation for one year after apparent complete recovery.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
November 27, 1900.

1. Value and Limitations of Salt Free Diet and Restriction of Fluids in Nephritis. By VICTOR C. VAUGHAN.
2. Causes of Hypertension in Nephritis. By JOHN H. MUSSER.
3. Clinical Value of Recent Studies in Experimental Nephritis. By HENRY A. CHRISTIAN.
4. Management of Uræmia. By EDWARD F. WELLS.
5. Ovariectomy and Myomectomy Early in Pregnancy, with Full Term Delivery. By H. GRAD.
6. Transmission of Bovine Tuberculosis to Children. By HENRY LARNED KEITH SHAW.
7. Embolomycotic Aneurysms. By DEAN LEWIS and V. L. SCHRAEGER.
8. Field Training of Militia Surgeons. By FRANK W. HENDLEY.

1. **Salt Free Diet in Nephritis.**—Vaughan remarks that urea and uric acid are not important constituents of the urine so far as their toxicity is concerned. About eight-five per cent. of the toxicity of the urine is due to its inorganic constituents, the most toxic of which is potassium chloride. There are present in normal urine certain organic poisons, the nature of which has not yet been ascertained. Although the inorganic constituents, notably potassium chloride, are markedly poisonous, they can not be regarded as standing in a direct causal relation to that complex of symptoms which we designate as uræmia. A small fraction of a grain of potassium chloride, injected into a ventricle of the brain of an animal, may cause prompt death, but neither the symptoms nor the post mortem findings are those of uræmia. In withholding salts from our nephritics we are not withholding the direct cause of uræmia. The best that we can hope for in the use of a salt free diet is to protect the kidneys by decreasing to a certain extent their labor and thus conserving their capacity as organs of elimination. The inorganic salts, and certainly the chlorides of sodium and potassium, are not, singly or combined, the active and direct cause of uræmia. Any inorganic salt above that needed in the processes of metabolism is without benefit to the body and increases unnecessarily the stress of work thrown on the kidneys, and, when these are already diseased, it is in accord with good sense to lighten their burdens so far as can be done without danger. There are some reasons for suspecting that the inorganic salts of normal urine, carrying about eighty-five per cent. of the toxicity of this fluid, and the organic constituents, carrying the remaining fifteen per cent. of toxicity, partly neutralize each other, at least it has been repeatedly found that the ash of urine is decidedly more toxic than the whole urine. There is evidence that an absolutely ash free diet may soon disturb the health of a normal individual. In uræmia the poison results from a radical change in metabolism, and the active agent produced is not one of the normal constituents in urine. It is possible that protein sensitization may give us more exact information concerning the nature of the poison elaborated in uræmia. But poisoning from anuria and uræmia are two distinct things, and, while the inorganic salts are the most poisonous constituents of the urine, their retention in the body can not be regarded as the cause of uræmia—certainly not the direct cause. It has been repeatedly shown that it is difficult and probably

impossible to reduce the amount of salt in the living tissues below a certain, fairly well defined minimum. Life is no longer possible when this reduction passes this point. The molecules of living cells do not function when the content of inorganic salt falls below this minimum, which varies in different animals and in the different organs and tissues of the same animal. It seems that the greatest good is to be secured by restricting salt in the food of those patients who may be called prenephritics. We frequently meet with patients of this kind. They are men and women past the prime of life who have been unduly energetic, often of good habits, with the exception of the tendency to overwork. The heart has been unduly taxed; they get out of breath easily; occasionally they grow dizzy. Blood pressure is high. There may be a trace of albumin in the urine or the most careful and frequent examination may fail to show this abnormality. He advises these patients of this class to have their food prepared without the addition of salt: 1. They can educate themselves to eat unsalted food. 2. With unsalted food they drink less. Vesicular fulness can be induced by water as well as by beer. 3. The kidneys are relieved of excessive work in eliminating excess of both salt and water. Milk contains about two grammes of sodium chloride each litre and on an exclusive milk diet three litres each day supply the necessary calories for the average man. On such a diet the individual receives daily about six grammes of salt, and this seems to be all one needs in health or in disease. A mixed diet of unsalted meat, potatoes, bread, butter, fruit, sugar, cream or milk, and coffee or tea of equal caloric value contains in the daily ration about three grammes of salt, and this may be increased by the addition of an equal amount if the taste is objectionable.

3. **Experimental Nephritis.**—Christian states that as yet too little work has been done for the studies in experimental nephritis to throw much light on the etiology and treatment of nephritis. It is in the chronic nephritis that least is known about cause and cure. Experimental results in the production of chronic nephritis have been inconstant, and by nature such experiments are difficult. The repeated injection of various irritants has resulted in a certain number of cases in the production of lesions fairly analogous to the chronic renal lesions that we find in man. In animals, however, the remarkable recuperative power of the kidney makes the production of chronic lesions very difficult. Still, so far as results have been obtained, they suggest that in many cases chronic lesions in man result from continued action of small amounts of toxic substances, but throw no light on the cause of the appearance of these substances. Lead salts are about the only substances used experimentally which could in any possible way be similarly active in man, and it is not conceivable that lead poisoning is a factor in the production of many cases of chronic nephritis. Some experiments seem to show that a single, very extensive, degenerative process in the kidney may result in the production of chronic lesions; and it may be that a few cases in man result in this way, just as at present it is believed that certain cases of cirrhosis of the liver are the result

of some single, acute degenerative process. Very little light so far has been thrown on the aetiology of nephritis by experimental methods, however, and no assistance in the cure and prevention has been given.

MEDICAL RECORD

November 27, 1909.

1. The Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation. Preliminary Report of Results, By JOHN F. RUSSELL.
2. Is There a Venereal Peril for Us? By JOHN VAN RENSSELAER HOFF.
3. Hemolysis and Its Diagnostic Significance in Cancer and Tuberculosis, By FRANK SMITHIES.
4. Atropine as a Hemostatic, By WILLIAM F. WAUGH.
5. A Statistical Study of Alcoholism as a Causative Factor in Insanity, By CLYDE R. MCKINNISS.

1. **The Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation.**—Russell bases his treatment on the well known fact that lime forms about three quarters of the total mineral solids of the body. It is found in all tissues and fluids and certain of its salts are necessary for physiological activities. Because of this widespread occurrence and specific influence on body processes, and because certain conditions of ill health are associated with a lessened amount of lime in the organs, it has naturally been a subject of speculation whether disease may not be the result of a deficient supply of this element. The chief lime bearing food is milk, which has been prescribed in the treatment of the tuberculous since the earliest times. Next to milk, eggs contain the greatest amount of lime. Milk and eggs are largely employed in the modern dietetic treatment of tuberculosis. The most important salt of lime is the insoluble phosphate. The manner of the absorption of phosphate of lime is not explained by physiologists. It is, however, stated that its absorption in an assimilable form is best assured when it is administered in combination with proteid substances. In other words, when lime phosphate is in chemical union with proteid, this combination is acted upon by the gastric enzymes and prepared for absorption in a condition suitable for nutrition. Since the beginning of Russell's dispensary work in the treatment of pulmonary tuberculosis, March 14, 1898, milk has formed a large part of the diets. Eggs were added a few years later. During this time a number of patients have been apparently cured; a number have failed to receive substantial benefit; a number have failed to receive any benefit at all. While speculating on the manner of the absorption of the lime in milk it occurred to the writer that if the gastric secretion lacked rennet, combination of lime and casein would not take place and lime would not then be absorbed in a form suitable for tissue nutrition. This suggested a possible explanation of the failures, while the successes were explained on the assumption that either the gastric secretion of these patients was normal and they had, previous to treatment, received an insufficient supply of lime bearing food which would yield this combination, or, their gastric secretion not being quite normal, due to an inconstant secretion of acid in amount necessary to produce rennet, these pa-

tients had received sufficient acid in the food prescribed to activate rennet zymogen and thus insure the lime combination necessary. The special aim of treatment is therefore to supply lime phosphate, casein, and hydrochloric acid together, as neither alone will answer; they must all be present in the stomach at the same time. The addition of dilute hydrochloric acid to milk and eggs accomplishes this endeavor. He has the milk-egg-acid mixture prepared in the following manner: Two eggs are beaten, strained, and mixed with sufficient milk to make one quart. To each quart of this mixture four drachms of dilute hydrochloric acid are added and stirred until thoroughly mixed. The mixture is then bottled and put in the ice chest. Patients drink one pint at the morning hour and one pint at the evening hour. The appearance of the curd varies. The warmer the milk and egg mixture when hydrochloric acid is added the thicker the curds. The curds are, therefore, sometimes thicker and more noticeable than at others, but are always soft, rather fine, and in no way disagreeable to drink. Unlike rennet clotted milk this mixture does not require beating before being drunk. The taste of raw egg is much improved by the acid. Of forty-seven patients treated, twenty-two, or 46.8 per cent., were apparently cured, and the rest, twenty-five patients, are still under treatment.

2. **Is There a Venereal Peril for Us?**—Hoff says that we of the United States have a serious peril confronting us, which threatens national venereal infection. Strange to say there are not lacking those who discourage all effort to control venereal disease on the ground that such control encourages vice. Indeed, so strong is this sentiment that our government does not attempt to protect its citizens against these infections, though it does so against all other infectious diseases. The sexual instinct is a condition, not a theory, and its demands are not always controllable. Some of our people will act from instinct rather than reason, do what we may to inform them. Could such alone be made to suffer for their immoral practices, we might dismiss the subject, as an economic proposition, without further consideration. Unfortunately this is impossible, consequently every person exposed to the probability of venereal infection should be protected against himself, otherwise he becomes a possible nuisance to the community, threatening the health of the innocent and guilty alike, more than that, threatening generations unborn and the very existence of the race. "No considerations of a moralizing tendency should be opposed to the prevention of so disastrous a calamity" as universal venereal infection among our people.

5. **Alcoholism as a Causative Factor in Insanity.**—McKinniss bases his report upon 520 male patients, a majority of whom were admitted from Philadelphia and the larger towns in the Counties of Philadelphia, Delaware, Montgomery, Bucks, Lehigh, and Northampton. In forty-six per cent. of these, alcohol either alone or in combination was an important aetiological factor. In 13.5 per cent., they were classed as alcoholic psychoses. In forty-one per cent of the imbeciles and 34.5 per cent. of the epileptics, alcohol was responsible for their commitment.

BRITISH MEDICAL JOURNAL

November 13, 1908.

1. The Present Position of the Neurone Doctrine in Relation to Neuropathology, By F. W. MOTT.
2. Remarks on General Spinal Analgesia, By THOMAS JONNESCO.
3. The Departmental Committee on Humidity and Ventilation in Humid Cotton Weaving Sheds, By MATTHEW D. O'CONNELL.
4. Classification of Cases of Pulmonary Tuberculosis, By WILLIAM R. HUGGARD.
5. A Case of Acute Lupus Erythematosus, By F. BEETHAM and F. W. EURICH.
6. A Case of Henoch's Purpura, By LEIGH DAY.

2. **General Spinal Analgesia.**—Jonnesco says that the fundamental principles in spinal analgesia are that puncture of the arachnoid may be performed at all levels, and that to the anæsthetic, whether stovaine, tropacocaine, or novocain, strychnine should be added. Puncture of the arachnoid at whatever level is harmless, and the fear of pricking the cord unfounded; even if it happens it is not harmful. Mediocrvical puncture is useless and dangerous; middorsal puncture is difficult and useless; superior dorsal puncture between the first and second dorsal vertebræ and dorsolumbar between the last dorsal and first lumbar vertebræ are easy, and suffice to obtain analgesia of all regions of the body. The addition of neutral strychnine sulphate to the anæsthetic preserves the full antiseptic power of the solution and at the same time neutralizes its injurious action upon the bulb. Thanks to this addition, superior spinal analgesia can be performed without danger. Among known anæsthetic substances, stovaine, tropacocaine, and novocain seem to be the best; any of them may be used with the addition of strychnine. The strychnine and the anæsthetic substance need not be sterilized, a process which would destroy some of their properties, but the water used for making the solution must be sterilized but not distilled. The injection should consist of 1 c.c. of solution, the amount of strychnine and anæsthetic substance being varied. The technique is simple, requiring only a Pravaz syringe and the usual needle for lumbar puncture. There are no contraindications for general spinal anæsthesia, which always succeeds if the liquid penetrates into the arachnoid cavity and if the dose of the anæsthetic is sufficient. General spinal anæsthesia is absolutely safe; it has never caused death, nor produced any important complications, early or late. General spinal anæsthesia is infinitely superior to inhalation anæsthesia. Owing to its simplicity, it is within the reach of all, and as there is no contraindication it may be employed with any patient. As it can be performed by the surgeon himself it does away with the attendance of a person often inexperienced, and never responsible. In operations on the face, or the throat, where analgesia by inhalation is difficult and often incomplete, spinal analgesia is a great resource. In laparotomies, owing to the "abdominal silence" it determines, it is very much superior to analgesia by inhalation.

November 20, 1908.

1. Greek Medicine in Rome, By Sir T. CLARKE AGAR.
2. The Relation between the Time of Rupture of the Fœtal Membranes and Lacerations of the Cervix Uteri, By STANLEY COLYER.

3. A Short Criticism of the so called "Rational Puerperium," By H. T. HICKS.
4. The Blood Tight Uterus and its Influence on Involution, By C. NEFFAN LONGBRIDGE.
5. Case of Lymphangioplasty for Solid Edema, By A. B. MITCHELL.
6. Intestinal Obstruction from Traumatic Rupture of Blood Vessel, By ROBERT STEWART.
7. On the Early Recognition and Treatment of Acute Intestinal Obstruction, By JOHN HARTLEY.
8. A Method of Intestinal Drainage, By MARCUS MAMOURIAN.
9. Severe Eclampsia in Early Pregnancy; Recovery, By A. SYDNEY CAMPBELL.

THE LANCET.

November 20, 1908.

1. Malaria in India, By J. T. W. LESLIE.
2. Myotonia Atrophica, By F. E. BATTEN.
3. Introductory Address, By JOHN LENTAIGNE.
4. Two Cases of Intestinal Obstruction in which a Double Resection of Intestine was Performed, By HUGH M. RIGBY.
5. Streptococcal Infection in Diphtheria; Observations in Eighty Consecutive Cases, By D. MORLEY MATHIESON.
6. Further Report on a Case of Thoracostomy for Heart Disease, By ALEXANDER MORISON.
7. Kala Azar in Madras, especially with regard to its Connection with the Dog and the Bug (Conorhinus), By C. DONOVAN.
8. Two Rare Surgical Conditions: (1) A Case of Acute Torsion of the Splenic Pedicle; Recovery after Splenectomy; and (2) a Case of Floating Liver Cured by Operation, By PETER PATERSON.

1. **Malaria in India.**—Leslie says that out of a total number of 8,000,000 deaths recorded during an ordinary year, 1,130,000 deaths are caused by malaria. A very large fraction of the total mortality from fever among the general population occurs among children and the aged, and in epidemic years they suffer disproportionately, because in such years they have to suffer from privations which loosen their feeble hold on life. In the Punjab in 1908 the infantile death rate from fever was doubled and the fever death rates among children between the ages of one year to ten years of age were more than doubled. While due allowance must always be made for the share of the total mortality occasioned by malaria among the very young, it seems that, in normal years at any rate, there is sometimes a danger of exaggerating it, for it is not uncommon to find practically all the deaths occurring in infancy attributed to malarial fevers. In normal years many of the deaths which result from malarial fevers are directly due to the treatment, or rather want of treatment, of the cases, not neglect of medicinal remedies, but withholding of food. In this country and in some others it is an article of popular superstition that a fever should be starved, and the sufferer and his friends believe that the taking of food brings on the attack of fever. Too often it is the sufferer that is starved and not the fever. In any place in which malaria exists meteorological conditions may determine a severe epidemic of fever, when the disease becomes not only much more common, but enormously more fatal than in ordinary years. When heavy rains precede a severe outbreak of fever they cause floods, when large tracts of country are submerged, houses collapse, harvests are destroyed, and the poorer classes of the peasantry are not only thrown out of employment but

are exposed to great privation and hardship. It is then that the mortality among children and the aged is so high—malaria, owing to the simultaneous occurrence of exposure and privation, has become a very fatal disease. These are obvious considerations, but there are others which have not yet been fully elucidated. The floods, of course, produce lasting pools of water in which mosquitoes breed, but a feature of these autumn epidemics is the suddenness of their onset, which, it seems, can be accounted for only by large numbers of mosquitoes being very rapidly infected. The cause of malaria is a sporozoan parasite of which there are three species generally recognized. These parasites pass the sexual phase of their lives in certain mosquitoes and the asexual phase in the blood of man. The important fact in respect to the prevention of malaria is that in nature the parasites occur in both hosts and, so far as is known, nowhere else. Preventive measures are founded on this fact and have for their object the destruction of the insect host, the prevention of the transference of the parasites from one host to another, or the destruction of the parasites in the blood of man. It is unnecessary to enumerate in detail the devices which have been used to effect these objects; they all may, he says, be classified under three heads: 1. The extermination of mosquitoes; 2, the prevention of bites; and 3, the administration of quinine. The prevention of bites is useful as a supplement to more radical measures, but so far as this is effected by wire gauge screens and mosquito curtains, which are expensive and require careful handling, the use of the measure must be limited to the wealthier class. The author speaks then of the distribution of quinine and the instructions to be given to the natives.

2. **Myotonia Atrophica.**—Batten remarks that the prognosis in myotonia atrophica is usually slowly progressive, but in some cases it does not seem to advance, for the patients are able to carry out their usual occupations for many years. But little difficulty should arise with regard to diagnosis when once the leading features are recognized. The condition might be regarded as a muscular atrophy of a myelopathic origin, but the distribution of the atrophy is strongly against such a view. The condition might be regarded as a myotonia congenita (Thomsen's disease), and some authors have regarded these cases as aberrant forms of that disease. The weakness of the facial muscles and the character of the articulation may suggest the presence of myasthenia gravis, and some cases have been so described. The muscles do not respond readily to the faradic current; they do not, however, show the myasthenic reaction. From the various types of myopathy it is by no means easy to distinguish this group, for features are present which very closely resemble the facioscapulohumeral type of Landouzy and Déjerine, and also the "distal" type; the presence of the myotonic symptoms should separate such cases from these groups. In conclusion, he summarizes the leading features as follows: A patient, usually a male, between the twentieth and thirtieth year of life, begins to complain of weakness of the limbs and wasting of muscles. Some stiffness of muscles may also be complained of. On examination he is found to have weak-

ness and atrophy of the facial muscles, of the sternomastoids, of the flexors and extensors of the wrist, of the extensor of the leg or dorsiflexors of the foot, and the striking myotonic phenomenon that after grasping an object he has difficulty in relaxing his grasp. Pathologically there is a general cirrhotic condition of the muscles, such as is found in muscular dystrophy. The spinal cord may show some degeneration in the posterior columns, but the other portions of the nervous system are normal. When once seen the condition is easy of recognition. That variations from this clinical picture have been and will in future be described is certain, but the name "myotonia atrophica" will serve as a point around which this type of case may be collected and investigated.

5. **Streptococcal Infection in Diphtheria.**—Mathieson states that the frequent occurrence of isolated phenomena about the twelfth or thirteenth day of an attack of diphtheria was first called attention to by Sevestre and Martin. The phenomena which they described consist of one or more of the following: 1. A cutaneous eruption (most frequently scarlatiniform, but in a few cases a simple erythema); 2, joint pains; 3, albuminuria; and 4, general constitutional disturbance, more or less marked. Sevestre and Martin, and later Roux, suggested that the frequency with which these phenomena developed on or about the thirteenth day seemed to indicate that they were the symptom complex of a secondary disease, with an incubation period of thirteen days, the infection occurring at the time of invasion of the diphtheria. They further suggested that the cause was organismal and probably streptococci, reasoning from the facts, 1, that they frequently found evidence of mixed infection in the bacteriological examination of the throats of these cases; and 2, that they occasionally found similar symptoms develop in pure streptococcal infections of the throat. Antitoxine, they were inclined to believe, had the effect of lowering the resistance of the organism to the action of this secondary infection, just as suppuration is more liable to occur in a part poorly supplied with blood. Mathieson then reports his observations made in eighty consecutive cases of diphtheria admitted to the Infectious Disease Hospital, Leith. A bacteriological examination of the throat of each case was made on admission and at intervals during the stay in hospital, and the clinical progress was recorded. In nine of the eighty cases a marked streptococcal infection of the throat was found at one time or other in the course of the disease. Out of these nine symptoms corresponding to those described by Sevestre and Martin developed about the thirteenth day in five patients. In the remaining seventy-one cases where no streptococcal infection of the throat was at any time found two patients showed epiphenomena about the thirteenth day. In other words, in fifty-five per cent. of the streptococcal cases "thirteenth day" symptoms developed; and these symptoms developed in 2.8 per cent. of the nonstreptococcal cases. These results, although they refer to only a limited number of cases, seem to suggest that there is some connection between the streptococcus infection and the "thirteenth day" phenomena.

8. **Two Rare Surgical Conditions.**—One of the

two rare surgical conditions, mentioned by Paterson, is an acute torsion of the splenic pedicle in a nulliparous girl, in whom there was no suspicion of malaria. For five months previous to her admission to the hospital she suffered from frequent, almost daily, attacks of abdominal pains of a colicky nature. These pains were localized to the lower part of the abdomen and were never accompanied with vomiting. They were most severe when she lay flat on her back, and were relieved by sitting up in bed. The day before she came under observation the pain became very severe and, for the first time, was accompanied with almost constant vomiting of bile-stained fluid. The pain extended across the abdomen from one iliac crest to the other, never altered its position, and, like the previous less severe attacks, was relieved by sitting up. Flatus was being passed fairly freely. Examination revealed the presence of a smooth, rounded tumor extending from one iliac fossa to the other, and from the umbilicus to one inch above the symphysis in another. It was very firm to the touch, very tender, and practically fixed. Neither rectal nor vaginal examination revealed anything abnormal. The temperature was 103° F., and the pulse was 120. The white blood cells gave a count of 10,000 in a cubic millimetre, of which 79 per cent. were polymorphs and 4 per cent. lymphocytes. The red cells numbered 5,440,000 in a cubic millimetre. When the abdomen was opened below the umbilicus the mass, which was slightly adherent to the anterior abdominal wall, was found to consist of a greatly enlarged spleen with adhering intestine and omentum. The pedicle had undergone four complete turns, and the vessels, which were about the diameter of the index finger, were completely thrombosed. An incision made into the substance of the spleen did not bleed. The adhesions were separated; the pedicle was ligated, the organ was removed, and the abdomen was closed without drainage. Within the next four days the temperature had fallen to normal and the general condition was satisfactory, but she then was attacked with a severe bronchitis, the temperature registering 104° F. For five days the patient was acutely ill, but the symptoms gradually subsided and the remainder of her residence in hospital was uneventful. Three weeks after operation the red blood cells had fallen to 4,320,000, while the white cells were practically stationary, though the lymphocytes had risen to ten per cent. The observation made by several writers that the appetite is greatly increased after splenectomy was not confirmed in this case. The spleen after removal weighed $32\frac{1}{2}$ ounces.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 11, 1909.

1. Some Remarks Concerning Albuminuria and Cylinduria in Chronic Koprostasis, By WILHELM ERSTEIN.
2. Chlamydozoa in Nongonorrhoeal Ophthalmia Neonatorum, By L. HALBERSTÄDTER and S. VON PROWAZEK.
3. The Nonfixation of the Cobra Venom Hæmolytic in the Mentally Diseased, By L. OMOROKOW.
4. A Rare Case of Cystic Dilatation of the Ductus Choledochus, By WEISS.
5. Severe Sausage Poisoning, By VIKTOR HINZE.
6. Treatment of Hæmorrhoids by Pessaries, By RATKOWSKI.

7. Internal Treatment of Urinary Diseases with Special Reference to Cystopurin, By KURT BEBERT.
8. Biology of the Suprarenal System, By RUD. EHREMANN.
9. What is Anaplasia? By D. VON HANSEMANN.

2. Chlamydozoa in Nongonorrhoeal Ophthalmia Neonatorum.—Halberstædter and von Prowazek say that in a certain number of cases of ophthalmia neonatorum the inflammation is not caused by gonococci but by a group of microorganisms that they have described under the name chlamydozoa. They have found microorganisms in trachoma.

3. Cobra Venom Hæmolytic.—Omorokow found the positive cobra venom reaction most frequent in psychoses, independent of the form, and in the placental blood. In surgical diseases in psychically normal persons the reaction was absent in most cases, positive in only one out of thirteen cases in which the test was made.

4. Cystic Dilatation of the Ductus Choledochus.—Weiss reports a case in which the ductus choledochus was dilated to such an extent that it stimulated the presence of an echinococcus cyst. It contained 800 c.c. of a slightly cloudy biliary fluid, but no echinococci. The patient died nine days after the operation.

5. Sausage Poisoning.—Hinze reports a case in which a man, twenty-two years old, ate half a pound of sausage and within twenty-four hours presented the symptoms of acute intoxication, vomiting, acceleration of the pulse, albuminuria, constipation, anuria, and a slight fever, together with total amaurosis, paresis of both the oculomotor and abducens nerves, and both paralysis and anæsthesia of the lower limbs. Under treatment some improvement took place, but at the end of four months his condition was still very bad. The temperature was subfebrile for a month and a half, then it began to fluctuate. On the internal organs the liver alone was sensitive to pressure and a catharrhal condition of the apex of the right lung developed after the patient had been in the hospital a month. Movements of the limbs were possible though they were very weak. The legs were very atrophic, the left hand slightly so. Reflexes were absent. Muscle sense present. Complete anæsthesia of the feet and of the lower third of the leg; paræsthesia of both lower limbs almost as high as Poupart's ligament in front, to over the popliteal space behind. Vision of the left eye fairly good, that of the right still bad. Sphincter normal. Functions of the ocular muscles apparently restored.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 12, 1909.

1. Suturing of Severe Shot Wounds of the Lungs, By GRASMANN.
2. Experiences with Wassermann's Syphilis Reaction, By REINHART.
3. The Mechanism of the Seroreaction of Syphilis, By LIEFMANN.
4. Much's Reaction in the Mentally Diseased, By NITSCHKE, SCHLIMPERT, and DUNZELT.
5. The Early Diagnosis of Measles, By HECKER.
6. Foot Troubles, By TAUSCH.
7. Alimentary Glycosuria with Chronic Enteritis, By FENCK.
8. Therapeutic Experiences with Medinal and the Homologous Dipropyl Fixation, By STEINITZ.

9. The Ray Treatment of Tuberculosis of Bones.
By FREUND.
10. Fifth Report Concerning the Influence of the Treatment at Carlsbad upon Gallstone Diseases.
By FINK.
11. A Case of Hypnotically Produced Bleb Formation.
By HELLER and SCHULTZ.
12. A Case of Diffuse Dilatation of the Oesophagus.
By MAY.
13. Vicarious Menstruation in the Form of Hemorrhages from the Lips.
By HAUPTMANN.
14. Fatal Hemorrhage from the Vessels of the Umbilical Cord in a Boy, Twelve Days Old, Belonging to a Family Subject to Hemophilia.
By ALTHOFF.
15. Hyperemesis Gravidarum.
By FLESCHE.
16. Instrument for the Taking of Blood Tests for Bacteriological Examinations.
By MÜLLER.
17. The Geographical Distribution of Diabetes Mellitus.
By WILLIAMSON.
18. Estimation of the True Size of Organs from the Size of the X Ray Shadows.
By REH.
19. The Production of Organ Specific Precipitin Sera.
By GRUND.
20. Reply to the Preceding Article.
By HECKER.

1. **Suturing of Severe Shot Wounds of the Lungs.**—Grasman reports two cases in which shot wounds of the lungs were successfully sutured. The indication for the operation in both cases was a tense pneumothorax. In the first case an injury of the heart could not be excluded at first, but during the operation it was found that the pericardium alone had been injured. In the second case the great anemia led to the supposition that the great vessels had been injured, but the operation demonstrated that the hemorrhage had come wholly from the wound in the lungs. The bullet in the first case had passed from before backward through the lower lobe of the left lung and was found lying in the pleural cavity; in the second it had passed from before backward and outward through the upper lobe and was found in the latissimus dorsi. He concludes that operative measures are indicated in these cases when there is great hæmothorax, or when in the hours succeeding the injury an increase of the effusion in the cavity of the thorax can be demonstrated; and in tense pneumothorax, when puncture does not quickly bring relief, or when it is complicated with a hæmothorax.

5. **Early Diagnosis of Measles.**—Hecker says that there is a leucocytosis in the incubation stage of measles, but that it is not constant and of only short duration. As a rule, from one to three days before the appearance of the Koplik spots there occurs a distinct diminution of the total number of leucocytes, a leucopenia, which increases with the outbreak of the exanthem. This leucopenia could be detected in some cases in the first stage of incubation, ten or eleven days before the Koplik spot, and was interrupted on some days by a normal condition or a hyperleucocytosis. There was a marked diminution of the total number of leucocytes. The diminution of the lymphocytes, the lymphopenia, was very marked. It is present not only in the exanthematous stage, but in most children during the incubation, from three to five days before the eruption. The premonitory lymphopenia, and to a less degree the leucopenia, he considers a good help in making an early diagnosis of measles.

11. **Hypnotically Produced Blister.**—Heller has shown that a blister can be produced by suggestion on the back of the hand of a person, nineteen years old, who was very sensitive

to suggestion and had served as a subject many times previously. The blister healed at the end of five days, leaving a red, smooth scar. This case shows that in certain individuals changes in the skin may be produced by hypnotic suggestion, consisting of vasodilator exudation and inflammation leading to the formation of a cicatrix. A particularly high vasomotor sensitiveness of the person experimented on is not necessary.

SOUTHERN CALIFORNIA PRACTITIONER.

(JANUARY, 1908.)

1. Some Suggestions as to Diet in Tuberculous Patients,
By CHARLES C. BROWNING.
2. Gastric and Duodenal Ulcer—Surgical Treatment,
By C. D. LOCKWOOD.
3. Renal Calculus, Operation, Pulmonary Embolism—Case Report,
By ROSE D. BULLARD.
4. Internal Obstruction from Peritoneal Bands,
By C. VAN SWAENBURG.
5. Plague among Ground Squirrels in Contra Costa County, California,
By W. C. RUCKER.

1. **Diet in Tuberculous Patients.**—Browning gives a very good dietary for tuberculous patients. Breakfast: Milk, 1 pint (usually coffee added to flavor), 2 breakfast cupsful. Toast, 2 fairly thin slices, or 4 of the ordinary triangles. Butter, $\frac{1}{2}$ oz., a piece the size of a large walnut. An egg. Some meat, 1 oz., an ordinary sized helping; or a herring. If porridge is taken it will not be necessary to take so much toast.—11 a. m.: $\frac{1}{2}$ pt. of milk, a tumblerful.—Lunch: Milk, $\frac{1}{2}$ pt., a tumblerful. Bread, 2 oz. Butter, $\frac{1}{2}$ oz. Fish, 2 oz., or an ordinary sized helping. Potatoes, $2\frac{1}{2}$ oz., two potatoes the size of an egg. Green vegetables and stewed fruit in ordinary amounts, if liked. Meat, $2\frac{1}{2}$ oz., a large helping, but varies much in appearance according to the variety. Milk pudding, 5 oz., half a tumblerful or a good plateful.—Tea: Tea, a slice of thin bread and butter (1 oz.) and a piece of cake (1 to $1\frac{1}{2}$ oz.).—Dinner: Milk, $\frac{1}{2}$ pt. Bread, 2 oz. Butter, $\frac{1}{2}$ oz. Fish or entree, 2 oz. Soup, green vegetables, and dessert in ordinary amounts, if liked. Meat, $2\frac{1}{2}$ oz. Boiled pudding, 3 oz., a good helping. Potatoes, $2\frac{1}{2}$ oz., two potatoes the size of an egg.—At bedtime: $\frac{1}{2}$ pt. of milk. If this dietary is compared, says the author, with that taken by the average man in ordinary health, it is seen that there is no very great difference between them; the addition of two pints of milk is perhaps the most noticeable feature. It is essential, of course, that the diet be varied and well cooked. It is not necessary to work out the exact diet of each individual in exact amounts, as several factors will enter in the individual cases which will modify them. However, they form a working basis. He believes that only in exceptional cases food should be allowed between meals, as the stomach needs rest. Weather conditions should modify the dietary.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

(JANUARY, 1908.)

1. Pathological Report of the Rotunda Hospital for the Year Ending October 31, 1908.
By ROBERT J. ROWLETTE.
2. A Case of Retroperitoneal Sarcoma.
By G. JAMESON JOHNSON.
Report on the Pathology of the Retroperitoneal Sarcoma of the Uterus.
(Dublin County Borough). By D. EDGAR FLINN.
2. **Retroperitoneal Sarcoma.**—Johnston re-

marks that in the early stages, when it is most important to recognize the symptoms of retroperitoneal sarcoma, as there is then some possibility of removing them without damaging the circulation of the intestines, the diagnosis is very difficult. The insidious onset, the absence of symptoms directly referable to the liver, pancreas, or intestines; the presence of obscure gastric symptoms without any evident cause; the presence of abdominal pain, though this varies from the merest discomfort to acute colicky pains; occasional pain in the back; the presence of resistance and tenderness in the deep abdomen; pushing forward of the colon; diarrhoea and constipation both have been noticed; the loss of weight, strength, appetite, and color; the gradual progress from bad to worse of the general condition of the patient. A combination such as these ought to lead one to suspect a retroperitoneal growth. An irregular temperature has been noticed. What the significance of the absence of hydrochloric acid in the gastric contents has in relation to abdominal sarcomata our author is not in a position to state.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

November, 1909.

1. Intestinal Perforation during Typhoid Fever in Children. By JOHN H. JOPSON and J. CLAXTON GITTINGS.
2. The General Movement of Typhoid Fever and Tuberculosis in the Last Thirty Years. By GEORGE M. KOBER.
3. Experiments Relating to the Bacterial Content of the Fæces, with Some Researches on the Value of Certain Intestinal Antiseptics. By JULIUS FRIEDENWALD and T. FREDERICK LEITZ.
4. A Case of Carcinoma on Diverticulitis of the Sigmoid. By H. C. GIFFIN and LEONIS B. WILSON.
5. Cervical Rib and Its Relation to the Neuropathies. By S. P. GOODHART.
6. The Interpretation of Aphasia. By F. X. DERGUM.
7. School Life and Its Relation to the Child's Development. By THOMAS MORGAN ROTCH.
8. Compression of the Pulmonary Veins, the Pressure Factor in the Ætiology of Cardiac Hydrothorax. By GEORGE FETTEROLF and H. R. M. LANDIS.
9. A Practical Hospital Polygraph. By THEODORE B. BARRINGER, JR.
10. Locomotor Ataxia and Paralysis Agitans in the Same Patient. By AUGUSTUS A. ESHNER.
11. A Case of Cerebral Tumor Presenting a Very Unusual Clinical Course. By R. D. RUDOLF and J. J. MACKENZIE.

I. Intestinal Perforation during Typhoid Fever in Children.—Jopson and Gittings remark that typhoid perforation is very rare in children under five years of age; after this period it is not infrequent, being about half as common as in adults. The favorite time of perforation is at the end of the second and during the third week. The diagnostic symptoms, in the order of their importance, are pain, tenderness, rigidity, fall in temperature, rise in pulse rate and collapse, vomiting, chill, and rising leucocytosis. The mortality after operation is influenced by the severity of the disease, rather than by the protracted course. It is lower under ten years of age than after this time. The mortality is lower in relapsed than in unrelapsed cases. The average mortality is somewhat less than fifty per cent. and at least twenty-five per cent. lower than in adults. The earlier the operation is performed, the better the prognosis. The technique of the operation does not differ materially from that

advisable in adults, except in the use of a general anæsthetic and the even greater necessity for rapidity in operation and avoidance of meddlesome surgery.

3. Bacterial Content of Fæces.—Friedenwald and Leitz have made observations on the bacterial content of fæces. They find that regulation of diet, together with the evacuation of the bowels, is the most effectual method that we have at hand of reducing the excessively high bacterial content of the intestine. Beta naphthol and bismuth salicylate appear to be our most effectual intestinal antiseptic drugs in normal individuals, while aspirin and ichthabin effect slight reduction, and salol gives no results whatever. The results produced by means of intestinal antiseptics in patients suffering with gastrointestinal disturbances do not seem to be marked, whereas the best results are obtained by regulation of the diet.

5. Cervical Rib and Its Relation to the Neuropathies.—Goodhardt reports such a case. He remarks that the symptoms caused by a cervical rib may be of purely nervous origin, neuromuscular, of circulatory character, of a local nature, and that the cervical rib must be admitted as an ætiological factor in local neuralgias of the arm and hand. The disturbances caused by compression of the brachial plexus are rather sensory than motor. The first of all nervous symptoms is pain, radiating down the arm, sometimes as far as the hand. After a period of paræsthesia, hyperæsthesia, or hyperalgesia, there follows a diminution of sensation. In regard to the sensory loss in cases of cervical rib, analgesia is said, as a rule, to be more pronounced than tactile anæsthesia, suggestive of a root lesion. The typical sensory change of cervical rib consists in the loss in the distribution of the eighth cervical and first dorsal root, more particularly the latter. It is this nerve which supplies the fibres to the nerve of Wrisberg, or lesser internal cutaneous nerve, the smallest of the branches of the brachial plexus. The ulnar nerve distribution is likewise involved. Owing to involvement of the ulnar nerve fibres, the inner side of the forearm is likewise usually hypæsthetic. The exclusive involvement of this area alone should direct attention to the possibility of cervical rib. Circulatory symptoms may be entirely or nearly absent, even in well marked case of cervical rib, for the reason that the subclavian artery passes in the normal way over the first rib. There is generally a well marked pulsation in the neck, but this is not invariably the case. Aneurysms of the subclavian artery, in the portion lying between the rib and the clavicle in the supraclavicular space, and thrombosis in the arteries of the upper extremity have been observed as the result of pressure from a cervical rib. Grave nutritive changes are of uncommon occurrence, but endarteritis obliterans and gangrene of the finger tips have been reported as a result of arrest of circulation. In milder cases the temperature of the arm on the side of the rib is lower, and the hand has a tendency to become pale and bloodless on trifling exertion. The subclavian vein does not suffer as does the artery, since its anatomical position gives it abundant space. A pathognomonic local sign of cervical rib does not exist. A more or less vertical osseous protuber-

ance above the middle of the clavicle, in the lateral cervical region, especially when combined with superficial pulsation of the subclavian artery, and pressure symptoms in the brachial plexus, may be regarded as a presumptive, but hardly as a positive sign. In the various desultory writings upon the subject of supernumerary rib there is no approach to unanimity of opinion as to treatment. It is only too generally conceded that conservative measures are indicated when no symptoms are present or only those of moderate pressure on the plexus. Removal of the rib, according to some observers, remains as an emergency procedure when palliative measures have failed.

8. Compression of the Pulmonary Veins.—Fetterolf and Landis have made studies in hydrothorax which sometimes accompanies heart disease. Why it occurs in some cases and not in others is not clear, for it is certain that the phenomenon bears no constant relation to the extent of the cardiac disease. The occurrence of the effusion arises chiefly from pressure of the dilated heart, but before an effusion can occur there must be present other factors than pressure, such as toxic, vasomotor, bacterial, metabolic influences, or a hydræmic condition of the blood. Any one of those agents, however, which affect the composition of the blood, will fail to account for the fact that these effusions have a marked preference for one or the other side of the chest, usually the right. That pressure alone will cause the transudate is improbable, but it is certainly a factor of the greatest importance. Another point is that the pressure must be from dilatation, as it has long been recognized that hypertrophy of the heart by itself is incapable of producing an effusion, and that dilatation, with or without valvular lesions, is an essential feature. Up to now it has been stated that the fluid is derived from the parietal pleura, especially the azygos veins. This our authors deny and demonstrate that the fluid comes from the visceral pleura, and that the outpouring is caused, so far as the pressure factor is concerned, by dilated portions of the heart pressing on and partly occluding the pulmonary veins.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held in St. Louis, October 12, 13, and 14, 1909.

The President, Dr. JOHN A. WITHERSPOON, of Nashville, Tenn., in the Chair.

(Continued from page 1091.)

Sigmoid Diverticulitis.—Dr. DANIEL N. EISENDRATH, of Chicago, stated that there had been many cases of autopsy reports of peritonitis due to perforation of these diverticula, but their rôle in the production of definite clinical pictures was not known until the paper of Gräser, in 1898. Diverticula of the sigmoid were as a rule acquired. They might occur anywhere in the large intestine, but were most common in the sigmoid, ending abruptly at the rectum. Unless they underwent secondary

changes they did not give rise to any symptoms. Telling, in 1908, collected 105 cases. Of these, nearly one half showed no clinical symptoms, but were found by accident at autopsy. Diverticula were most apt to occur in two rows at either side of the gut. They might, however, develop at the mesenteric attachment and occur between the layers of the mesentery. In some cases they were simply protrusions of the mucous membrane into the appendices-epiploicæ, while in others they formed definite pouches, either oval or flask shapes. One of the most important factors in the production of diverticula was muscular weakness incident to old age and the presence of considerable fat in the intestinal wall, which favored a pushing out of the mucosa. The most frequent secondary pathological changes were (a) infection of the general peritoneal cavity without perforation; (b) acute or gangrenous inflammation resembling the same pathological form of appendicitis; (c) acute perforation or formation of an abscess or general peritonitis.

Attention was called to the fact that the preceding pathological forms greatly resembled corresponding types of appendicitis. The other varieties not occurring in appendicitis were in the form of fistule between the diverticula and the bladder or the bowel and the development of a hyperplastic inflammation greatly resembling in appearance carcinoma. The latter form caused great thickening of the intestinal wall, so that its lumen was reduced to a minimum. The cases could be divided into the acute and chronic forms. To the former belonged the catarrhal gangrenes, with or without localized abscess formation, and perforative with general peritonitis. To the chronic belonged the chronic hyperplastic or stenosing form, the enterovesical fistulous forms, and the chronic adhesive form causing acute or chronic intestinal obstruction. The acute forms resembled the corresponding forms of appendicitis, except for pain and tenderness, rigidity and tumor formation, when present, occurring in the left iliac region. The treatment of these did not differ much from that of the corresponding forms of acute appendicitis, and, unless the case was recognized, recurrence was apt to take place. He reported one case in which diverticula were found filled with enteroliths during an operation for hernia and a second case of general peritonitis due to perforation of diverticula. He also called attention to the fact that no doubt many of the cases of the stenosing form, or peridiverticulitis, had been erroneously diagnosed as carcinoma of the sigmoid.

Dr. ERNST JONAS, of St. Louis, said a point of practical importance was that a condition of this kind was often mistaken for carcinoma of the sigmoid and in some cases sigmoid diverticulitis had been operated on for carcinoma of the sigmoid. Dr. William J. Mayo had reported several cases in which he removed part of the sigmoid for a condition of this kind, believing at the time of the operation that he had to deal with carcinoma of the sigmoid, and only after careful pathological examination of the specimen did he believe that it was a chronic inflammatory condition of the sigmoid due to diverticulitis. The weakness of the muscular walls, which was mentioned as an ætiological factor, must be either hereditary or acquired. Very little

could be done for the patient where the weakness of the muscular walls of the sigmoid was hereditary, but in the acquired condition there was first hypertrophy and later on dilatation and weakness of the muscular wall resulting, whenever there was any obstruction farther down. Adhesions around the sigmoid, which pulled the sigmoid out of place and interfered with the drainage, were the cause of diverticulitis. Another cause of diverticulitis was a slight chronic ulceration in the particular place where diverticula were found.

Dr. J. RILUS EASTMAN, of Indianapolis, was reminded of two cases in which the abdomen was opened for what was obviously an acute generalized suppurative peritonitis, which were ascribed to the rupture of an inflamed appendix. Every one present had opened the abdomen for these indications when there was no evidence whatever pointing to any infection arising in the upper abdomen, but every bit of evidence pointed to an infection arising from the lower zone of the abdomen. We had cut down upon the appendix and found suppurative peritonitis with the escape of a thin fluid filled with flocculi, followed by a thick creamy pus. We had examined the appendix and found it practically normal. We had removed the appendix not knowing what else to do with it, and we had either irrigated or left the abdomen dry and put in a large tubular drain. In a case of this general character which he had seen within a month he had found that the adhesions in the intestines were upon the left side, and while it would be absurd for him to say in the presence of such meagre evidence that he had to deal with a condition like that described by Dr. Eisendrath, still in the future he should be very cautious and be on the lookout for infections arising from these diverticula in the sigmoid, because he was reasonably sure that a sigmoid diverticulitis, followed by a rupture, had given rise to more cases of general suppurative peritonitis than he had imagined, and if we were to consider adhesions in the future we should look not only to the right side of the abdomen for the cause of this suppuration, but also to the left side occasionally.

Dr. EDWIN WALKER, of Evansville, had recently operated in such a case as Dr. Eisendrath had described. There was an abscess on the left side exactly like an appendicular abscess. He was reminded of the case of a man which was diagnosed as carcinoma of the sigmoid flexure, and the post mortem findings were precisely like those described by him. It was thought at the time that the trouble was inflammatory, but he thought there was perforation and inflammatory trouble. This case occurred twelve years ago, and in the light of what had been said to-day it was without doubt a case of sigmoid diverticulitis.

Dr. CHANNING W. BARRETT, of Chicago, said there were points of practical interest in this paper: First, the point that Dr. Jonas brought out of an acquired or congenital weakness of the bowel walls. It was likely in many cases that constipation caused the dilatation, and that resulted in overdistention of the abdomen, causing separation of the muscle fibres, and this furnished an opportunity for the mucous membrane to protrude between the weakened muscle fibres. In an acquired condition of this

kind, we should do away with any cause for overdistention; but instead of being able to do nothing in the congenital condition, it was all the more important that these conditions be looked after. Another practical point was that we had been inclined to deal with enlarged and inflamed appendices epiploicæ as though it was merely a question of having to control hæmorrhage. We might have to deal not only with hæmorrhage, but with the communication of the bowel, the same as in dealing with the appendix. Recently, in dealing with a pyosalpinx, he had felt it was desirable to cut off several of these appendices epiploicæ and deal with them as he would with a hæmorrhage.

Dr. ROBERT E. WILSON, of St. Louis, differed with Dr. Eisendrath and others in reference to acquired diverticulitis. He still clung to the old theory, namely, that all cases of diverticula of the sigmoid were congenital, and that we must go back to the embryological formation in the primitive hindgut, from which the sigmoid was developed, and look there. He did not believe the conditions mentioned caused diverticula of the sigmoid, but it was a weakened condition in the gut that was the sole cause.

Dr. R. H. BARNES, of St. Louis, believed that diverticula of the sigmoid, as well as of the other parts of the bowel, were more common than most physicians or surgeons thought. These diverticula did not always cause trouble and might only be recognized post mortem. The majority of cases of diverticula were congenital. There was a localized weakness of the muscular wall of the bowel which formed them, and these became infected through the fecal matter or from some other cause, and then we might have the symptoms of diverticulitis. The majority of cases were not recognized from the clinical symptoms, and for that reason were overlooked.

Gunshot Wounds of the Thigh; Amputation at the Hip Joint.—Dr. WILLIAM BRITT BURNS, of Memphis, reported twenty cases of gunshot wounds of the thigh. He had observed a number of others. He had been impressed with the destruction of tissue and with his inability to get good results on account of lack of repair on the part of the tissues and the seeming susceptibility to infection. In every one of the cases the parts had been thoroughly and freely opened on all sides and all kinds of material removed from the wound by scraping, by the use of scissors, removal of spicula of bone, establishing proper drainage, dressing the thigh, and using every effort to prevent sepsis; and yet the results had not been what might have been expected.

Dr. H. O. WALKER, of Detroit, had seen a few cases of gunshot wounds of the thigh that were not only made with bullets, but with buckshot and with small shot. He had opened the wounds in these cases freely and removed thoroughly all particles of clothing and other material from the wounds, and the patients had all recovered. He had not had to resort to amputation in any one of the five cases which he now recalled.

The Advantage of Pfannenstiel's Incision.—Dr. H. O. WALKER, of Detroit, said that the fibres of most of the abdominal muscles ran either diagonally or transversely; an exception to this was in the recti.

The principal bloodvessels supplying the abdominal region were the two superior and inferior epigastrics and their branches. These all ran in a general way parallel to the recti muscles. It was never necessary to cut but the two inferior epigastrics, and this was not always required. The nerves supplying the abdominal region ran in a general way parallel to the muscle fibres also. The prevention of hernia could no doubt be aided by incisions in line with the muscle fibres. It was more necessary to respect nerve fibres in incisions than bloodvessels, generally speaking. The cosmetic advantages of cross cuts were very apparent. Pfannenstiel's cross incision fulfilled all the requirements mentioned. Thirty-eight patients had been operated upon by this incision, through which practically all possible pelvic operations had been carried out.

Dr. GEORGE GELHORN, of St. Louis, said that the advantages of the Pfannenstiel incision were becoming more and more appreciated in America. It had many advantages over the longitudinal incision. He had used this incision for a number of years and had not yet seen a case of hernia, although in four cases there had been disturbances of wound healing. There was, however, a limit to the use of this transverse incision, in that the larger tumors, which extended about half way to the umbilicus, were not so easily removed through it as they were through the longitudinal incision, but except for that fact the advantages were all in favor of this transverse incision.

Dr. WALKER said that we could remove very large tumors through this Pfannenstiel incision and could go still further with it, in that we could reach the stomach, pancreas, and gallbladder, and do any surgical work which might be required to be done on any of these organs. It was an incision that had a great many advantages over the longitudinal incision in many operations in the pelvis.

Sarcoma of the Prostate.—Dr. JOSEPH RILUS EASTMAN, of Indianapolis, said it was certain that, of malignant neoplasms of the prostate, carcinoma was much the most common, although, as Barth had stated years ago, sarcoma of the prostate was doubtless less rare than had been imagined, and, owing to the circumstance that until recently very little if any distinction had been made between carcinoma and sarcoma, there had been perhaps some misconception on this point. That malignant disease of the prostate was much more common than had been appreciated heretofore might be inferred from the experience of such careful observers as Hugh Young, who in 500 cases of prostatic enlargement found 100 cases of carcinoma, or one case of carcinoma to every four of prostatic hypertrophy; and, although there had been reported fewer than thirty cases of sarcoma of the prostate of primary origin in the gland, which had been satisfactorily proved to be really sarcomata, no doubt, in view of the general indifference as to microscopical examination, many cases of sarcoma of the prostate had been carelessly called carcinoma or even tubercu-

many characteristics in common with tuberculosis. Upon microscopical examination, the masses of tissue at the base of the villi removed by the curette were found to be infiltrated and degenerated, showing a preponderance of embryonic connective tissue cells with a relatively small amount of mucoid intercellular substance. The tissue removed from within the capsule of the prostate was made up of the same spindle shaped connective tissue cellular elements.

Stricture of the Male Urethra.—Dr. E. O. SMITH, of Cincinnati, said that abnormal narrowing of the external meatus should be divided very carefully. If it was cut too widely the patient would be left without projectile force. Spasmodic contraction of the urethra was usually due to acid urine, sexual excesses, fissure of the anus, hemorrhoids, pinworms, cantharides, turpentine, etc. Strictures following traumatism were much more stubborn, and the band of scar tissue might have to be dissected out through an external incision. The popular idea that a rapid cure of gonorrhoea caused stricture was not based on facts, but, on the contrary, the longer the duration of the gonorrhoeal inflammation the more liable was the patient to have a stricture. In fact, it was the exception for a urethra to become absolutely normal after one prolonged attack of specific urethritis. The urethra behind the constricting band became dilated and a pouch was formed which was a most excellent container and incubator for the germs of sepsis, which might lead to periurethral abscess and possibly to urethral fistula. All this argued for an early treatment of stricture. Stricture was suspected when there was gleet, frequent micturition with a tardy beginning of the stream, or dribbling after urination, with possibly some hypogastric pain. In examining for stricture great care and gentleness must be practised; otherwise a false passage might be produced. Treatment was both general and local. The diet should be bland and not stimulating. Alcohol and tobacco were to be excluded. Sexual excesses were to be avoided. There should be no exposure to cold and wet.

The local treatment was by gradual dilatation. We should begin with the largest sound or bougie that could be easily passed. This might be only a filiform. We could gradually increase the size of the sounds used. Dilatation should be practised every four or five days in the beginning, all the time being surgically clean with one's hands and instruments. Urethral chill and shock could usually be prevented by giving the patient ten grains of quinine and five drops of tincture of aconite about twenty minutes before the treatment. Epididymitis might, but seldom did, follow the passage of a sound. Strictures that did not yield to the gradual dilatation treatment were the exception. Internal urethrotomy should not be attempted except by those skilled in genitourinary surgery, as there was a possibility of doing great damage. External urethrotomy was seldom necessary in the treatment of strictures other than those due to traumatism.

Burns.—Dr. A. H. BARKLEY, of Lexington, Ky., said that burns were the most frequent injury in civil life and caused the most agonizing suffering and sometimes condemned the patient to a lifelong mutilation of the most repulsive character. The

The case which the writer reported was one of spindle celled sarcoma of the prostate occurring in a man, twenty-seven years of age, and apparently running a course covering five years and having

severity of a burn depended on the character and degree of the heat, the length of time it was applied, and the thickness of the cutaneous envelope. The author reported the case of a man, aged fifty-six, an engineer, who was burned by hot water and steam. He weighed 160 pounds at the time he was injured. He had nineteen square feet of skin on his body. Of this, ten square feet were burned off, of which four square feet were burned to the third degree. Recovery was complete. The interesting points in this case were the area of skin burned, no contractures, no complications, and healing without skin grafting.

The Treatment of Some Forms of Neuralgia by Deep Injections.—Dr. D'ORSAY HECHT, of Chicago, said that his first patient was injected on November 20, 1906, and his last one on September 30, 1909. During the period between these dates he had injected forty-eight persons with tic douloureux. Eight other cases were rejected because they were unsuited for this treatment. In all cases the diagnosis was made on the strength of the short, sharp paroxysms of pain so characteristic of the condition, and after careful inquiry into all conditions of the teeth, jaws, mouth, nose, and accessory nasal sinuses, which sources were frequently responsible for pain which might quite closely simulate the disease. One must be mindful of the fact that tumors involving the fifth nerve, as well as syphilis and migraine, could give rise to pains that might readily be taken for those of trifacial neuralgia. In many of the cases external skiagraphs were taken, and where these were felt to be unsatisfactory or unreliable, intrabuccal film skiagraphs were made in addition for the purpose of eliciting better detail, thereby affording a better means of localizing possible dental or oral sources of irritation. Among the rejected cases were those in which pain was caused by the presence of abnormal dental conditions, post-influenzal nasopharyngeal infections, sinus disease, and hysteroid conditions. In point of therapeutic results, thirty-two patients were distinctly benefited, eight were improved, five were unimproved, and three were aggravated. Of the thirty-two benefited, one was free for one year and eight months. The shortest free interval had been two weeks. Recurrences had varied, in the successful cases on an average after one year. A given number had returned for reinjection upon the first reappearance of pain in four months, some six, some ten, some a year, some sixteen and eighteen months. The variability was accounted for by the personal equation and the accuracy with which the alcohol was deposited in, at, or near the nerve. In the entire series the patients required from one to five injections, this number sufficing for a permanent cure in the nonsymptomatic neuralgias. An eight per cent. salt solution at body heat, injected in the amount of from 90 to 120 c.c., seemed to act to better advantage than lesser amounts, and a different temperature.

What Women Should Know in Regard to Uterine Cancer.—Dr. J. HENRY CARSTENS, of Detroit, suggested that the medical profession agitate this subject in the lay press and on every occasion talk cancer. The doctor should talk about it in order to arouse the public as to its importance, because

it was a great menace. He had suggested to the Michigan State Board of Health that they get up a circular which should be in the hands of every woman in the cancer period of life. This circular should be in the possession of county societies and of every physician and should be given to every woman in the cancer age. The menopause came on gradually, rarely suddenly. It was not preceded by excessive flowing or discharge or pain in a healthy woman. By the cancer period was understood those years after forty, although rarely the disease might occur earlier. The first symptoms of cancer were: 1. Profuse flowing, even if only a day more than usual. Flowing or spotting during intervals or after the use of a syringe or the movement of the bowels. 2. Leucorrhoea, if not existing previously. If existing before, but getting more profuse, watery, or irritating, or producing itching, it was a very suspicious symptom. 3. Loss of weight if no other cause was apparent, with pain in the region of the womb, back, or side. If any of these symptoms occurred after the age of forty or thirty-five, a woman should seek prompt relief and insist on a thorough investigation of the cause and prompt treatment. Cancer was always at first a local disease and could be removed if early recognized, and an absolute permanent cure brought about.

Problems of the Insane and the Defective.—Dr. LEO M. CRAFTS, of Minneapolis, read a paper on this subject which embodied a consideration of past methods of care or neglect of these conditions by society and the present lines of care and nurturing of them, leading to their more frequent and prolonged survival and activity, including procreation. It also took up the conditions in the present social state tending to greater strain on the nervous system, with the increasing lines of neuropathic heredity thus engendered. It dealt with the various State and national statistics bearing on the questions and pointed out the present absolute lack of regulation or control of the free activity of these classes in producing a posterity, and the author offered suggestions for advisable legislation for effective control of such subjects.

Genital Canal Block Following Neisser Coccus Infection.—Dr. CHARLES BARNETT, of Fort Wayne, Ind., exhibited a number of photographs illustrating the pathology found in genital canal block. He contended that sterility was not the greatest factor, but that the pathology causing the block and following it, especially retention cysts, were "nagging" the man's body continuously. He believed that prostatectomy, unwittingly, frequently opened up the vesicular field for drainage. He considered that in the correction of this pathology the surgical question was a difficult one when the final results were expected to be a restoration of normal function. It was true that in some cases the cysts were emptied and the block removed. This relieved the symptoms temporarily, but the time might finally come when a recurrence would happen indicating that a thorough removal of the field that was diseased was necessary in order to prevent a further extension of the morbid process, rather than trying to save a crippled canal surrounded by contaminated glands that would never undergo complete resolution.

Some Reflex Neuroses Arising from Nasal Abnormalities.—Dr. J. A. STUCKY, of Lexington, Ky., emphasized six salient points as given by Ziegler to be borne in mind when searching for reflex neuroses and added a seventh. 1. The eye and nose must first of all be thoroughly examined and excluded or accepted as the exciting cause. 2. A careful distinction of those reflexes manifested in common by the eye and the nose. 3. Eye strain from whatever cause, whether ametropia, subnormal accommodation, or intranasal pressure, should be corrected to exclude the eye as a factor. 4. Pressure contact in the nose in every instance must be relieved, as the symptoms of such pressure on hyperæsthetic areas were so like those of the eye in their reflex manifestations. 5. Every obstruction to free breathing in the superior part of the nose should be removed. 6. Recurrence of any reflex neurosis demanded reexamination, renewed search for, and correction of the original exciting cause. 7. Lithæmic conditions, faulty intestinal metabolism of whatever type, must be corrected and deserved careful consideration in every reflex neurosis, whatever the exciting cause.

Acute Dilatation of the Stomach.—Dr. EDWIN WALKER, of Evansville, Ind., said that the treatment of acute dilatation of the stomach consisted of prompt evacuation of the organ by the stomach tube, followed by copious lavage. It would be an excellent practice in all postoperative cases, whenever vomiting was prominent, to resort to this measure. In order to release the pressure on the duodenum, the patient should lie on the abdomen, with the foot of the bed elevated, or in extreme cases in the knee-chest position. It was astonishing in grave cases to see the prompt relief given by these measures. The lavage should be repeated when the fluid reaccumulated or if the condition of the patient did not improve. Strychnine and physostigmine had been given. Rectal feeding should be used.

Muscle Rigidity; an Important Physical Sign of Disease within the Chest.—Dr. F. M. POTTENGER, of Monrovia, Cal., said that muscle rigidity was a feeling of resistance noticed on palpating the muscles overlying inflammatory conditions of the pleura and pulmonary parenchyma, due to (1) acute spasm of the muscles when the inflammatory process was acute or (2) pathological change in the muscles when the inflammation was chronic. Muscle rigidity affected both the superficial and deep muscles. It was easily found when the inflammatory process was acute, for then the muscle stood out in acute spasm, or when the process was chronic in character and wide in extent the pathologically changed muscles were easily felt. It was difficult to find if the process was small in extent and not very active. It was important as a distinctive point in diagnosis between an acute and quiescent process in the lung. If the muscles were in spasm, his experience would warrant his saying that the process underlying was surely acute. Muscle rigidity not only was a valuable sign, but it offered a rational explanation for some other signs, such as limited motion, lessened respiratory murmur, harsh respiratory murmur, prolonged expiration, ankylosis of the costosternal joints, curvature of the spine, and increased resistance and slightly altered pitch on percussion.

The Prophylaxis of Pellagra.—Dr. C. H. LAVIN-DEER, of the Public Health and Marine Hospital Service, in a paper on this subject, reviewed very briefly the theories as to ætiology and discussed two points: First, the communicability of the disease, and, second, the practical application of its alleged relation to the use of spoiled corn as a food stuff. He thought that our experience in the United States was too limited for us to base conclusions upon it, and that it would be unwise to reject the accumulated observations and deductions of able men in other countries whose experience had been so much wider and fuller than our own. Practically all observers agreed that the disease was not communicable, and quarantine measures were not in force against it. So far as its relation to spoiled corn was concerned, he admitted that much of the evidence was unsatisfactory, but, since practically all theories of the disease took corn into more or less essential consideration, and since Italy in her determined fight against pellagra had based most of her procedures on this theory and was claiming a fair share of success, we could not at present do otherwise in our prophylactic measures than recognize some relationship between corn and pellagra.

Officers.—The following officers were elected for the ensuing year: President, Dr. Frank P. Norbury, of Kankakee, Ill.; vice-presidents, Dr. George W. Cale, of St. Louis, and Dr. William B. Laws, of Hot Springs, Ark.; secretary, Dr. Henry E. Tuley, of Louisville; treasurer, Dr. Samuel C. Stanton, of Chicago. Detroit was selected as the place for holding the next annual meeting.

Letters to the Editor.

PELLAGRA—AN INQUIRY.

1305 ARCH STREET,
PHILADELPHIA, November 6, 1909.

To the Editor:

Within the space of a short communication it would be impossible to consider in detail the various pathological factors, with a view to determine their relative importance, but pellagra in aggravated form has recently developed in this country to such an alarming extent that the present inquiry seems to be in order. Indeed, the records show mortality rates which stagger the optimist in practical medicine, while those who escape its fatality find themselves seriously handicapped, both mentally and physically.

While diseased or decomposing grain (corn) is now recognized as the pathological factor, in view of the imperfect recoveries which follow attacks, we must look further to discover the indirect, secondary, or consequential effects, and the present inquiry will be limited to this question. Necessarily, of course, it must include a consideration of the therapeutic measures which are best adapted to overcome or counteract the effect of the disease upon the health. In other words, it will endeavor to explain how pellagra disorders nutrition, and, further, the investigation, by logical deduction, will point out the line of treatment which should be adopted in such cases.

In the opinion of the writer, the underlying causative factor is to be found in magnesium infiltration, a pathological condition in which there is depletion of the lime content of the nuclear protoid, being the counterpart of that which occurs in plant life when magnesium salts in excess cause destruction and death of the protoplasm, since magnesium acts as an insulator, impeding the uninterrupted transmission of nerve impulses.

No one will seriously question the statement that the ingestion of decomposing grain will give rise to symptoms of indigestion; and in the light of recent pathological findings it will be readily admitted that distinct organic changes take place consecutively, not alone in the intestinal tract, but in the superficial tissues as well, all going to show the profound impression produced upon the trophic nervous system. It would be interesting also to consider the coincident acidity associated with practically all forms of indigestion, by which a vicious circle is established, tending to make permanent a temporary indisposition. In other words, a clearly manifest indigestion will not be followed by spontaneous recovery—reasonable care being required in respect to diet. Inasmuch as the medical profession as a whole does not concede this hypothesis, this factor will be referred to merely incidentally, since the evidence will be quite sufficient to confirm the working hypothesis.

The first question to be considered has to deal with the chemical constituents of the grain itself. Does the distribution of lime and magnesia in maize differ from that of other grains to such an extent as to warrant criticism on the score of chemical composition?

The following data from Liebig's investigations furnish a substantial basis for the suspicion assumed, these analyses having been made by Way, Ogsten, Weber, and others:—

Percentages of lime and magnesia in the ash of the grain of Gramineæ.

	Magnesia.	Lime.
Barley,	8.29	2.48
Oats,	7.70	3.70
Wheat,	11.75	3.30
Maize,	13.60	0.57
Rye (bran),	15.82	3.47

It will be observed that there is a preponderance of magnesia in all the grains, but a marked discrepancy in the lime content of maize—by molecular weight, the average is 17 molecules of lime to 100 molecules of magnesia. By absolute weight we have the following:—

Preponderance of magnesia over lime.

Barley,	3.2621 times
Oats,	2.08 times
Wheat,	3.056 times
Maize, .....	.24 times
Rye,	4.056 times

In plain figures, maize contains nearly eight times as much magnesia as barley, twelve times as much as oats, eight times as much as wheat, and six times as much as rye—and the dangers of improperly cured rye as a food have long been recognized, a clinical fact which will serve to clear up the "mystery" relating to pellagra from decomposed maize.

In this connection should be mentioned certain pertinent facts concerning the effect upon plant

growth from magnesia in excess, as well as that which attends a deficient supply of lime, all of which has been worked out in detail by Dr. Oscar Loew (*The Physiological Role of Mineral Nutrients*), since identical effects are reproduced in the human organism and may be studied at the bedside.

"Stohmann kept maize shoots alive for some time in a culture solution free from lime, but all development gradually ceased with the consumption of the stored up lime." At the end of several weeks the addition of calcium nitrate produced striking effects—"hardly five hours elapsing before new buds pushed out from the sickly looking tips." The precise counterpart of this is seen in the case of cholera infantum—after the absolute failure of intestinal antiseptics together with the most approved dietary—administration of the appropriate lime salt enabling the patient to recover over night, convalescence being well established within twenty-four hours.

As further evidence that a deficiency of lime kills off the children, rich and poor alike, the observations of Heiden may be quoted: "Maize and peas in culture solution without lime lived but four weeks, while in culture solutions without magnesia, maize lived ten to twelve weeks and peas eight weeks."

An interesting and instructive record is credited to Dr. E. F. Smith, covering his investigations as to the relative proportions of lime and magnesia in the leaves of healthy and diseased peach trees—so called "yellows." It was found that calcium oxide in diseased leaves was diminished twenty-five to fifty per cent., while magnesium oxide was increased in like percentages—in one instance the magnesium oxide was nearly five times that found in healthy trees.

A note should be made here to the effect that neurasthenia supplies the counterpart of this abnormal condition, the calcium salts being diminished, while magnesium oxide unites with the organic colloid of the nerve structure—to impede, hinder, or destroy function. Edison (personal letter) has noted "a curious fact that only magnesium oxide will precipitate organic colloids in alkaline solution," but this is precisely what takes place when magnesium oxide, as "calcined magnesia," is administered as a "sedative," effecting insulation—a travesty on scientific medicine.

In the cultivation of algæ the experiments of Bokorny showed decrease and shrinkage of the chlorophyll such as to warrant the conclusion—"that the result can be attributed only to the absence of lime." This should be taken as a "pointer" for those who regard iron as an essential remedy for anæmia, chlorosis, and inanition, when, as a matter of fact, deficiency of lime is the primary cause, such cases showing immediate and marked benefit following its employment. Indeed, when the time arrives for hæmatics there is usually no demand for them.

An experimental investigation conducted by Boehm relating to the irregular transportation of starch in certain plants when lime salts were absent from culture solutions is especially suggestive in connection with the cause and treatment of obesity. On the addition of lime salts the plants recovered, "while, on the other hand, the addition of magne-

sium salts hastened their death, with the accumulation of starch in the pith and bark of the lower part of the stem, death beginning in the upper part."

A peculiar concatenation of circumstances lies in the fact that, while "lime is indispensable to animals, phanerogams, and higher algæ, it is not so in the case of bacteria, fungi, and lower algæ" (Loew, *loc. cit.*). Again, magnesia is of greater importance for yeast than lime (Adolph Mayer); both yeast and bacteria can do without lime entirely (Loew, *loc. cit.*), and this is also true of mould fungi (Molisch).

This inquiry has already far exceeded the limits originally mapped out for it, many interesting and suggestive details have been omitted, and there is still much new evidence to present, especially with reference to magnesium dissociation, but sufficient has been advanced to make out a case for magnesium infiltration as the causative factor in the production of the "disturbances of nutrition" as exemplified in pellagra. In conclusion, therefore, it should be distinctly understood that magnesium is not utterly condemned. An effort has been made to show its deleterious effects under diseased conditions, its insidious invasion and apparent harmlessness, owing to its traditional reputation for efficiency, but from a medical viewpoint, with the exception of bacterial growth, calcium is its necessary complement.

JOHN AULDE.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.

Studies in Immunity. By Professor JULES BORDET, and his Collaborators. Collected and Translated by FREDERICK P. GAY, A. B., M. D. Including a Chapter Written Expressly for this Publication by Professor BORDET. First Edition. New York: John Wiley & Sons. Pp. 545. (Price, cloth, \$6.)

There is no doubt whatever that medical science has been profoundly influenced by Ehrlich's theories. This is due not only to their comparative simplicity and wide applicability, but also, to a considerable extent, to the fact that Ehrlich's papers have long been accessible in an English translation. In a sense, the volume before us is a protest against too blind an acceptance of Ehrlich's views. Himself a pupil of Bordet, Gay has gathered together all the important papers of that distinguished investigator, and has rendered them into excellent English. The book is thus a companion to Ehrlich's *Collected Studies* brought out by Bolduan some years ago. The volume includes an extremely interesting résumé of the work in immunity, written especially for this edition by Professor Bordet. Measured by the influence which it will undoubtedly exercise on medical thought in this country, this constitutes one of the most important publications of the year. Translator and publishers have done their work well and deserve the thanks of all interested in the advance of medical science. We hope the book will be widely read.

Die Anaemia. Von Geh. Obermedizinalrat Professor Dr. P. EHRLICH, Direktor des k. Institutes für Experimentelle Therapie in Frankfurt a. M., und Dr. A. LAZARUS, Universitätsprofessor in Berlin-Charlottenburg. I. Abtheilung. I. Teil: Normale und Pathologische Histologie des Blutes. Zweite, vermehrte und wesentlich umgearbeitete Auflage besorgt von Prof. Dr. A. LAZARUS, in Berlin-Charlottenburg, und Dr. O. NÄGELI, Privatdozent an der Universität Zürich. Mit 5 Abbildungen im Texte und 5 kolorierten Tafeln. Wien und Leipzig: Alfred Hölder, k. u. k. Hof- und Universitäts-Buchhändler, Buchhändler der kaiserlichen Akademie der Wissenschaften, 1909.

This edition of the well known treatise of Professor Ehrlich, the founder of modern cellular hematology, embraces a much larger field than is indicated in the title. It may, indeed, be fairly considered as an adequate and authoritative presentation of the entire subject of the histology, physiology, and pathology of the blood. In the work of revision the author has been assisted by his pupils, Lazarus and Naegeli, who, in the chapters on clinical methods, the morphology of the blood, and leucocytosis, present the latest views of their distinguished master and the most approved technique for estimating the specific gravity and hæmoglobin, and for staining and making differential counts. The tests of Bremer and Williamson for the blood in diabetes are fully described. Of special interest are the sections on the dual origin of the leucocytes and the significance of the granulations of the white cells as products of metabolism. The illustrative plates are beautifully executed in colors. Parts II and III of this important work, which are yet to appear, will deal with the hæmatopoietic organs in their relations to the pathology of the blood and the different clinical forms of anæmia.

The Medical Record Visiting List, or Physicians' Diary. for 1910. New, Revised Edition. New York: William Wood & Co., 1909.

This edition of the *Medical Record Visiting List* offers to the physician the usual diary arranged for sixty patients a week. As addenda we find a gestation table; approximate equivalents of temperatures, weights, measures, etc.; maximum adult doses, drops in a fluid drachm; treatment of poisoning and emergencies; signs of death; hints on the writing of wills, which will prove of value to many; etc.

Life's Day. Guide Posts and Danger Signals in Health. By WILLIAM SEAMAN BAINBRIDGE, A. M., M. D. New York: Frederick A. Stokes Company, 1909. Pp. xviii+308. (Price, \$1.35.)

As a popular treatise on hygiene this is a book which physicians may safely recommend to laymen. One of the most useful chapters in it, in the opinion of the reviewer, is that on Infancy and Childhood. The subject matter of many of the other chapters is not sufficiently to the point, the matters discussed being skirted too much, as in the talk on Adolescence, Chapter XI, page 168. The work is sketchy in parts, too much being taken for granted, as in the sudden introduction of the expression "great white plague" on page 193. References to the literature or the author's sources of information are not so full as they might be. He seems to take it for granted that the name Chittenden is a household word, known to all, for he uses it in a

reference without any qualification. Barring technical defects of this kind, the book is, as we have intimated, a sound exposition of the laws governing the maintenance of health, and it should have a wide circulation among the laity.

Medical Sociology. A Series of Observations Touching upon the Sociology of Health and the Relations of Medicine to Society. By JAMES PETER WARBASSE, M. D., Surgeon to the German Hospital, Attending Surgeon to the Sancy Hospital, Brooklyn, etc. New York and London: D. Appleton & Co., 1909. Pp. xvii, 355.

It is no small praise of a book for a reader to say after reading it that it contains much that he has always considered to be so, but had not committed to writing. Many a thoughtful physician will make this comment on laying down Dr. Warbasse's little collection of essays, which put in terse and pleasantly written form the conclusions toward which the more advanced thinkers of the profession are tending. Lay readers of the book will get a useful insight into the mentality of a thoughtful and original practitioner and be disabused of many remarkable and harmful misconceptions regarding disease and cognate problems to which persons unaccustomed to scientific processes of ratiocination are peculiarly subject. Dr. Warbasse does not hesitate to maintain that there should be national control of sanitation and argues with great justice that State laws to regulate hygienic matters are insufficient, since bacteria are indifferent to State lines. Especially do the railroads need a strong Federal hand to regulate their methods of carrying food stuffs, their stuffy parlor cars and sleepers, their drinking cups, and other relics of an unsuspecting past. We agree with the author that one of the most important functions of a modern government is to look after the children, who in many parts of our country are terribly abused. The essays being in nontechnical English, we hope their perusal will not be confined to members of the medical profession.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By WILLIAM OSLER, M. D., Fellow of the Royal Society, Regius Professor of Medicine, Oxford University, etc. Seventh Edition, Thoroughly Revised. New York and London: D. Appleton Company, 1909. Pp. xvii-1143.

This well known and deservedly popular textbook has been so often reviewed in these columns as the various editions have appeared that little is now left to be said. The preface summarizes the advances made in the three years since the sixth edition was brought out. In this time the "epoch making discoveries in syphilis," the excellent observations made by the group of men known as the New York Pneumonia Commission, the results of the Malta Fever campaign in the British army and navy, the sanitation of the Panama Canal Zone, the work of the Biological Laboratory at Manila, the additions to our knowledge of trypanosomiasis, piropilosis, and kala-azar, the results of the studies of cerebrospinal fever during the last epidemic and the antiserum for its treatment, the question of "carriers," the work of the Sixth International Congress on Tuberculosis, the studies in epidemic anterior poliomyelitis, in Rocky Mountain fever, in milk sickness, and in anaphylaxis are all summarized in this edition. In some respects we think the references to certain of

these subjects are all too short. The section on parasites has been revised, and new matter has been added pertaining to acute dilatation of the stomach, peptic ulcer, diverticulitis, parotiditis, pancreatic disease, suprarenal insufficiency, oedema of the lungs, Banti's disease, polycythemia, aphasia, posterior basic meningitis, psychasthenia, serum therapy, the surgical treatment of internal diseases, and faith healing.

The deserved popularity of Dr. Osler's textbook we believe to be due to the concise method of statement which characterizes the descriptions of the various diseases and summaries of new work, together with his simple therapy. The latter, in spite of violent and sometimes virulent opposition, is slowly and surely gaining ground.

The arrangement of this edition into diseases due to animal parasites, specific infectious diseases, the intoxications, constitutional diseases, and the diseases of the systems is to be commended. In some future edition we predict that dengue, yellow fever, and smallpox will be transferred to the diseases due to animal parasites, and we think syphilis and relapsing fever should be in that group now.

We think one fault with Osler's book is the fact that he frequently omits to give references to original articles. To do so constantly would, of course, mean additional work, but in our opinion it would be labor that would be appreciated by many practitioners of medicine.

Lehrbuch der Magenkrankheiten. Für Aerzte und Studierende. Von Dr. HANS ELSNER, Spezialarzt für Magen- und Darmkrankheiten in Berlin. Mit 46 Abbildungen. Berlin: S. Karger, 1909. Pp. 490. (Price, Mk. 12.)

In few other departments of medicine have more facts been added to our knowledge than in diseases of the stomach. More extended knowledge of physiology has added greatly to exactness in the diagnosis and treatment of gastric disorders. The functions of the stomach and the chemistry of digestion are much more clearly understood now than they were a decade ago. As the result of these additions to our knowledge, methods of treatment have materially changed and the stomach specialist does his work in a much more exact manner than he ever did before. Certain means of diagnosis have been developed and utilized which can be known only by a close reading of literature or through instruction by a competent specialist. The x ray, in particular, has been employed to determine the position and shape of the stomach and its motor functions.

A most notable feature of Elsner's book is the description of these modern aids to diagnosis. The various procedures now used by stomach specialists are described in elaboration and detail, so that the practitioner by close study may readily comprehend and make use of them. The illustrations are good and materially aid in making clear the methods which the author describes. The book is extremely practical and the aim seems to have been to avoid questions of theory, but rather to make clear modern methods of diagnosis and treatment. Another notable feature is the attention given to the functional diseases of the stomach. Every practitioner will recognize the truth of the statement that functional disorders of the stomach constitute a great proportion of the affections which come before him in

daily practice. They are certainly far in excess of the organic diseases. Upon this class of diseases Elsner is especially satisfactory, and his book is one from which the general practitioner may derive great aid and comfort in his daily work.

Schemata zum Einzeichnen von Kurven bei Stoffwechselkrankheiten. Von Dr. HERMANN SCHALL und Dr. AUGUST HEISLER, Assistenten der medizinischen Universitätsklinik, Marburg a. Lahn. Würzburg: Curt Kabitzsch, 1909.

The authors have made a curve schedule for patients suffering from disturbed metabolism which seems practical for such diseases as diabetes, nephritis, etc., and is especially adapted for hospital observations and for specialists.

Die Gewächse der Nebennieren. Von Prof. Dr. med. CARL WINKLER, Privat-Dozent, I. Assistent am pathologischen Institut. Mit 26 Abbildungen auf 4 Tafeln. Jena: Gustav Fischer, 1909. Pp. 192.

Winkler has made a valuable contribution to the pathology of the adrenals. He reports about twenty-seven cases of suprarenal neoplasm which he has examined clinically as well as anatomicohistologically, and describes the primary qualification of the cells of the adrenal, so called autochthonous suprarenal neoplasm, and the erratic suprarenal neoplasm which is found in the kidneys and other organs. Our author uses his material and the deductions from it as a proof of Grawitz's theory of the abgesprengten Nebennierenkeimen, and Grawitz was the first to call attention to the importance of the adrenal in the genesis of tumor of the kidneys.

Jahresbericht über die königliche psychiatrische Klinik in München für 1906 und 1907. Mit 4 Figuren im Text. München: J. F. Lehmann, 1909. Pp. 183.

This is the first yearly report we have seen published by the Royal Psychiatric Clinic at Munich relating to the events of the years 1906 and 1907, although we suppose there is in existence a previous report for 1905, to which repeated references are made.

It is interesting to note that there were received at the psychiatric clinic in 1906 1,832 patients, 1,168 males and 664 females; in 1907, 1,914 patients, 1,278 males, 636 females. In the out patient department there were treated in 1906, 449 patients, in 1907, 490 patients. In 1905 there were 39,511 sick days; in 1906, 39,890; and in 1907, 40,715. The *Jahresbericht* contains besides the statistical report nineteen essays on diseases treated in the hospital and reports from the serodiagnostic laboratory, the chemical laboratory, and the psychiatric out patient department.

MEDICOLITERARY NOTES.

Philip Gilbert Hamerton, writing in *The Intellectual Life* concerning the choice of a profession by a young man, has the following to say of medicine: "The profession of medicine is, of all fairly lucrative professions, the one best suited to the development of the intellectual life. Having to deal continually with science, being constantly engaged in following and observing the operation of natural laws, it produces a sense of the working of these laws which prepares the mind for bold and original speculation, and a reliance upon their unflinching

regularity, which gives it great firmness and assurance. A medical education is the best possible preparation for philosophical pursuits, because it gives them a solid basis in the ascertainable. The estimation in which these studies are held is an accurate meter of the intellectual advancement of a community. When the priest is revered as a being above ordinary humanity, and the physician slightly esteemed, the condition of society is sure to be that of comparative ignorance and barbarism; and it is one of several signs which indicate barbarian feeling in our own aristocracy, that it has a contempt for the study of medicine. The progress of society toward enlightenment is marked by the steady social rise of the surgeon and the physician, a rise which still continues, even in Western Europe. It is probable that before very long the medical profession will exercise a powerful influence upon general education and take an active share in it. There are very strong reasons for the opinion that schoolmasters educated in medicine would be peculiarly well qualified to train both body and mind for a vigorous and active manhood. An immense advantage, even from the intellectual point of view, in the pursuit of medicine and surgery, is that they supply a discipline in mental heroism. Other professions do this also, but not to the same degree. The combination of an accurate training in positive science with the habitual contempt of danger and contemplation of suffering and death, is the finest possible preparation for noble studies and arduous discoveries. I ought to add, however, that medical men in the provinces, when they have not any special enthusiasm for their work, seem peculiarly liable to the deadening influences of routine, and easily fall behind their age. The medical periodicals provide the best remedy for this."

The *December Delineator* is a tremendous affair of 108 pages, eleven by sixteen inches, with stories by such modern masters as Rudyard Kipling, J. J. Bell, Richard Le Gallienne, E. Nesbit, and Eugene Wood, and a poem by Bliss Carman. Messrs. Rockefeller, Carnegie, Armour, Nathan Straus, and others tell how to give away money. An article on how they acquired it would be more eagerly read. What's the Matter with the Churches is discussed, mainly by former church goers. We know of a church where a superb string quartet discourses once a fortnight, but there are no crowds. The idea is wrong; a brass band is what is wanted. We do not see how any owners of childless homes can read unmoved of the *Delineator's* Child Rescue Campaign. Every home should have children, its own if possible, any children if not. The existence of orphan asylums is a blot on altruism; they are a simulacrum, a mockery of true charity. Men are shamefully neglected in *The Styles of the Month*. There is an article on the conventional boned turkey, the tasteless bird of New York hotels. Where is the glorious dish of our youth, where a chicken was slipped inside of a turkey, a partridge into the chicken, a quail into the partridge, and sausage meat and herbs filled the interstices?

Good Housekeeping for November has an article on *The Nervous Breakdown* by Dr. J. J. Putnam; a very important series of papers on good eating, an art shamefully neglected in the United States

and which has much to do with the subject of Dr. Putnam's essay, although he does not mention it. Minor Table Manners, by Marion Harland, is a third important subject, neglect of which causes much misunderstanding of otherwise virtuous characters. Many men who half swallow their knives would go to the stake for a principle; we fear many of their commensals would be glad to see them go.

It is hard to have no other claim to fame than to be handed down to posterity as the butt of a satirist. Such was the fate of an otherwise unknown Roman physician, one Hermocrates, whom Martial transfixed in his epigram 53, Book VI.

Lotus nobiscum est, hilaris cœnavit; et idem
Inventus mane est mortuus Anaxagoras.
Tum subitæ mortis causam, Faustine, requiris?
In somnis medicum viderat Hermocrates.

(Bathed and jolly, Anaxagoras supped with us; yet, next morning he was found dead. Do you ask me, Faustina, the cause of so sudden a demise? He had seen Dr. Hermocrates in a dream.)

It is difficult to obtain any information of Herodictus, who flourished about 464 B. C. He was no less a personage, however, than the tutor of Hippocrates, and must have been well known in his time as a physician and exemplar of the athletic and open air life. Evidently he was a popular teacher, since Hippocrates went to him. He is said to have been an earnest dietetician as well as a gymnast. One of his brothers, Gorgias, was distinguished as a rhetorician.

NEW PUBLICATIONS.

Johnson, Alexander Bryan.—Surgical Diagnosis. Volume III. The Spine, the Nerves, the Pelvis, the Extremities, Appendix. With One Colored Plate and Two Hundred and Seventy-four Illustrations in the Text. New York and London: D. Appleton & Co., 1909. Pp. xvii-810

Atkinson, Thomas G.—Functional Diagnosis. The Application of Physiology to Diagnosis. Chicago: Chicago Medical Book Company, 1909. Pp. 213.

Hutchinson, Woods.—Preventable Diseases. Boston and New York: Houghton Mifflin Company, 1909. Pp. vi-442.

Dawson, E. Rumley.—The Causation of Sex. A New Theory of Sex Based on Clinical Materials. Together with Chapters on the Forecasting of the Sex of the Unborn Child and on the Determination or Production of Sex at Will. With Twenty-one Illustrations. London: H. K. Gower, 1909. Pp. xii-196.

McIsaac, Isabel.—Bacteriology for Nurses. New York: The Macmillan Company, 1909. Pp. xii-179.

Deadrick, William H.—A Practical Study of Malaria. Fully Illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 402. (Price, \$4.50.)

Mackintosh, Donald J.—Construction, Equipment, and Management of a General Hospital. With Plans and Illustrations. Edinburgh and Glasgow: William Hodge & Co., 1909. Pp. xii-152.

Krause, Fedor.—Surgery of the Brain and Spinal Cord. Based on Personal Experiences. Translated by Professor Herman A. Haubold, M. D. Volume I. With 63 Figures in the Text, 24 Colored Plates, and 1 Half Tone Plate. New York: Rebmman Company, 1909. Pp. xiii-282.

Ballenger, William Lincoln.—Diseases of the Nose, Throat, and Ear. Medical and Surgical. Second Edition. Revised and Enlarged. Illustrated with 491 Engravings and 17 Plates. Philadelphia and New York: Lea & Febiger, 1909. Pp. ix-932.

Proceedings of the Third Annual Conference of the American Association of Medical Milk Commissions. Held at the St. Charles Hotel, Atlantic City, N. J., Monday, June 7, 1909. Pp. 142.

Gould, George M.—Biographical Clinics. Volume VI. Essays Concerning the Influence of Visual Function, Pathological and Physiological, upon the Health of Patients.

Philadelphia: P. Blakiston's Son & Co., 1909. Pp. viii-492. (Price, \$1.)

Mather, Sedgwick.—Anatomy and Physiology of the Nervous System. Philadelphia: John Joseph McVey, 1909. Pp. 154. (Price, \$1.50.)

Hare, Hobart Amory, and Beardsley, E. J. G.—The Medical Complications, Accidents and Sequels of Typhoid Fever and the Other Exanthemata. With a Special Chapter on the Mental Disturbances Following Typhoid Fever, by F. X. Dercum, M. D. With Twenty-six Illustrations and Two Plates. Philadelphia and New York: Lea & Febiger, 1909. Pp. viii-406.

Childs, Charles Gardner.—Diseases of Women. A Manual for Students and Practitioners. The Medical Epitome Series Edited by Victor Cox Pedersen, A. M., M. D. Illustrated with 101 Engravings. Philadelphia and New York: Lea & Febiger, 1909. Pp. viii-219.

Krause, Paul.—Lehrbuch der klinischen Diagnostik innerer Krankheiten. Mit besonderer Berücksichtigung der Untersuchungsmethoden. Bearbeitet von Prof. Dr. J. Esser. Mit 4 Tafeln und 356 grossenteils farbigen Figuren im Text. Jena: Gustav Fischer, 1909. Pp. xvi-922.

Kellas, A. M.—Introduction to Practical Chemistry. For Medical, Dental, and General Students. Specially Adapted to Meet the Requirements of the Conjoint Boards' Examinations of the Royal College of Physicians and Surgeons, but Suitable for General Use in Schools and for Private Students. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. viii-262.

Festschrift zur vierzigjährigen Stiftungsfeier des deutschen Hospitals. Herausgegeben von dem Medical Board im Auftrage der Aerzte des deutschen Hospitals und Dispensary in der Stadt New York. Pp. 597. New York: Lemcke & Buechner, 1909.

Ritchie, John W.—Primer of Sanitation. Being a Simple Work on Disease Germs and How to Fight Them. Illustrated by Karl Hassmann. Yonkers: World Book Company, 1909. Pp. vi-200.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of, and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending November 26, 1909:

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Alabama—Montgomery.....	Nov. 6-13.....	15	
California—San Francisco.....	Oct. 30-Nov. 6.....	1	
Illinois—Chicago.....	Nov. 6-13.....	1	
Indiana—Muncie.....	Nov. 6-13.....	2	
Kansas—Kansas City.....	Nov. 6-13.....	1	
Louisiana—New Orleans.....	Nov. 6-13.....	2	
Louisiana—Buffalo.....	Nov. 6-13.....	1	
West Virginia—Wheeling.....	Oct. 30-Nov. 6.....	1	
<i>Smallpox—Foreign.</i>			
China—Shanghai.....	Oct. 24-Oct. 31.....	2	1
Ecuador—Guayaquil.....	Oct. 1-7.....	1	1
India—Bombay.....	Oct. 1-12.....	1	1
Italy—Naples.....	Oct. 23-Nov. 3.....	3	1
Mexico—Mexico.....	Oct. 24-31.....	1	1
Mexico—Veracruz.....	Oct. 24-31.....	2	2
Russia—Moscow.....	Oct. 1-12.....	4	4
Russia—Warsaw.....	Sept. 20-28.....	6	6
Spain—Barcelona.....	Oct. 1-12.....	1	1
Turkey—Constantinople.....	Oct. 1-12.....	1	1
<i>Yellow Fever—Foreign.</i>			
Ecuador—Guayaquil.....	Oct. 1-7.....	13	4
Mexico—Merida.....	Oct. 1-7.....	1	1
<i>Cholera—Foreign.</i>			
Germany—Allenstein district.....	Oct. 23-30.....	1	
Germany—Andreischken.....	Oct. 23-30.....	6	
Germany—Heydekrug district.....	Oct. 23-30.....	6	
Germany—Libau.....	Oct. 23-30.....	3	
Germany—Skwaczell.....	Oct. 23-30.....	1	
Germany—Skutumpah.....	Oct. 23-30.....	3	
India—Calcutta.....	Oct. 2-9.....	11	
Siberia—Vladivostok.....	Oct. 1-10.....	20	1
<i>Plague—Foreign.</i>			
Ecuador—Guayaquil.....	Oct. 1-7.....	56	16
India—General.....	Oct. 2-9.....	5,209	4,123
India—Calcutta.....	Oct. 2-9.....	5	5
Venezuela—Caracas.....	Nov. 11.....	2	2
Zanzibar.....	Nov. 8.....	1	1

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending November 24, 1909:

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Mexico City, Mex., upon special temporary duty.

BELL, J. M., Pharmacist. Relieved from duty at Fort Stanton, N. M., and directed to proceed to Chicago, Ill., and report to the medical officer in command for duty and assignment to quarters.

CASTRO-GUTIERREZ, J. L., Acting Assistant Surgeon. Granted seven days' leave of absence from November 18, 1909.

DUKE, B. F., Acting Assistant Surgeon. Granted twenty-five days' leave of absence from November 18, 1909.

HALLETT, E. B., Acting Assistant Surgeon. Granted three days' leave of absence from November 24, 1909.

IRWIN, FAIRFAX, Surgeon. Relieved from duty on United State Revenue Cutter *Thetis*, effective November 22, 1909, and granted one month's leave of absence.

LA GRANGE, J. V., Pharmacist. Granted our days' leave of absence from November 18, 1909, under paragraph 210, Service Regulations.

LLOYD, BOLIVAR J., Passed Assistant Surgeon. Upon the arrival of Passed Assistant Surgeon Herman B. Parker, directed to proceed to New York, N. Y., and report by wire to the Bureau for further orders.

LLOYD, BOLIVAR J., Passed Assistant Surgeon. Granted one month's leave of absence *en route* to the United States.

LYON, R. H., Assistant Surgeon. Granted seven days' leave of absence from November 14, 1909, under paragraph 191, Service Regulations.

NAULTY, C. W., JR., Acting Assistant Surgeon. Granted five days' leave of absence from November 24, 1909.

PARKER, HERMAN B., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Guayaquil, Ecuador, for duty in the office of the United States Consul.

RYDER, L. W., Pharmacist. Granted five days' leave of absence from November 22, 1909, under paragraph 210, Service Regulations.

SCHUSTER, B. L., Acting Assistant Surgeon. Granted three days' leave of absence from November 25, 1909.

SINCLAIR, A. N., Acting Assistant Surgeon. Granted fifteen days' leave of absence from December 16, 1909.

SOUTHARD, F. A., Pharmacist. Relieved from duty at Chicago, Ill., and directed to proceed to Fort Stanton, N. M., and report to the medical officer in command for duty and assignment to quarters.

SPRATT, R. D., Passed Assistant Surgeon. Leave of absence, for twenty days from November 17, 1909, amended to read twenty days from December 10, 1909.

WARD, J. LABRUCÉ, Acting Assistant Surgeon. Granted ten days' leave of absence from November 17, 1909.

WHITE, M. J., Passed Assistant Surgeon. Directed to proceed to Flint, Mich., upon special temporary duty.

WILSON, J. C., Acting Assistant Surgeon. Granted twenty-five days' leave of absence from December 2, 1909.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., November 29, 1909, for the purpose of conducting a physical examination of four cadets and three cadet-engineers of the United States Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwynn, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 27, 1909:

BROWNE, RHODIE W., First Lieutenant, Medical Reserve Corps. Ordered from Fort Monroe, Va., to Fort Niagara, N. Y., for temporary duty.

DAVIS, OSCAR F., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division; will sail for San Francisco, Cal., on February 15th.

DUNCAN, WILLIAM A., Captain, Medical Corps. Granted sick leave of absence for three months.

ELIOT, HENRY W., First Lieutenant, Medical Reserve Corps. Granted an extension of one month to leave of absence.

GLENNAN, JAMES D., Major, Medical Corps. Ordered to report to Washington, D. C., December 17th, for examination for promotion.

HENNING, OSWALD F., First Lieutenant, Medical Reserve Corps. Ordered to active duty; will proceed to San Francisco, Cal., and sail January 5th for Philippine service.

JORDAN, EDWARD H., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division; will sail for San Francisco, Cal., on February 15th.

MCANDREW, PATRICK H., Captain, Medical Corps. Ordered to report at Washington, D. C., for examination for promotion.

MANLY, CLARENCE J., Major, Medical Corps. Granted leave of absence for seven days.

RAFFERTY, OGDEN, Major, Medical Corps. Ordered to report to Washington, D. C., on December 17th, for examination for promotion.

ROBERTS, WILLIAM M., Major, Medical Corps. Promoted from captain November 17th, vice Ewing, retired.

STARK, ALEXANDER N., Major, Medical Corps. Granted an extension of fifteen days to leave of absence.

WELLS, FRANCIS M., First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Robinson, Neb., and ordered to Fort Apache, Ariz., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 27, 1909:

BROWNELL, C. DEW., Surgeon. Detached from the *Mississippi* and granted sick leave for six weeks.

CLIFFORD, A. S., Surgeon. Detached from the Naval Hospital, Las Animas, Col., and ordered to the *Albany*.

Births, Marriages, and Deaths.**Married.**

BROWN—LIGHTBOURNE.—In Key West, Florida, on Saturday, November 13th, Captain Henry L. Brown, Medical Corps, United States Army, and Miss Florelle Lightbourne. MARSHALL—WELFORD.—In Richmond, Virginia, on Tuesday, November 23d, Dr. Thomas Robins Marshall and Miss Sue Sedden Taliaferro Welford.

Died.

ALDRICH.—In Ludlow, Massachusetts, on Monday, November 22d, Dr. George A. Aldrich, aged twenty-seven years.

ATKINSON.—In Philadelphia, on Tuesday, November 23d, Dr. William B. Atkinson, aged seventy-five years.

FRISHMUTH.—In Philadelphia, on Saturday, November 20th, Dr. John Pierre Frishmuth, aged forty-one years.

FRY.—In Roanoke, Virginia, on Monday, November 22d, Dr. R. W. Fry, aged fifty-nine years.

KOHN.—In New York, on Friday, November 26th, Dr. Samuel Kohn, aged fifty-five years.

LAIRD.—In Englewood, Illinois, on Monday, November 15th, Dr. W. J. Laird.

LYNCH.—In Short Creek, Kentucky, on Monday 22d, Dr. A. T. K. Lynch, aged forty years.

MOORE.—In Iroquois, Michigan, on Sunday, November 14th, Dr. John R. Moore.

MORRIS.—In Turner, Kansas, on Tuesday, November 16th, Dr. William H. Morris, aged sixty-seven years.

NYCE.—In Troy, N. Y., on Friday, November 19th, Dr. George W. Nyce, aged seventy-four years.

PETITJEAN.—In Brooklyn, N. Y., on Friday, November 26th, Dr. Gaston François Petitjean, aged one hundred and four years.

QUICK.—In Philadelphia, on Sunday, November 21st, Dr. Jacob Quick, aged eighty-four years.

SNIVELY.—In Philadelphia, on Tuesday, November 23d, Dr. I. Newton Snively, aged forty-seven years.

SUTHERLAND.—In Janesville, Wisconsin, on Tuesday, November 16th, Dr. Quincy O. Sutherland, aged sixty-one years.

WILLIAMS.—In Hampton, Virginia, on Thursday, November 18th, Dr. Nathaniel Williams, aged sixty-five years.

YOUNG.—In Minneapolis, Minnesota, on Monday, November 15th, Dr. Esther H. Young, aged sixty-three years.

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Original Communications.

AN APPEAL.

The Antituberculosis War and the Red Cross Christmas Stamp.

By S. ADOLPHUS KNOPP, M. D.,
New York,

Professor of Phthisiotherapy at the New York Postgraduate Medical School and Hospital.



Last fall it was my privilege to address the two Red Cross branches—one in Brooklyn and one in New York—pleading with them to help in the antituberculosis war through the aid of a Red Cross Christmas stamp. I published the two addresses in the

form of an article in the *New York Medical Journal* of November 28, 1908. I know that hundreds of others, may even thousands, have also pleaded, and perhaps more eloquently and more successfully than I, but this shall not prevent me from pleading again for this holy cause, particularly since I have been honored by the officers of the American National Red Cross Society with an invitation to do so.

The history of the Red Cross Society is known to most people. It owes its origin to the feeling of sympathy awakened throughout Europe by the suffering occasioned by the Crimean war. The object of the Red Cross Society is in the main to mitigate the evils inseparable from war. All the civilized nations of the world have branches of this truly international association. Founded in Geneva in 1863, it is now not quite fifty years old, but what a glorious work it has done! Throughout the many bloody wars of the last half century, the Red Cross servants were truly the administering angels who lessened suffering and saved countless lives. And not only in wars, but also in other disasters such as floods, earthquakes, mining and railroad accidents, fires and pestilences, a great army of Red Cross soldiers are forever present to ameliorate conditions, dress the wounded, nurse the sick, feed the hungry, and improve sanitation so as to limit the fatalities as much as may be possible. The heroism of the Red Cross workers, both men and women, has never been surpassed by the gallantry of the bravest soldiers.

Now, this great association has undertaken to fight the most formidable enemy of mankind; one

which unfortunately can not be met openly in battle; one which, by its insidiousness and because it is unseen and unrecognized by the naked eye, is all the more dangerous and difficult to combat. There are probably at this moment 500,000 people in the United States suffering from tuberculosis in one form or another, and 1,000,000 of school children who are probably destined to die of tuberculosis before they reach the age of eighteen, and yet modern medical science has demonstrated beyond a shadow of a doubt that tuberculosis is a preventable and curable disease. Its prevention depends upon bettering the hygiene of the masses and improving their living conditions, on the early recognition of the disease, and on the suppression of all centres of infection arising from advanced cases. This is to be accomplished not with cruel isolation and treating the unfortunate consumptive as an outcast, but by removing the consumptive poor to special hospitals where they will be kindly treated and the utmost care exercised to improve their condition and at the same time minimize the danger of infecting others. The home of the conscientious well to do consumptive, in the advanced stages, can often be arranged so that there is really no danger of contagion.

The cure of the tuberculous depends upon the early recognition of the disease and the timely treatment in well arranged sanitary homes or in special institutions, sanatoria, hospitals, or camps, and there is urgent need for such institutions in nearly every State of the Union. Of course, for the tuberculous children we must have many open air schools and children's sanatoria; and for the tuberculous adult, cured or sufficiently improved to do some work, we must have agricultural or horticultural colonies or other means to give him outdoor occupation.

Unfortunately, tuberculosis is a disease which is most prevalent among the poor, and after what has been said I need not explain any further that in order to prevent and cure tuberculosis in our own beloved country, we need a great deal of money. All the skill of the physicians and devotion of the nurses are of no avail when the tuberculous patient lacks the means to buy good food, cannot afford to live in a sanitary home, have proper clothing, or rest when rest is his only salvation. The patient's anxiety for those depending upon him must also be removed. The wife or children, the aged father or mother deprived of their supporter, must be cared for. Tranquility of mind is as essential to the cure of tuberculosis as all other factors. To do all this, I say again we need money, much money.

Fortunately, this country is rich and it does not

lack in philanthropy and brotherly love, and I know that this appeal which is now going out from the Red Cross will not be in vain. It will give opportunity to the humblest of the humble, to the richest among the rich, to help in this great, good, and holy cause of saving lives, making tuberculous children strong and healthy citizens, the curable consumptives breadwinners for their families, and rendering the hopelessly ill consumptive comfortable and happy as far as it is in human power to do.

The whole nation will reap the benefit of a successful war against tuberculosis and this benefit will not only be sanitary and moral but even financial, for every restored breadwinner and healthy citizen is an addition to the wealth of the nation.

But let us put aside for a moment the financial aspect. Christmastide is not a season when we calculate on returns for what we give. We find pleasure and delight in giving, in making others happy, and surely here is a splendid opportunity to do this. Let each one buy as many stamps as he can; tell the little children that every penny they can spare for stamps will help to save a little child's life, and although they may not see the little sufferer and receive direct thanks, they as well as the adults can rest assured that their gifts will be appreciated and the unknown donor remembered in the grateful prayers of some tuberculous invalid.

The 1909 Red Cross Christmas stamp is not good for postage. It will not carry any kind of mail but any kind of mail will carry it. The use of the beautiful Red Cross stamp carrying Christmas and New Year's greetings gives an excellent opportunity to everyone to help the antituberculous cause according to his means. The layman will thus be the co-worker of the physician, a true brother and helper. He who makes his Christmas offering by the purchase of as many of these stamps as he can afford to buy will surely feel the season's joy all the more, knowing that through his participation in this work somewhere some consumptive sufferer has been helped, some dark home made brighter, some little child saved.

16 WEST NINETY-FIFTH STREET.

INFANTILE SCURVY INVOLVING THE HIP JOINT.*

By NATHAN JACOBSON, M. D.,
Syracuse, N. Y.,

Professor of Surgery, College of Medicine, Syracuse University;
Surgeon to St. Joseph's Hospital.

I desire to call your attention to a condition occurring in infancy which I believe is more frequently overlooked than is any other pathological change encountered in early childhood. I refer to infantile scurvy. Without doubt it is of more frequent occurrence since the introduction of patent foods as the main article of the infant's dietary.

The frequency with which it is unrecognized is referred to by Morse in a paper published two years ago. In thirty cases seen by him in consultation the condition had been recognized but five times. In the others it had been mistaken for rheumatism, difficult dentition, Pott's disease, hip joint disease,

periostitis, gout, nervousness, infantile paralysis, syphilis of the cord, strain or injury, tuberculous gumma of the eye, acute nephritis, tumor of the bladder, uric acid, and arsenical poisoning.

Von Stark, in his able article on this subject in the very elaborate treatise on the *Diseases of Children* by Pfaundler and Schlossmann, refers to the condition as having been mistaken for periostitis, osteomyelitis, and osteosarcoma, and because of the mistake in diagnosis operations had been undertaken for the removal of these serious conditions which were presumed to but did not exist.

It is surprising that this condition has only recently received proper consideration. In an article by Still which appeared in the *British Medical Journal* of July, 1906, he quotes from the English translation of Glisson's work on *Rickets and Infantile Scurvy* published in 1651, the original work having appeared in Latin one year earlier. Not only was this the first published work upon rickets, but in it the occasional association of these two conditions is clearly set forth, and the description of infantile scurvy is so well portrayed that one can but marvel at the accuracy of the observations made by the writer over two hundred and fifty years ago. For more than two centuries this work was entirely lost to sight, nor was there anything written upon the subject again until Moeller published an article upon *Acute Rickets* in 1859. This did not attract much attention, neither did a minute description in the *Lancet* in 1878 by Cheadle. The epoch making paper, however, appeared in 1883, written by Barlow, and was entitled: *On Cases described as Acute Rickets which are probably a Combination of Scurvy and Rickets, Scurvy being the Essential and the Rickets a Variable Element*. This paper was such a very exhaustive clinical and pathological study of the disease that since that date infantile scurvy has been designated "Barlow's disease." The first reference made to it in any textbook in the English language was in that published by Osler in 1892. That this condition was so generally overlooked for two centuries and since its recent resuscitation in medical literature has been so frequently mistaken for other conditions is my excuse for presenting this subject to you for your consideration.

As a text for what I have to say I beg to refer to two cases seen in January of the present year:

CASE I.—The first case was a child, a little less than a year old, whom I saw in consultation with Dr. Coe. Two years before, I had operated upon the sister of this child for the removal of tuberculous glands of the neck; otherwise the family history was negative. The little fellow had always been weak and not until he was seven months old was he able to sit up alone. Prior to that time his back had been too weak to support him, although he was fat and when lying down gave one the impression of being well. On Thanksgiving Day, 1908, he fell from a chair, striking upon his left hip. From that date he suffered from severe pain in the left hip and thigh, although there had been no evident bruise. The extremity could not be moved nor even touched without causing great pain. I learned in the course of my study of the case that for several months prior to the receipt of this injury the child's gums had repeatedly bled. He had also had frequent discharges of blood with the movements of his bowels. Upon examination I found the child apparently well developed but pale and fretful. He would begin to cry as soon as he was lifted out of bed. Upon comparing the extremities there was no apparent wasting nor deformity. The left leg and thigh were held in a flexed position. The right leg could

*Read at the meeting of the Central New York Medical Association at the annual meeting, held at Auburn, N. Y., October 19, 1909.

be freely moved without causing any pain and no other part of the body was evidently affected. However, the slightest manipulation of the left lower extremity caused him to cry out. There were no changes in the gluteal cheek nor in the creases between the nates or below the buttock. There was, however, marked fixation of the hip associated with exquisite tenderness. The gums were found spongy and bled easily. The child had been brought up on a patent food.

Recognizing the condition to be one of scurvy, the dietary was changed along the lines to be suggested when we consider the subject of treatment. Because of the very acute and evidently marked disturbance in and about the joint it was deemed wise to secure absolute rest for it, and therefore weight extension was applied for a time. Immediately upon correcting the diet and giving rest to the joint improvement followed and within a very short time the child was free from pain, slept naturally, and began to improve in color and vigor. Considerable care had to be exercised in the regulation of his diet, as his digestive apparatus was very easily disarranged.

I looked up the little patient about two weeks ago and found that he had become quite a sturdy little fellow. He had cut all but his last molar teeth. The gums were in excellent condition; his complexion was ruddy. Three months before, he had commenced to walk and now was running about. In every way he presented the appearance of a vigorous child.

CASE II.—Ten days after my consultation in the case of the first child I was asked to see another by Dr. Curtin. The first evidence in this case of disturbance had been observed during the early days of November, 1908. In attempting to put on the child's shoes he would cry, and from this time on there was evidently marked pain in his lower extremities. This was more pronounced in the right than the left. While affecting both hip joints there was also some disturbance in each knee. It was impossible to raise the child out of bed, because with each effort to lift him he cried pitifully. He had grown very pale and the parents had become alarmed, because a cousin of the child was afflicted with hip joint disease. Going into the history more fully I learned that the child had had nose bleed frequently for at least six months, and that for the two months prior to my seeing him there had been daily hemorrhages from the gums. Examination did not disclose any swelling or marked change about the knee joints, except that they were very sensitive. Each hip joint, and particularly the right one, was quite rigid and tender. There was no wasting of the thighs or buttocks and no indication of muscular atrophy so characteristic of hip joint disease. He cried most lustily when an effort was made to move his thighs. The gums were swollen and spongy, especially in the neighborhood of the upper central incisors. This child was being fed upon peptogenic milk powder. After the change in his dietary and without any medication or attention to the local condition the little patient improved at once, and within a week was entirely free from pain and discomfort.

Our first case presents some interesting features. While the child gave evidence of faulty nutrition during the first seven months of his life, the acute disturbance was precipitated by a fall which he sustained when he was about eleven months old. The resulting manifestations were so marked that they could readily have been mistaken for a pure traumatism. However, this is in keeping with the history of infantile scurvy inasmuch as one of its characteristics is that slight injuries provoke serious disturbance. The history of tuberculous glandular disease in a sister made one apprehensive that his hip trouble might be of this type. The limitation of the disturbance to a single hip is exceedingly rare in scurvy and strikingly simulated true hip joint disease. Had the latter condition existed, however, we should have had apparent lengthening of the extremity with abduction of limb and eversion of the foot, instead of mere flexion. We should have found marked wasting of the muscles of the thigh

and those of the gluteal region. The gluteal fold should have been effaced and the internatal crease displaced. While fixation of the joint would have been present the pain and tenderness would not have been by any means as great. Moreover in hip disease the pain is not constant and is not evinced on slight motion, but begins to be pronounced when on flexing the thigh the limit of mobility is reached. It is certainly unusual for infantile scurvy to select a single joint as its storm centre and still more so to have this the hip joint. Ordinarily the affected site is the lower end of the femur and not the upper. However, there are cases on record where hemorrhage into the hip joint has occurred. Still, in the article previously referred to, makes the following statement: "In a drawing preserved at the Children's Hospital, Great Ormond Street, a hemorrhage is shown under the synovial membrane of the acetabulum in a case of infantile scurvy." Ordinarily the hemorrhagic disturbance is outside of the hip joint, and when affecting the upper end of the femur extends down the shaft for a distance from the upper epiphysis. Frequently, as a result of traumatism in infants affected with scurvy, fractures or separation of an epiphysis may result. Had such been the case with this patient this would have been apparent in the position of the extremity as well as in the character of its mobility. It had been suggested in this case that the child might be suffering from a rheumatic condition. It is generally conceded, however, that articular rheumatism does not occur in children of this age.

Our second case presents a greater number of the earmarks of infantile scurvy as it is usually encountered. The involvement of the extremities was more widespread, and although the right hip was particularly involved the left was also to some degree as was each femur at its lower end.

In considering this subject the features most to be emphasized are those which concern the diagnosis for when the condition is correctly interpreted the treatment is exceedingly simple and the cure usually prompt and satisfactory.

The epiphyseal areas in children are particularly vulnerable. Following slight traumatism serious infections are apt to occur such as acute osteomyelitis or epiphyseitis. A study of the clinical history of infantile scurvy teaches that it does not occur suddenly nor that its course is rapid. Even when in scurvy a traumatism may have provoked a marked aggravation of the manifestations or awakened disturbance at a fixed point it will be found that the child has for a long period shown evidence of faulty nutrition; that hemorrhage in some form has occurred either from the gums or bowels or still more frequently hamaturia has been evident. In some cases this latter form of bleeding persists for a long time before the characteristic signs of scurvy appear in the extremities. Moreover with infantile scurvy the symptoms of an infectious condition are absent. The temperature is normal or slightly elevated; when swelling appears it is of limited extent and never so acute or widespread nor does the clinical history cover but a few days as is the case in an infectious process involving a bone or an epiphysis. The changes in the blood are slight in infantile scurvy. There is usually a reduction in

the percentage of hæmoglobin and when leucocytosis is present there is an increase in the mononuclear cells. In an infectious disturbance the leucocytosis is pronounced, and instead of an increase in the mononuclear cells there is marked increase in the percentage of the polymorphonuclear ones.

There hardly seems to be any excuse for mistaking infantile scurvy for sarcoma, and yet the mistake has been made and children have been subjected to operation for the removal of a supposed tumor when the condition has been simply that of scurvy. It should not be necessary to dwell upon the differential diagnosis between a tumor of this type and the condition under consideration. In the case of sarcoma a tumor appears in the shaft or extremity of the bone which is of comparatively slow growth and is of definite form. The surface veins are prominent and the swelling is elastic, or it may present crackling walls. It is not tender nor is there a marked degree of pain on motion; but it has periods of pain which come on during the night or at least are quite independent of any mobility of the part.

It is to be remembered that in protracted cases of infantile scurvy marked disorganization of an epiphysis may occur and that fracture or separation at this point may result from violent manipulation or undue force.

Infantile scurvy is rarely encountered before the sixth month of life and occurs most frequently from this to the twelfth month. Three quarters of the cases occur during this period. If there is any doubt as to the nature of the trouble the patient can be subjected to a dietetic test. Still makes the statement that he would lay it down as a rule that if the antiscorbutic diet has produced no definite improvement within four days the diagnosis of scurvy should be questioned.

A few moments need only be given to the all important subject of dietetic treatment. In these days when the artificial feeding of infants is so general, it is perhaps surprising that we do not more frequently encounter this condition as a result of faulty nutrition. That there seems to be in some children a predisposition to scurvy is evident, inasmuch as it has occurred that in the case of twins fed alike scurvy has developed in one and not in the other.

The disturbance is not only attributed to the use of patent foods, but investigation has shown that heat may so alter the chemical constituents of milk as to favor the production of scurvy. Practically no cases are on record of scurvy occurring in breast fed children. Moreover, it seems that but few cases have followed the use of good cow's milk when used unboiled or but slightly warmed. Long continued boiling or the sterilization of milk seems to be contributing factors in the production of infantile scurvy. The addition of patent foods to milk which has been overheated or to so called condensed milk seems to particularly favor its development. On the other hand, it is well established that if to the child's diet of milk there are added fruit juices, fresh meat juice, and potato that scurvy can be avoided and if present will promptly disappear. Orange and grape juices are particularly helpful. The former can be administered three to four times a day in teaspoonful quantities an hour before the

ordinary feeding of the child or a smaller quantity of the fresh juice of grapes will accomplish the same purpose. Beef juice pressed out of the fresh beef and not taken from meat which has been roasted is beneficial but not quite as efficient. Our English confrères are very fond of preparing a cream by adding the outer mealy portion of a boiled or steamed potato to milk, being careful to make a perfectly smooth mixture.

It seems to me that this subject should particularly interest this society composed as it is so largely of general practitioners. At the same time it should prove attractive alike to the internist and the surgeon not only from a diagnostic standpoint but because it yields so readily to proper treatment, while the failure to recognize it may lead to very serious consequences.

430 SOUTH SALINA STREET.

DISGUISED STARVATION AND THE REASONING FACULTIES.

On a Heretofore Unrecognized Fundamental Principle in the Physiology of Human Feeding as Distinguished from that of the Lower Animals, and Its Therapeutic Application.

BY NATHAN ROSEWATER, Ph. G., M. D.,
Cleveland.

There are vast numbers of unconsciously starving, as well in the houses of our rich as in the huts of our poor.

Nutrition may, if reduced in quality or quantity, result in loss of weight and function. Starved function soon runs riot, and, powerless to maintain our normal, we are unable to resist germ infection or prevent retrograde processes, while drifting into physical and even mental bankruptcy. Tuberculosis is a too common result.

A flood of contradictory advice is offered: "Appetite is a faithful guide"; "curb your appetite," everyone overeats, "have regular meal time"; "have no regular meal time, wait till appetite's automatic instinct announces hunger, directs what to eat and when to quit"; "instinct (of appetite) is far superior to reason"; "why not apply an intelligent supervision instead of following instinct (of appetite)."

Some animals eat slow, some eat fast, seemingly proving nature contradictory at every turn. The fault may be in man, the student, not in Nature, the teacher.

Pawlow¹ demonstrates provision for an extra supply of appetite juice for digesting whatever, through relish, is about to be eaten in greater amount, but as if in proof that appetite juice is not indispensable to her plan, Nature is provident enough to furnish ample relays of digestive juices and processes as self defenses, even after food has left the stomach, both for those who eat without relish and are therefore not supplied with appetite

¹London: Food, *Journal of the American Medical Association*, July 26, 1907, p. 200.

²"Relish is the key to it all of Our Nutrition. (Not a quotation, but the author's logic.)"

³Wells: *Hutchinson's Medicine*, April, 1906.

⁴Chittenden: *The Nutrition of Man*.

⁵Pawlow: *The Work of the Digestive Glands*.

juice in advance, as also for those with incompletely digested food.

Appetite is the desire for having and enjoying food whether needed or not. We have the true appetite of hunger, denoting hunger of exhausted body cells, and false or mental hunger expressing habit and other suggestions of desire at sight, smell, taste, or thought of food, even when not needed. So, also, we have true satiety, when the body cells are nourished and sated, and false or mental satiety when a feeling of satiety exists in spite of exhaustion and hunger of the body cells. Similarly we have true fullness just after a large meal, and false or mental fullness after a single mouthful of food, and no sense of fullness just after enormous meals. We have abnormal as well as normal instincts.

Modern cooking and eating at regular intervals is by thoughtful human provision and anticipation of true hunger, substituting mental or false appetite, through habit, also through savoriness, wholesomeness, variety, sufficiency, and regularity, while adding to the convenience and system of the family, instead of waiting for the call of true hunger with its irregularity, individual preferences, uncertainty of keeping supplied, and its untimely annoyance of the cook, by each member of the household.

The hunger centre apparatus thus anticipated cannot but prove untrustworthy through constant lack of function.

Our regular meals often immediately gratify us and psychically satisfy a habit appetite. This instant satiety is not that of true hunger, since food cannot be completely digested and absorbed for from three to five hours or more after it is eaten, sufficiently to reinforce the body cells and cause true satiety. Thus, not by the nutritional help of our breakfast, do we feel strong and accomplish our morning's work of body and brain, but by the supper of the night before, supplied to the exhausted body cells during the resting period of brain and body whereby rested and reinforced we work the greater part of the day, often long after the breakfast supply reaches the cells and which, according to its abundance, furnishes renewed endurance for the rest of the afternoon and later. The noon meal maintains body requirements till long after bed time.

Our modern system of eating by supplying meals in advance of true hunger, of sufficient quantity, proper quality, and at regular intervals, prevents our necessity of yielding to untimely, false, or purely instinctive and unreasonable desire for food.

The physiological lesson thus taught us is, that it is not so much through our animal instincts but largely through regulations of feeding, due to human investigations and reason, that we accomplish our daily work of brain and body.

Habit intervals begun in infancy, increased in length from two to three, four, five, or more hours, have replaced the old irregularity of feeding the baby at each cry, and so too with the older ones till at school and at work they are trained for five hours intervals or more, whereby to-day not only are saved the fittest who survived the old ignorant and savage way, but multitudes who would have been among the unsurvived or unfit.

Neither appetite, fullness, or satiety always work

automatically or in harmony with the hunger centre and cannot, without check, be trustworthy guides concerning the immediate or remote nutritional needs of the human body as to quality or quantity, in health or in disease. These instincts are not even trustworthy guides in animals. Scarcely an animal that cannot be baited with poison. The horse founders from eating too much. Again, though you bring your animal to the trough, you cannot make him eat. You may coax him or beat him, but you cannot reason with him. His instinct, whether eating too much or too little, is final.

The fundamental principle in the physiology of human feeding as distinguished from that of other animals consists in man's ability to appeal from instinct to reason, whose judgments are final, determining why more or less of this or that should be eaten, exercising control over his nutrition regardless of demand or lack of demand through mere instinct.

Reason presiding over all his animal instincts, passions, impulses, and habits, teaches when to trust or distrust, when to yield, and when to control his desires. Man's judgment based on reason weighs the merits and demerits of everything involved in his problem of nutrition, controls his momentary desires and his final acts, *though giving to appetite fullness and satiety due but not undue credence in forming that final judgment.* For ages physiology has recognized a great distinction between man and the lower animals, and founded it upon man's power of cultivating these higher faculties, and not again until he approaches the animal and his sanity changes to insanity does he lose the power of profound reasoning and perfect mental control that makes for his greater self preservation. Pathology has pointed the way in showing that brain lesions or perverted brain functions are often associated with perversions of the digestive instincts, but nowhere does it seem to have been pointed out by physiologists heretofore, that our reasoning faculties are in supreme control and that we not only can but must, through exercise of our higher faculties, guard and guide our instincts and desires in health and disease. Man's overindulgence through uncontrolled appetite, or his repeated refusal to eat through lack of appetite are, as a rule, physiological errors and injurious to health. Lack of appetite, fullness, satiety, disgust for food, etc., if apparently uncontrollable, must be completely overcome by force of will, feeding even without it, by gavage, by rectum, etc., and if these and other abnormal and distressing sensations are due to starved or painfully functioning organs, they will abate with the increased functional strength resulting from continued feeding.

Forced feeding, supernutrition, etc., are not new methods, but in view of the present attitude of so many physiologists who state that appetite is a sufficient and true guide, it seems essential to point out that not simply as a method of feeding nor for physiological economy in our nutrition but as a *fundamental principle in the whole social problem of feeding it is necessary to enunciate the proper relations in the human being of appetite, fullness, and satiety to the faculties of reason, judgment, and will.* A sudden or slow cessation of appetite with

food reduction soon presents the varied picture of subnutrition, unmasked as it should be as *disguised starvation*. This veritable twin brother to famine is always with us, a daily tragedy of "home, sweet home." The good housewife, waking with multitude of economies, duties, and worries, prepares breakfast and watches over husband and children so that they eat with relish while she, unobserved, takes but a bite and feels that she can eat no more. She fills her husband's lunch box with a big meal, for, "poor, dear fellow, he has to work so hard,"—never thinking that she works fully as hard. She hustles the children to school and is busy with work and worry till noon, when she gives the children their luncheon and for herself again takes but a bite or two, while her little ones eat heartily with minds on play. They go, and she soon is busy with the everlasting grind. Tired in body and mind, her supper is ready, but too often, spite of appetite, the same process is repeated, for the poor, worried brain and tired nerves feel even the slightest demands of the stomach as too much of an effort, and in response to their feelings she can scarcely eat at all. Everybody else eats with relish, but each effort is a task, and after trying a few times her will yields to her feelings and her supper is ended. She works and worries till exhausted she goes to sleep, if she can. All surplus fat of care free days is gone and now each swallowing act distresses. The starved muscles of deglutition and digestion as well as the motor and sensory nerves are on a strike. Often there is eructation of gas, so caution about eating is increased. She cuts down her meal to a bit of toast and tea or coffee, or she feels even the toast hurts or repeats on her, and, she drinks only tea or coffee, or the like, because they glide down without much muscular effort, and her distress is much reduced, while her tea or coffee, although not food at all, by stimulating like whiskey, gives a false sense of strength followed by weakness, for which she again takes more of her dope. Her pains, general tiredness, periodic and other functions keep getting worse. She is treated, perhaps, as a hypochondriac, a hysteric, a neurasthenic, a dyspeptic, anæmic, or a pretuberculous case. The germs of disease finally lodge and thrive.

What, now, can be done for this despairing subject of tuberculosis? Now, too, paralyzed seem the so called automatic digestive instincts. She acts as if all communications had been cut off—no desire or ability to eat, however tempting her food. Never despair! Appeal to her reason, to a higher faculty than appetite, to her sense of self preservation, to her love and duty to her dearest ones, and she must respond. Her reason and judgment arouse new hope and cheer, awaken her indomitable will, and conquer her drooping instincts; she eats, taste or no taste, appetite or no appetite, regardless of pain, of fullness, or distress. Thousands are happily testifying to such results even at so late an hour of despair, as witnessed by the cured cases after supernutrition at sanatoria, hospitals, and even at home, while thousands can hereafter do so if guided correctly in the early periods of disguised starvation, by knowing how to prevent—whereas to prevent both the disease and the stigma attaching to this disease, is worth to the individual, to the family, and to the state infinitely more than mere cure.

CASE I.—A young female teacher complained of a nervous and general breakdown, fullness, loss of weight and appetite; in fact a return of symptoms for which she had sacrificed an appendix and ovaries. She admitted that she had for years hardly eaten anything when driven by her studies and duties until her health was ruined by humoring her appetite. Here was a food intake at times only ten, twenty-five, or fifty per cent. of the minimum required to maintain general nutrition, which, I explained to her, must result in continued failure up to a point of physical and, perhaps, mental bankruptcy. When properly instructed she said: "I plainly see how my health was ruined by humoring my appetite, eating hardly anything when driven by my studies or other duties." She began at once to govern her meals to the needs of her body instead of yielding to its whims, and in a short time was and is now in better health than ever.

CASE II.—Another lady, highly cultured, with a long history of pelvic and gastric pain, distress, emaciation, and an insomnia of years, was urged by the same nerve specialist and the same gynecologist, who advised the before mentioned teacher, to submit to a pelvic operation. Two gynecologists advised against operation. She was referred to me by my brother, Dr. M. Rosenwasser. Remarking that all who tried had failed and she expected I would also, I begged her to obey regardless of lack of confidence or temporary setbacks. This she did spite of a week of almost constant nausea, pain, distress, and vomiting. She had experimented as to diet. Three meals a day giving constant misery, she cut down to two, this giving a few hours' freedom from distress in those intervals when her stomach was not at work, she tried only one which thus reduced the hours of stomach activity and distress still more. I ordered a diet of three raw eggs twice a day, later four with toast, etc., added. After a week, nausea and distress decreased and left. She gained ten pounds in a month for four months, going from ninety pounds to one hundred and thirty. Long ere this, pelvic and gastric pains had left, and she was climbing steep hills in the Adirondacks, rowing boats, taking long walks, increasing and later maintaining body weight. Pelvic disturbance, for which operation was advised, has never returned.

Both of these cases warn the surgeon not to accept, without caution, the teaching of those who report recoveries from severe nervous symptoms as the result of removal of organs, as was done in Case I, when later on, with incriminating organs removed, symptoms returning, cure was affected solely by liberal diet. As a liberal diet usually follows operations, diet should have been credited with the reported cure instead of the operation, and perhaps in other cases, if tried first, might have avoided operation, as was done in Case II.

CASE III.—A young female clerk took for breakfast only a cup of black coffee without sugar or cream, and filled her lunch bottle with it. No other food was eaten with either meal. Thus, no real nutrition was taken during the day-time and often, too, coming home, worn out, she went to bed without supper. This economy was so as to keep well dressed as a clerk, furnish her room, pay rent, and supply her wants on her wages. She complained of mental depression, complete loss of appetite, not having eaten for four days, also intense urticaria. Her suppers felt heavy and distressing. She had a slight facial palsy, at times a loss of mental control. After a cathartic and liberal use of eggs and milk all symptoms left, and she gained eight pounds in two weeks. Although discharged with earnest warnings, I am told she drifted back to old economies the following year and after pneumonia, tuberculosis followed, demonstrating the danger of infection through subnutrition.

Space forbids citing more than these as typical of a vast number of cases.

The picture may vary. The victim reads that everyone eats too much and starts down the road to food reduction without guidance as to what the minimum should be. Perhaps a bereavement or a cross in a love affair shuts off appetite. Perhaps a teacher's daily nagging pupils upset her nerves, or

her superiors speak unkindly to her till appetite leaves never to return, or someone preparing for examination sees no necessity to take time to eat enough. Perhaps it is a mother nursing a baby who takes more than the mother is replenishing. Perhaps it is someone with a tuberculous family history whose sudden loss of appetite, if unchecked, may quickly result in tuberculous invasion. Perhaps it is an ill fed child whose brain cannot work at school without food. Perhaps the digestive organs are diseased, stomach dilated or displaced; these or other organs do not functionate in harmony, or the fault may be in the circulation containing toxic bodies, or the blood may lack some element necessary for nutrition, which only the careful study of a physician can determine and overcome.

The important point is, we must be able to recognize, in spite of its mask, the common occurrence of starvation disguised. For the hosts of unconsciously starving, or for those liable to make the same error there is a prevention as well as a cure, in education as to the dire results of food reduction and the good results from sufficient daily nourishment. This can easily be put to practice, scarcely altering present conditions of the home.

A delicate, quite safe, and easily popularized test of body nutrition is weight and its relation to height. It not only determines the normal, but marked deviation is correctly interpreted by even the ignorant. The greater the deviation by loss, the stronger the warning. Tables with allowable range of deviations should be furnished.

All within the normal range if apparently well need make no change in their meals. These, the bulk of the population, are not interfered with by the proposed plan which will scarcely interfere but often simplify and lessen the task of preparing meals in most homes. Two or three meals and plenty of water are, as a rule, preferable even for those who work hard, a hearty breakfast and supper, with or without a luncheon at noon, according as work is light or heavy or extended into the night.

Those below the normal weight range in proportion to their deviation should eat, in addition to what they usually eat with each meal, some easily taken or best relished item of substantial food, of uniform size, beginning with one piece or portion and increasing by one, two, three, or more at a meal, until a steady gain in weight occurs, when the amount required daily to maintain the increase being determined for such individual it can be kept up or lessened as desired. This item of food may be varied by substituting a similar bulk of some equally nutritious food. Thus, if eating one, two, three, or more eggs at each meal, one, two, three, or more large slices of bread well buttered or of buttered toast, or equivalent items of other food can be substituted, if the persons tire of sameness.

The consumptive, suspect, and those close to the danger line must be urged, almost compelled, regardless of appetite, to eat up to requirements. Those failing to gain should consult their physician.

Yielding to no one in appreciation of the invaluable work on nutrition of Professor Irving Fisher, of Yale, I must, however, because of its widespread publication, call attention to what seems to me fatal errors in his recent tests and conclusions as to the

trustworthiness of appetite.* The three rules for Fletcherization were: 1. "Chew all food thoroughly" (for reason of comminution, not from instinctive appetite). 2. "Put implicit obedience in appetite." 3. "When instinct of appetite is in doubt, use reason." The men were instructed beforehand how to interpret (reason out) their instinct. Reason guarded and guided appetite throughout the test for the preeducated appetite was, when in doubt, to call again on reason. Not appetite but reason should be credited with the results. These tests were made with care free young men, who rarely lose appetite and were not burdened with necessities of economy in selecting their food by their purse, whereas millions of people afflicted with ignorance, economy, poverty, or lack of appetite would tend to overthrow such deductions and also the statements of such eminent and careful physiologists as Lusk and others who coincide in his views, that, "in view of the physical well being of savage races and ignorant peoples throughout the world, it must be apparent that the normal instinct of appetite is a faithful guide for the nutritive requirements of mankind." The decimation of the savage, spite of greater governmental care, the ease with which he succumbs to infections, compared to civilized races, suggests that his physical wellbeing is below normal. The farmer, savage, and the more ignorant, have the advantage of more muscular exercise, fresh air life, more rest and sleep, less brain wrack and worry, no midnight lunches and short interval meals, far less xanthin and alcohol, plainer food, and some common sense reasons unconsciously used with their meals. Deduct these, and but little is left to the credit of "normal instinct of appetite." Give the savage abundance and a free rein—he will over-indulge; burden him with cares and trouble and he soon lodges in starvation camp just as others do. The popularization of such views on appetite is most unfortunate, misleading, and dangerous, not to few but to thousands.

THERAPEUTIC APPLICATION OF THE REASONING FACULTIES.

Reason should not alone find application in the control of man's nutrition, but as far as possible in every branch of his therapy, even as it does in every act of his daily life, public or private.

In psychotherapeutics, its application is broad and distinct. To all who have the gift of reasoning and forming correct conclusions, the supremacy and influence of these higher faculties teach the benefits and call forth the exercise of contentment, cheerfulness, and buoyancy of spirits based upon hope assured and in participating and rejoicing in the happiness of others and in anticipation of pleasures to come, and also teach the benefits resulting from suppressing and controlling the passions or emotions of grief, fear, and other morbid or selfish mental states and feelings, that inhibit or depress normal faculties. Reason arouses and calls into play as tonic substitutes for these psychic inhibiting vices, as their natural antagonists, every virtue, fearlessness, and courage, hope, and cheer, unlimited patience, resignation, obedience, and an endless power of deter-

**Transactions of the Connecticut Academy of Arts and Sciences*, xiii, pp. 1 to 46.

mination and will in favor of what the judgment says is right, that is simply unyielding and indomitable in restraining and correcting wrong habits and desires. These psychic tonics can be drawn upon by appeal to the will aided by reason, in unlimited amounts. Reason is founded upon what is true and right—its power is accurate and invincible. It rests upon no mysticism, it deals in no miracles, it appeals to no blind faith, but is always open for inspection. The physician has at his command all the substances and forces of nature. Medical science based upon reason rests on the solid rock of accumulated facts and truths. The more it is tested the more it is trusted. It demonstrates the limited value of prayer and faith, their true and false uses. It takes no one away from church or creed. Appeal to suggestion, religion, and fanaticism as well as other forms of dogmatic belief in healing power ought to be limited to those whose minds cannot or do not reach the higher planes of profound reasoning or are unsophisticated and are more easily led by sophistry, by impostors, or by impulse, as is the case with little children, or with the densely ignorant. These nonreasoning classes it is whose implicit faith, buoyancy of spirits and blind obedience to command based on faith, occasionally find sufficient benefit in any faith or cult to result in a cure. Unfortunately when no diagnosis is made, any suggestion or promise of cure made by those who in ignorance or dishonesty cannot or will not diagnose the disease, may result in death or disaster to the patient, since such promises and hopes are much more likely founded upon a lie or error, than on the truth, and like a rope of sand, must fail if built on error or falsehood even though in the hands of those honestly inclined, yet honestly blind. Progressive medical science is ever searching for truth and pointing out error—and how to shun it—while Christian science advises the avoidance of error, yet blind as to where or how to shun error, urges its devotees to avoid the advice of medical science, although aware that medical science has been for ages accumulating the truths and facts concerning the error of the human mind and body, for the guidance of the human race! Where else than in the store houses and clearing houses for these truths, should anyone, in search for any particular mental or bodily error seek? But why expect anything else but deceit and dishonesty (for no other apparent good or bad reason than for the sake of filthy lucre), from an institution whose very name is a robbery and counterfeit, stealing the word Christian (Christ was no healer after their pattern!) to give the institution the semblance of holiness, and the word science to give it the gloss of accuracy and truth without error! Christian science, like others of the nature fakir class, advises no special diet, teaching that the sick and well alike should govern themselves by appetite, whereas medical science points to reason as the true and supreme controlling power when ever appetite is erroneously uncontrollable, be it in the excessive or insufficient taking of food, or in the abuse of tobacco, alcohol, or other habits and desires.

Even as the sun controls the movements of the planets, so reason towers supreme in control above the will and supported by the truth and the right, directs it irresistibly against all obstacles. Conscience, the cognition of all pros and cons, is but a product of reason, and when awakened there comes the supreme antipathy, the antagonism, the loathing and the power of resistance arrayed against whatever is wrong in men's actions or thoughts, until the victory is complete, truth prevails and reason triumphs.

Reason strengthens and encourages the will of the patient by impressing upon him the truth that he has power in his own unconquerable will, to overcome and restrain his almost ungovernable appetite, however strong that may have become, for food, for drink, or for drugs.

This power was and still is his as a gift of Nature. Instead of praying to his Maker to help him to control himself, he is taught the truth, that his Maker has given him absolute control and constant mastery over his own will, that it is his duty to his Maker, to himself, and his family, to assert supremacy over his own weakness, never to despair, but to cultivate it and keep it supreme and alert on every occasion.

The members of the medical profession owe it to themselves and their patients to be their own Emanuelists instead of calling to their aid a clergy poorly equipped in medical lore and absolutely ignorant in diagnosis, however humane their intentions.

SUMMARY

Disguised starvation is prevalent everywhere, from an unconsciously insufficient food intake (mainly from economy, worry, and ignorance), causing an atonic state and rendering the underfed powerless to maintain normal function, susceptible to many intercurrent diseases, unable to resist tuberculous and other infections, while tending toward mental and physical bankruptcy.

The lower animals follow instinct, especially instinct of appetite, because possessing no other controlling faculty. Man's highest faculty, reason, presides over his instincts—appetite, fullness, satiety, etc., giving to these due but not undue credence and weight in deciding and controlling his final acts. The application of this hitherto unrecognized principle regarding the control of our wants by reason is as follows: Man's yielding to overindulgence of food through uncontrolled appetite also his repeated refusal to eat through lack of appetite are, as a rule, physiological errors and injuries to health.

Having no appetite is no excusable criterion for insufficient eating, since man possesses abundant processes for digesting his food, even without appetite, and can force himself to eat, in spite of lack of appetite, fullness, or even disgust, through the supreme control and guidance, by his reasoning faculties, of his force of will.

To save all classes from the results of disguised starvation, the public should be educated to know by tables of normal weight and height, those too far to either side of the normal range, should be taught to use good reason, judgment, and will, so as to get within the normal range by controlling the quantity, quality, and time of their meals.

Under the supremacy and influence of man's rea-

Christ was not "God," and consequently devoid of his suffering, or his love, and his power, and his grace, upon the cross, when he died for "Mankind." God, who has Everlasting Mercy, must be openly proclaimed as untrue by every Christian scientist.

soning faculties, his strong desire for drink and drugs, and his other habits are restrained and controlled, his despondency and other vicious mental and nervous states that inhibit or depress his normal functions are overcome by hope assured, cheerfulness, and other human virtues substituted as tonics for his vices. The physician thus has at his command, beside all the substances and forces of Nature, an unconquerable and almost unlimited power for good inherent in his patient for direct psychotherapeutic treatment through reason, judgment, and will, and also in a much more limited degree through suggestion, without mystery, miracle, faith cure, fanaticism, or deception, and to the logical exclusion of the nonmedical man with his dangerous treatment without diagnosis, knowledge of human anatomy, human disease, or medication. This law concerning the supremacy and control of reason applies with all the more force the higher up man is in the scale of enlightenment from the savage, who approaches the animal in being very largely under the control of instinct.

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THE PRESENT STATUS OF STOMACH LAVAGE.*

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For many years emetics were employed for the removal of the contents of the stomach, but of late lavage has come into current use. For the idea of washing out the stomach we are indebted to Kussmaul, of Strassburg. His results proved so fruitful that this new therapeutic measure was soon adopted by the medical profession, and for several years it has been the favorite treatment in gastric affections.

The practitioner was at once won over by the simplicity of lavage, for the stomach is a receptacle which may be washed out as often as desired and can easily be kept clean. From knowledge of the fact that when food stagnates and ferments in the stomach, the patient experiences marked improvement after this treatment, the conviction has gained ground that it is the best means for treating all affections of the stomach, whatever their cause or nature may be. Practitioners ceased to trouble themselves about differential diagnoses, and applied lavage of the stomach in every case of digestive disorder. As is usually the case when a new and apparently successful therapeutic agent is in fashion, it was used indiscriminately. For thirty years there were no precise rules for guidance in this treatment. However, the reaction has now set in, and many modern authors point out the abuse to which this treatment gives rise, and define its indications and counterindications. If the physiology of gastric function had been better known, probably these indications could have been established

more readily. But during the period referred to, which extended from 1870 to 1895, nothing but the chemical action of the gastric juice received attention. Lavage of the stomach seemed to be the best means for modifying and counteracting functional changes. Only when it was learned that the mechanical function played the principal rôle in digestion, could the indications for irrigation be more precisely determined.

The idea should have suggested itself that lavage of the stomach is a procedure opposed to nature, because it interferes with the normal course of the food; the chyme prepared in the stomach ought to pass through the pylorus in order to undergo transformation in the intestine so as to be reabsorbed. Serviceable stomach lavage should drive the contents of the stomach into the duodenum as rapidly and completely as possible, for this is its natural channel; whereas in the case of a pyloric stenosis the digestive work of the stomach is not only retarded but the stomach cannot empty itself. Even if the pylorus is patulous, too long continued irrigation may cause an exhaustion of the gastric juice and tend to dechloridize the blood serum. These considerations demand caution in the employment of lavage of the stomach.

We have often seen how enormous quantities of water were introduced, even up to the maximum the stomach could endure. This brutal manner of washing a stomach is totally opposed to the physiology of deglutition which we ought to take into consideration in the application of lavage. It may require years for such an overdistended stomach to regain its normal tonicity. The practitioner endeavoring to give relief to his patients suffering from diseases of the stomach has made it a routine practice to wash out the stomach. There is no question in my mind but that this is conducive to a great deal of harm. Many patients are placed in a condition from which they never make a recovery and, if they recover it is usually only after a long and tedious time. When the musculature of the stomach is weakened and relaxed, we have a condition known as atony of the stomach. Atony of the stomach is a condition which accompanies many diseases. It is found in many patients who have been reduced in strength. We find it in diseases of the lung, heart, liver, kidney, besides in the diseases of the digestive organs. Where the stomach is relaxed, there is usually an atrophy and fatty degeneration of some of the muscle fibres, and the introduction of water may lead to a dilatation. Just as soon as the muscle fibre of the stomach is distended by the water, the motor function is temporarily retarded, and the stomach does not empty its contents into the intestine. Food, eaten while the stomach is in this condition, stretches the stomach by its weight, interferes with motility, and thus prevents the muscle from retaining its normal elasticity. Thus an atonic condition difficult to overcome is brought about. The muscle layers become thin and the muscularis is reduced to isolated bunches of muscle fibres, a condition which leads to dilatation.

Let us now examine the manner in which Nature empties the stomach by vomiting. Aside from those

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cases where it is produced by reflex action, vomiting occurs, in the majority of intoxications, either by direct irritation of the gastric mucous membrane or more particularly by irritation of the vomiting centre in the medulla. Any obstacle which interferes with the free passage of the food in any given part of the alimentary tract may produce vomiting. In cases of poisoning the poison is in part eliminated through the gastric juice, regardless of the way in which it was administered. Nearly one half the quantity of morphine injected subcutaneously is found in the stomach as early as half an hour after injections, and the same effect may be observed with many organic or inorganic toxic substances. In uræmic patients a strongly ammoniacal fluid is present in the stomach, the composition of it being similar to that of urine, and vomiting is of constant occurrence. Urea is often eliminated through the stomach. Vomiting is, therefore, a measure of defense against intoxications on the part of the organism, and shows that we can considerably assist Nature by lavage of the stomach. Experience has, therefore, taught us the great usefulness of lavage in most cases of intoxication and auto-intoxication. It is of great benefit in the vomiting of patients suffering from uræmia and eclampsia, and in urinary intoxications generally.

In gastric retention, owing to a stenosis of the pylorus, the stomach becomes very tolerant, and some patients do not eject the contents of the stomach more than once in twenty-four hours. In these cases lavage of the stomach is merely of temporary and transient value, the only logical intervention being surgical.

It will be seen, therefore, that the only serious indication for lavage of the stomach is in intoxications or in cases where it is desirable to rapidly empty and cleanse the stomach. It will, therefore, be most frequently employed as a symptomatic procedure, which, while acting as an adjuvant to the general treatment, has no curative action of its own. In treating certain affections of the stomach I rarely employ lavage. Occasionally the mere mention of the washing out of the stomach with a long tube has a beneficial effect on nervous patients. Sometimes the mere threat of employing this treatment is sufficient to cause a goodly number of the symptoms to disappear, such as anorexia, eructations, vomiting, etc.

Are there cases in which, for diagnostic purposes, the introduction of a soft rubber tube into the stomach should be avoided? Most, if not all authors object to the employment of this measure in the presence of ulcerative conditions of the gastric mucosa, and more particularly where there is hæmorrhage. Boas considers it even necessary to allow, after hæmorrhage, three or four weeks to elapse before irrigation may be recommenced. The other contraindications are cardiac affections, aneurysm of the aorta, advanced arteriosclerosis, cachexia, old age, pregnancy, etc. In some cases I do not even see the necessity of examining the stomach contents in the presence, for instance, of a mitral insufficiency, when we know that the dyspepsia in these patients is due to functional insufficiency of

the circulatory apparatus, causing a venous engorgement in the gastric mucosa. We know that digitalis or strophanthus has a better curative effect in such cases. The rational employment of a stomach tube for a distinct purpose must be left to the discretion of the physician who must weigh in each individual case the advantages against the disadvantages.

I have used the stomach tubes for diagnostic purposes in old people without feeling uneasy about the theoretical contraindications enumerated with much detail in the textbooks; but in each case I have given due weight to the question whether the procedure was one of absolute necessity.

Now, what is usually done when a stomach is being washed out? Even the most conservative are not afraid of introducing quantities varying from a quart to a quart of water and more in one injection. This practice is not to be commended, for it is frequently followed by a sagging and dilatation of the organ it was intended to cure. Therefore, if we are to wash the stomach, let us imitate Nature and introduce frequent, but small quantities for irrigation purposes; generally speaking, a few ounces in one application, and this quantity may be abruptly poured in, without causing any alarming reaction. After each injection the attempt is made to empty the stomach, by requesting the patient to bear down with his abdominal muscles, at the same time holding his breath and closing the glottis. In this way the stomach can be emptied and completely cleansed in four or five applications, even when there is considerable retention.

In order to effect the emptying of the stomach, as soon as sufficient fluid has passed into the stomach, it is recommended that the funnel be lowered, thus creating a syphon action. The majority of authors declare that it is the syphon action which empties the stomach, but the stomach cannot empty itself by the mere action of the column of water that remains in the rubber tube. The flow of the fluid can take place only when aided by the pressure of the abdominal muscles, the diaphragm, and the stomach itself. For this reason it is not necessary to lower the funnel as in true syphonage, but simply to detach the glass joint connecting the rubber tube, and to allow the fluid to escape from the free end of the stomach tube. It is, therefore, unnecessary to fill the stomach with one or five pints of water in order to effect a complete cleansing. And yet some modern textbooks recommend these large quantities of water, which, in my opinion, are unnecessary and do more harm than good.

You will have observed from what I have said that aside from intoxications where irrigation of the stomach may effect a cure, it may also be usefully employed in stenosis of the pylorus, pending surgical intervention. Where there is no question of intoxication or of more or less complete occlusion of the pylorus, we have a method of autolavage, without the use of the stomach tube, which gives very good results. But in order to be quite successful, a fair portion of the pylorus should still be in properly functioning and elastic condition. This condition is present in a large percentage of patients who complain of indigestion from relatively unimportant causes.

Such patients are very numerous. They ingest food and beverages in excess and become sooner or later candidates for nephritis, hepatitis, arteriosclerosis, rheumatism, etc.; and in the course of their carousals they are obliged to invoke the aid of a physician to relieve their fatigued organs. Autolavage is a form of stomach irrigation, which has been called physiological in order to distinguish it from the kind we have spoken of before; for here the use of the stomach tube is not necessary. It is sufficient that the patient drink four to eight ounces of the irrigation fluid and then lie down on his abdomen supported on a somewhat hard resisting surface, across the bed on the floor. In this position let him breathe as deeply as possible. Fifteen to twenty deep respirations are sufficient to drive the contents of the stomach through the pylorus. This procedure may be repeated as often as necessary. As a rule, the patient may rest on the abdomen for five minutes, taking from time to time a number of deep respirations. It has been proved that in this way the stomach may be cleansed quite as effectively as by the introduction of the stomach tube, provided always that the pylorus is not occluded. This method has a considerable advantage over the other for by it the nourishment as prepared by the stomach is not lost and follows the physiological path. Besides, the patient will submit much more readily to it than to the manipulation of the stomach tube. In order to obtain the maximum effect from this method of autolavage, we must strive by all means at our command to free the pylorus from all obstacles that interfere with its proper function. This is partly achieved by administering the fluid lukewarm.

We know that hydrochloric acid, especially if it exceeds the physiological concentration, has the effect of contracting the pylorus more energetically, producing a spasm. When this acid is found in excess, it should be neutralized as much as possible by means of a suitable alkaline solution. This solution is administered in doses of from six to eight ounces, and the procedure is as we have just described. The alkaline solution favors intestinal digestion, which requires a slightly alkaline medium to reach the maximum intensity.

The question which is frequently asked as to what is the proper time for irrigation of the stomach is easily answered: It depends on the composition and quantity of the last meal the patient has ingested. Thus, we know that a midday meal, consisting of normal quantities of meat, farinaceous or vegetable food, bread, and fruit, will have been digested and will almost entirely have left the stomach in about six hours. If by that time the stomach is not emptied, the methods described may be proceeded with. By autolavage the organism is not deprived of a particle of the ingested food, nor the stomach of its digestive juice. Therefore, autolavage may be applied two or three hours after a light breakfast, four or five hours after the midday meal or evening meal, and sometimes also in the morning before breakfast. In this way the stomach will be effectively cleansed after each period of digestive work.

SYMMETRICAL LYMPHOMATA OF THE LACRIMAL AND SALIVARY GLANDS (MIKULICZ'S DISEASE).*

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It is now twenty years since Mikulicz first described, in 1888, a characteristic and symmetrical enlargement of the lacrimal and salivary glands, chronic in character, of a noninflammatory and non-painful type, and not associated with any demonstrable systemic disease. Four years later (1892) he contributed to the *Billroth Festschrift* a special study based on three cases of this rare disease, including the case reported by him in 1888, another reported by Haltenhoff in 1889, and a third which Fuchs had placed on record in 1891, to which he added a brief review of ten similar cases, and thus fixed in ophthalmic literature the characteristics of a disease which has since borne his name. The most important contributions since that time have come through

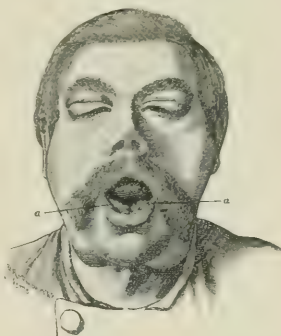


FIG. 1.—Symmetrical enlargement of the lacrimal, parotid, and submaxillary glands. (Original case of Mikulicz.)

the clinic of Mikulicz, Tietze in 1896 having reported one case, and Kümmel in 1897 having collected six additional cases which he presented in a review of the literature of the subject, comprising a tabulated analysis of twenty-one cases, including his own. Many interesting monographs have since been presented, including those of Axenfeld, Zirm, Bock, Pick, Hirsch, Fleischer, Baas, and others. Among these, that of von Brunn (1905) is probably the most complete, while Meller (1906) and Snegireff (1906) have each added some very interesting observations. Valuable contributions have also been made by certain French observers, the most important being those of Abadie, Delens, Gayet, Haltenhoff, de Lapersonne, Panas, Debieuvre, DeWecker and Masselon. A series of similar cases were briefly reported before the Ophthalmological Society of the United Kingdom (1887-94) by Power, Frost, Juler, Brailey, Silcock, Snell, Sandford, and Griffith; while in America interesting examples of this rare disease have been placed on record by Randolph

*Presented at the meeting of the American Ophthalmological Society, July 14, 1909.

(1897 and 1909). Osler (1898), Stieren (1901), Posey (1902), Shoemaker (1904), Cutler before this Society (1904), and Ziegler (1906).

SYMPTOMATOLOGY.—The disease is sufficiently described by its name—symmetrical lymphomata of the lacrimal and salivary glands. Mikulicz originally segregated cases in which the lacrimal, parotid, and submaxillary glands were symmetrically and simultaneously enlarged (Fig. 1). Later reports from his clinic, however, included cases that were nonsymmetrical, and cases in which only a single pair of glands were involved. It is quite possible that these atypical cases might have developed lymphomata of the unaffected glands if they had been kept under observation long enough, without instituting treatment. This would seem to limit the characteristics of this symptom complex, therefore, to a chronic, indolent, symmetrical enlargement of one or more glands of the head, of a noninflammatory and nonpainful type, not associated with any systemic disease, beginning, as a rule, in the lacrimal, and soon involving the parotid and submaxillary glands. This sequence, however, may be reversed. The accessory lacrimal glands and the accessory parotids are frequently involved, while the preauricular glands may participate in this process.

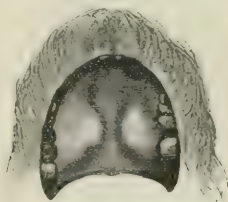


Fig. 1.—Enlarged glands of the salivary glands. (Mikulicz.)

The sublingual glands (Fig. 1, *aa*) and the glands of the palate (Fig. 2) have also been affected in many cases. Involvement of the Blandin-Nuhn glands may cause a distinct nodular swelling on the tip of the tongue.

Occasionally some of the other glands have shown enlargement, but their interrelation has not been proved. Osler noted enlargement of the spleen, of the cervical chain, and of the tonsils in his case. Sandford reported hypertrophy of the tonsils and adenoid tissue of the pharynx. Haltenhoff found marked tonsillar enlargement. I have likewise noted enlarged tonsils in both of my cases. Such conditions were usually antecedent, however, and neither synchronous nor associated. Otherwise, no evidence of a general lymphatic disturbance has been deduced.

The objective symptoms of this disease are chiefly a dense, brawny swelling of the glands involved, nonpainful but sometimes tender to pressure, freely movable under the skin, but occasionally adherent to the subjacent tissues. The facial appearance is quite characteristic. There is a marked broadening of the cheeks as in mumps, and partial ptosis on the temporal side, the drooping eyelids resembling those of a bloodhound. Elevation of the lid at the external canthus often reveals a downward displacement of the retrotarsal fold by the swollen and

pendulous lacrimal gland (Fig. 3). Both parotid regions are occupied by a broad, oval tumor, which may be knobby or lobulated, and frequently displaces the ear lobe upward and outward. The submaxillaries do not, as a rule, protrude on the skin surface, but may become unduly prominent on the floor of the mouth.

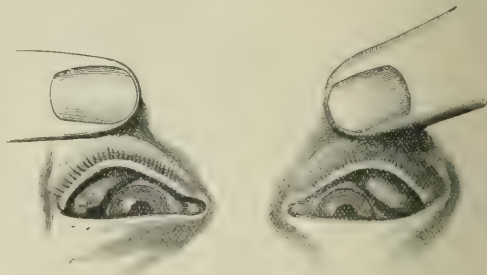


Fig. 3.—Downward displacement of pendulous lacrimal glands. (Mikulicz.)

The subjective symptoms noted in these cases are dryness of the conjunctiva from partial suppression of the tears, obstruction of the vision from ptosis, with consequent inability to see through the chink-like palpebral fissure, dryness of the mouth from lessened salivary secretions, and limited ability to swallow or talk owing to the interference of the enlarged submaxillaries.

Respiratory disturbances are not uncommon. Kümmel has noted hypertrophic rhinitis, bronchitis, asthma, and the sequelae of influenza in several of his cases. Haltenhoff records eczema of the nostril, sneezing, coughing, swelling of the pharynx, and enlarged tonsils in his case. Adler relates that his patient suffered from hoarseness and swelling of the pharynx of so marked a character that a laryngeal examination could not be made. Osler mentions a nasal discharge, thickening of the cartilaginous septum, enlarged tonsils, and other obstructions to free breathing in the case he reports. Pick refers to a chronic cough with expectoration. Ranzi records a persistent postnasal catarrh. My first patient showed hypertrophy of the turbinates, antral discharge, and intranasal adhesions, with unusually large tonsils. My second patient, herein reported, has a similar history of respiratory obstruction. Both were confirmed mouth breathers. Dryness of the lips and mouth has frequently been noted in these cases, and may arise either from oral breathing or from lessened activity of the salivary glands due to pressure on the acini from interstitial deposits in the gland. Carious destruction of the teeth has been noted by Kümmel, probably caused by mouth breathing.

A summary of the cases reported shows that the age at which this disease was first manifested ranged from four years to seventy years. Males and females appeared to be affected about equally. The duration of the attack varied from two months to ten years and upward, which fact of itself would emphasize the chronic, indolent character of this disease. No constitutional disease has been found complicating these cases, when typical.

REPORT OF CASES.—As I shall later refer to certain facts observed in my first case, I will include a condensed history of it.

CASE I.—Agnes M., colored, aged eighteen years. Came to Wills Eye Hospital, January 13, 1905, with symmetrical swellings of the lacrimal, parotid, and submaxillary glands; duration six weeks. Palpation showed that glands were hard, not tender, and nonadherent. Slight ptosis. Lips dry. Tonsils very large but soft and relaxed, filling the post-pharyngeal space and interfering with respiration. Was a mouth breather and showed facial pallor in spite of her color. Hypertrophy of inferior turbinates, with adhesions to septum and discharge from antrum. No systemic disease. Spleen not enlarged. Blood and urine normal. Visual acuity unimpaired.

Treatment.—No medicine was administered, but tonsillectomy was strongly urged.

Operation.—On January 16, 1905, the tonsils were thoroughly excised. Free breathing was at once established. Retrogression of the submaxillaries began promptly, followed by the parotids, and finally included the lacrimals. Convalescence covered a period of about two months. Coincidentally, she was wholly freed from her chronic head colds.

CASE II.—David H., colored, aged thirty-four years, came

to my clinic at Wills Eye Hospital, April 10, 1908, with bilateral enlargement of the lacrimal, parotid, and submaxillary glands, which began about eighteen months ago, and involved the glands in the order named. The swellings were symmetrical (Fig. 4), of a dense, boardlike hardness, nonpainful but tender on pressure; not adherent to the skin but attached to the subjacent tissues. There was some slight ptosis of the upper lids at the outer side, the drooping resembling that of a bloodhound. There were three small lymph nodes on the chest. Spleen was not enlarged. Sublinguals and Blandin-Nuhn glands were not involved.

There was puffing of the turbinates in both nostrils; tonsils were enlarged and soft; uvula was relaxed and pendulous; patient was subject to frequent head colds and was a mouth breather. Extra exertion caused shortness of breath. Suffered from dryness of lips and mouth. For first six months, following onset of disease he had a bad cold with attacks of choking, also alternating attacks of

diarrhoea and constipation. General health good. Blood and urine normal. Family history negative. Had never had any fevers or other serious illness. Had mumps in childhood. Occasional attacks of chilliness; no malarial history. Had not had syphilis. Injection of Koch's "old tuberculin" gave negative reaction. By a control test the same tuberculin gave a positive reaction in two other cases on the same day, which demonstrated the activity of the test fluid and his freedom from tuberculous infection. Vision was practically normal.

Treatment.—I decided to withhold all medication, as in my previous case, and to simply restore nature's functions by resorting to operative measures.

Operation.—On April 15, 1908, double tonsillectomy was performed, and the uvula was excised. The throat healed rapidly, and the intranasal condition showed marked improvement. Free nasal breathing was reestablished and the physical condition improved. The first retrogressive symptom noted was the softening of the lacrimal and submaxillary glands, which began to be apparent about the time he was discharged from the hospital, May 11, 1908. The parotids still maintained their fibrous hardness, although the swelling was somewhat reduced.

ETIOLOGY.—The ætiological factors which most writers have recorded in these cases are: 1. Infection from buccal or conjunctival bacteria; 2, glandular irritation from some toxic agent in the blood or lymph stream causing lymphatic hyperplasia; and 3, some idiopathic origin. Mikulicz and Kümmel favor the theory of "an infectious or parasitical process in the widest sense of the word," but do not explain the origin of their belief. No specific bacteria have been demonstrated in these cases, the microscope usually revealing lymph cell infiltration of the interstitial tissue, which Mikulicz considers wholly responsible for the enlargement of the gland.

Although bacterial infection is usually accompanied by an acute inflammatory process, no inflammation has been noted in these cases. Granting the possibility of infection, whence would it originate—from the eye, the mouth, or the nose? It has been stated that trachoma of the fornix has caused lacrimal adenitis (Baquis). By analogy it is deduced that buccal bacteria might be transmitted through Steno's duct and thus infect the parotid (Hanau). I think it is much more probable, however, that the source of infection is nasal, and the means of transmission through the lymphatic capillaries. It certainly seems possible that a steady stream of toxic, bacteria laden secretions could be absorbed from the accessory sinuses (chiefly antrum) and carried directly to these contiguous glands. If, however, the origin is an infection from neighboring parts, why should the course of this disease be so sluggish and the condition remain unchanged for months and even years? On the other hand, may this not be a chronic hyperleucocytosis strictly localized to these enlarged lymph glands?

How can we explain the retrogression of these glandular swellings during the course of an acute intercurrent disease, and their recrudescence in some cases soon after convalescence? Kümmel has reported such an occurrence during pneumonia, Mikulicz during appendicitis, Haeckel through a severe enteritis. Delens after an attack of cholera. Zirm during an attack of erysipelas which followed partial excision of the gland. Quincke from a similar cause, and Osler after an attack of acute pleurisy with effusion. I have seen slowly healing operative cases improve during an attack of facial erysipelas, and relapse to their previous condition when



FIG. 4.—(CASE II) Author's case of Mikulicz's disease.

to my clinic at Wills Eye Hospital, April 10, 1908, with bilateral enlargement of the lacrimal, parotid, and submaxillary glands, which began about eighteen months ago, and involved the glands in the order named. The swellings were symmetrical (Fig. 4), of a dense, boardlike hardness, nonpainful but tender on pressure; not adherent to the skin but attached to the subjacent tissues. There was some slight ptosis of the upper lids at the outer side, the drooping resembling that of a bloodhound. There were three small lymph nodes on the chest. Spleen was not enlarged. Sublinguals and Blandin-Nuhn glands were not involved.

the attack was ended. This is particularly noticeable in operations about the nose, as the sinus discharges wholly cease for a time, but gradually reappear when convalescence is thoroughly established. The query naturally arises, does the general disease create a systemic polymorphonuclear leucocytosis that temporarily overwhelms and obliterates the localized hyperleucocytosis in the affected glands?

As to the question of hæmatogenous infection, Kümmel says: "There is in no case any reliable evidence as to the transmission of bacterial infection from the blood to the salivary and lacrimal glands." Other skilled observers who have made a careful study of the blood in these cases have likewise noted the absence of bacteria or other abnormal conditions, and thus corroborate this view. The fact that only the glands of the head are attacked would also militate against the probability of a bacteræmic origin, although it is not possible to explain the process of "pathological selection."

On the other hand, Mikulicz suggests the theory that the "disease exciter" is ectogenous, the port of entry being through the conjunctiva; hence the lacrimal gland is attacked first. From thence it passes by the lacrimal canal to the nose, nasopharynx, and mouth, which through their similar mucous membrane linings form a "continuum" that carries this agent to the other glands. In view of the fact that no specific infectious germ has been isolated, this theory of transmission seems too hypothetical to merit our acceptance.

There still remains for our consideration the view that some toxic agent or chemical irritant in the lymph stream might cause an occlusion of the efferent lymph channel of the gland, and thus encourage leucocytic engorgement. This could occur in one of two ways: 1, From some perversion of glandular function resulting in the secretion of irritating materials and their retention within the gland substance, and, 2, from irritation of the gland by some toxic fluid which is absorbed and transmitted from neighboring parts. Both of these processes may be properly included under the general term of chemotaxis or toxic leucocytosis.

The first proposition has a typical exemplification in the case McHardy has placed on record, in which sudden enlargement of the lacrimal glands resulted from excessive indulgence in grief. Lagrange has reported a case of temporary enlargement of these glands due to the perverted metabolism of the menstrual period. We also know that the antrum may secrete a fluid so irritating that it will cause swelling of the Schneiderian membrane and excoriation of the nostril and lip.

The second proposition is amply demonstrated, as I have previously intimated, by the fact that the fluid contents of the accessory sinuses (chiefly antrum) may be absorbed by the lymphatic capillaries and carried to these contiguous glands. In confirmation of this view I can recall having seen a case of chronic, indurated lymph node of the cheek that had been diagnosed sarcoma by several competent surgeons. It promptly and spontaneously disappeared after a nasal operation that restored antral drainage and free breathing. Whether this lymphoid hyperplasia was caused by a bacterial infection or by the absorption of an irritating lymph fluid

was difficult to determine. That it was not sarcoma was convincingly demonstrated by its rapid and complete resolution.

I have previously noted the respiratory disturbances which have been present in the majority of the cases reported, and which require our careful consideration as ætiological factors. The relation of suboxidation and disturbed metabolism to these glandular enlargements is a vital one. My own cases showed marked interference with respiration and greatly lowered oxidation. Both patients were confirmed mouth breathers, and suffered from antral discharge. Excision of the tonsils removed the respiratory interference, and resolution of the enlarged glands quickly followed. Although Kümmel made a careful examination of nasal mucous membrane clippings in his case of hypertrophic rhinitis, the result of his study was negative. He was, nevertheless, greatly impressed by the clinical fact that whenever the nasal obstruction and asthmatic attacks become more pronounced a recurrence of the glandular swellings soon followed. Per contra, in my patients, involution of the enlarged glands was promptly established as soon as the respiratory obstructions were removed. These are significant facts worthy of our most careful thought. The conviction is forced upon us that a careful examination of every case of Mikulicz's disease would probably reveal some lesion of the respiratory tract which had not been reported, either through inattention or through lack of special knowledge on the part of the observer.

Finally, we should bear in mind the ætiological element of hereditary or racial predisposition to lymphatic dyscrasie, which factor has been most pronounced in the cases so far reported in America, all of whom were members of the negro race.

PATHOLOGY.—The pathology of this disease is obscure. The histological picture has not been painted in the clearest colors, nor are the microscopic details as distinct as they should be. The macroscopical examination of the section of an extirpated gland made by Mikulicz showed enlarged normal gland structure imbedded in a loose mass of pale, yellowish red tissue of fatty consistency, but very poor in bloodvessels. The microscope revealed this mass to be an enormous infiltration of small, round cells into the interstitial tissue. In this mass were grouped the apparently unchanged acini, which seemed to be pushed or torn apart by the new tissue. In certain areas a portion of the normal gland had been choked out by the engorgement. I will quote Mikulicz's own pithy description: "The microscopic examination shows that the gland parenchyma proper plays a completely passive rôle. The enlargement is produced solely by the enormous small cell infiltration of the interstitial connective tissue." He asserts that the preservation of the capsule of the gland, and of the interlobular septa, forbid a diagnosis of typical sarcoma, the small cell infiltration histologically resembling most nearly the lymphadenoid tissue of true lymphoma.

Fuchs examined the nodular growths in his case and found the glandular elements absent, but the avascular texture of lymphoma present. Raymond's case showed lymphoid tissue with areas of amyloid degeneration. Adler found what he diagnosed

as small cell sarcoma, but complete resolution occurred under arsenic. The patient reported a "perfect cure" at the end of four and a half years, although he continued to take the arsenic for some time as a preventive. Mikulicz pertinently remarks that this is not the usual behavior of sarcoma. In the case of Arnold-Becker there were dense accumulations of lymphoid elements imbedded in a delicate reticulum, with here and there a stronger connective tissue band, resembling completely a type of lymph follicle. These tumefactions were declared to be lymphadenomata. Power found hypertrophy of the interstitial web, but the gland substance was unchanged. Tietze noted entire absence of any glandular web, but the presence of a very spongy web of connective tissue, which was thickly permeated with small, round cells. Osler's case showed that the lacrimal glands had been replaced by fibrous tissue. No microorganisms were discovered in any of these cases.

Kümmel examined the salivary glands extirpated by Mikulicz and made a most elaborate report. Macroscopically he found them very soft, marrow-like in consistency, intensely white, and poorly vascular. The microscope showed a lymphoid trabeculum lacking in connective tissue fibres, imbedded with densely pressed round cells and lymphocytes poor in protoplasm. He formulated two alternative propositions: 1, The lymphoid proliferation may start at the acinus, the disease agent entering through the efferent duct of the gland, and forming a lymph follicle around the acinus; 2, the lymphoid web might also develop itself from the bloodvessels, this cell poor web thus representing the germinating centre. He later abandoned these theories as hypothetical, because of the slight evidence in their favor, and further acknowledged that the microscopical findings had often proved to be unreliable. He believed that lymphoma had an ectogenous origin, while leuchæmia and pseudoleuchæmia were hæmatogenous. He suggested that instead of leucocytosis of the lacrimal and salivary glands, the synonymous designation of "achroocytosis" should be adopted. As, however, this glandular enlargement is due to a lymphatic hyperplasia from leucocytic infiltration, I think we should accept the name "lymphoma" as more distinctly descriptive of this tumefaction.

DIAGNOSIS.—The diagnosis of Mikulicz's disease should not be difficult. I have previously noted the characteristic facial appearance, consisting of ptosis of the temporal half of the upper eyelids, broad parotid swellings as in mumps, and tumefactions in the floor of the mouth. As the lacrimal and salivary glands are usually affected in pairs, the symmetrical character of their development should be emphasized as a diagnostic sign.

A differential diagnosis must be made between lymphoma and the glandular swellings of leuchæmia and pseudoleuchæmia. The freedom from the hæmic dyscrasie of the latter lesions, the nonparticipation of other lymph glands, and the absence of enlarged spleen, liver, or kidneys should decide the diagnosis in favor of lymphoma. Physical weakness, emaciation, and pyrexia are seldom present in a case of lymphoma, while total extirpation of the glands is not followed by re-

currence. Enlarged tonsils are usually antecedent, and not developed synchronously, as may happen in pseudoleuchæmia. Ptechia, hæmorrhage, and cedema are also manifestations of the latter disease. In the opinion of von Brunn, there is no reason for segregating diseases that are only distinguished by degrees. He believes that leucocytic infiltration of these glands is the first stage, leuchæmia the second stage, and pseudoleuchæmia the final stage of one continuous pathological process. This extreme view, however, is hardly sustained by the recorded facts, although there is some ground for his belief. We know that the blood picture presented by these radically divergent diseases, may vary from normal to almost complete disorganization. And yet the enlarged lacrimal and salivary glands seen in leuchæmia and pseudoleuchæmia show but little difference, either clinically or histologically, from the true lymphomata of Mikulicz's disease. The well known cases reported by Dunn and Derby typically illustrate the similarity of the facial characteristics. In fact, there are those who assert that a typical case of Mikulicz's disease can occur synchronously with these hæmic disorders, and, as it were, independent of them.

The malignant neoplasms may also complicate the diagnosis, especially lymphosarcoma. The microscopical examination of these glands has proved to be unreliable in several of the cases reported, the subsequent involution demonstrating the benign character of the tumor. This was notably true in Adler's case, where arsenic caused complete retrogression, in Mikulicz's case where the unoperated tumors underwent resolution, and in the case of Frost, where one lacrimal gland was extirpated and the other disappeared spontaneously and permanently while awaiting the microscopic report of "sarcoma." Lymphosarcoma may or may not be bilateral, and is rarely primary in this location. It rapidly invades the surrounding tissues, spreads by metastasis, and when extirpated quickly recurs. Superficial cutaneous varicosities may form, and the skin may adhere and ulcerate. Carcinoma occurs but seldom, and is generally secondary to some initial growth elsewhere. It is usually nonsymmetrical, invades the surrounding tissues, and is accompanied by pain and cachexia.

Tuberculous adenitis can generally be excluded by Koch's tuberculin test. As a rule, the attack is not bilateral and other foci of infection may be found. Sooner or later there is a tendency to periaidenitis, and suppuration may develop. Syphilitic adenitis can be differentiated by the history, the symptoms, and the therapeutic test. The glandular swellings may be unilateral. The additional evidence of enlarged cervical, epitrochlear, or inguinal glands will help to confirm the diagnosis.

These two diagnostic possibilities have probably interfered most with the isolation of this disease. Abadie and de Lapersonne were both dubious about the tuberculous origin of their cases. Osler first inclined to hereditary syphilis in his case, although there was neither interstitial keratitis nor dental nothing present. Complete involution of the glands occurred during an intercurrent attack of pleurisy. The patient's death from tuberculosis two years later suggested a tuberculous origin, but the

inference could not be substantiated. Posey's case was diagnosed as hereditary syphilis, because it yielded to potassium iodide after a year's treatment. This does not necessarily confirm the diagnosis, as the same drug is useful in Mikulicz's disease. Stieren has reported an interesting case of supposed tuberculous dacryoadenitis which his own careful tests showed was absolutely free from tuberculous infection. These are all typical examples of Mikulicz's disease, occurring in negroes, and have been included in the reported list.

In rare instances the occurrence of lipoma of the lids has obscured the diagnosis. As both lids are usually involved, and the tumor is not so hard as lymphoma, there should be no difficulty in differentiating this condition.

PROGNOSIS.—The prognosis is favorable, although the course of the disease is very chronic and liable to relapse. Some cases, like those of Adler and Bronner, have required continuous treatment for many years in order to maintain convalescence. Although the swollen glands may cause marked physical discomfort, no fatal issue has so far been reported.

TREATMENT.—The therapeutic agents that have been advocated in Mikulicz's disease are arsenic, the iodides, and pilocarpine. Of these, arsenic has had the greatest measure of success, the majority of cases yielding promptly to the internal administration of Fowler's solution. Many patients, however, are intolerant of its use in doses sufficiently large to influence this disease. Mikulicz, Adler, Axenfeld, Fuchs, Kümmel, and others have reported success in some cases and failure in others. Bronner records relief in his case, but a relapse when its administration was stopped. Its therapeutic value lies almost wholly in its ability to increase the oxidation of the blood, which, again, would suggest a certain underlying relationship between this disease and leuchæmia or pseudoleuchæmia.

The iodine preparations have been utilized successfully in some cases. Their activity depends upon an alternative effect on the lymphatic system, which in turn tends to increase the oxidizing power of the blood. Haltenhoff, Raymond, Horner, Schefels and others report success in their cases, from the use of iodide of potassium, and from syrupus ferri iodidi, the latter having been administered to children. Lugol's solution should exert the same specific action in this disease that it yields in exophthalmic goitre.

Pilocarpine has been employed by Mikulicz and others, but without marked success, notwithstanding the fact that it possesses a decided lymphagogue effect. Although apparently not as valuable as other remedies have proved to be, it should still be kept in mind as a therapeutic reserve.

In this connection the administration of thyroid extract in small doses (gr. j to v, t.i.d.) should prove to be a most valuable therapeutic suggestion, as the disturbance in metabolism, the suboxidation, and the katabolic stasis, all indicate the employment of such a remedy.

The tentative suggestion of Kümmel, that since intercurrent diseases cause retrogression of the enlarged glands it might be advisable to make an inoculation of such a disease for its therapeutic ef-

fect, does not merit our approval, as these results have not been permanent. All such cases of involution have shown recrudescence soon after convalescence was established, except those in which death intervened.

The application of the x rays has had a moderate degree of success in some cases. Fittig, von Brunn, Ranzi, and Pfeiffer have recorded good results from their use, while Cutler has noted their failure. Like arsenic, therefore, the x rays are useful in some cases, and of no value in others. I will quote Ranzi's views on this subject: "Next to internal medicines, we possess in the x rays an efficient remedy for the reduction of the gland tumors, as our case shows. This applies particularly to the parotids, where, as previously mentioned in the history, operative measures are contraindicated. A favorable influence of the x rays on the salivary and lacrimal gland tumors of Mikulicz's disease has previously been mentioned in only one case (Fittig). In the case treated by von Brunn, complicated with pseudoleuchæmia, the enlarged lymph glands were reduced to half their size by the x rays, but an irradiation of the salivary gland tumors was not attempted. It is not to be expected that the retrogression caused by the x rays means a lasting cure; in the course of years there were repeated small relapses in our case. But it always happened that the same shrinkage again occurred after short sèances. This intense effect of the x rays on the described tumors corresponds entirely with their histological composition. We know, through the experiments of Heinecke on animals, as well as through the clinical knowledge of leuchæmia, that the x rays possess an elective action on the lymphatic tissues, and that very small doses lead to greater destruction of the lymphocytes. In the same way also in cases of Mikulicz's disease (which in their essentials resemble a local hyperplasia of the lymphatic tissues occurring normally in the salivary glands) the prompt involution of the gland tumors through irradiation can be explained."

Operative measures may be indicated in certain isolated cases. Extirpation of the enlarged glands has been practised by many, including Mikulicz, Kümmel, Gayet, and others, but not with any degree of success. Partial excision has been followed by renewed growth in the remaining portion, while total extirpation has been successful in preventing recurrence only because all glandular elements have been removed. The remaining glands have shown a more rapid growth on this account. We should bear in mind the important fact that the total destruction of these glandular functions may bring discomfort and possible disaster to the patient. On the other hand, if the glands are so large that their encroachment is distinctly harmful, then they must be extirpated. This, however, should only be considered as a *dernier ressort*. The operation of extirpation, especially of the parotids, is a difficult one, and often attended with considerable danger.

As previously pointed out, the usual treatment of this disease has for its objective aim the stimulation of lymphatic action and the increase of systemic oxidation. The correction of all obstructive respiratory lesions is, therefore, a therapeutic suggestion distinctly in line with this purpose. The

fortunate results in my cases demonstrated this fact beyond a doubt. Respiratory obstructions should, on this account, be removed with promptness and good judgment, so that free nasal breathing may be quickly reestablished. Restoration of this physiological function tends to increase systemic oxidation, to encourage the evaporation of sinus secretions by the mechanical passage of the inspired air through the upper chambers of the nose, and to promote free drainage of the antrum. These retained fluids, as we have seen, may become either a nidus of bacterial infection or a cesspool of toxic secretions. Enlarged tonsils and adenoids should, therefore, be promptly removed, and swollen inferior turbinates should be reduced by linear cauterization, while obstruction of the upper air passage by a flabby or enlarged middle turbinate should call for its early excision.

RECAPITULATION.

In closing I desire to emphasize a few of the more important points by giving a brief résumé of the statements recorded in the paper.

1. Careful differentiation of the symptom complex described by Mikulicz demonstrates that this disease is a pathological entity, *sui generis*, and not associated with any systemic disease.

2. The syndrome of symmetrical enlargement of the lacrimal and salivary glands is sufficiently characteristic to be accepted as pathognomonic of Mikulicz's disease.

3. The enormous lymph cell infiltration into the interstitial tissue, and the relative passivity of the gland structure, demand that this tumefaction shall be classed as true lymphoma or lymph tumor, as distinguished from adenoma or tumor of the glandular substance.

4. As no specific bacteria have been discovered, either in the glands or in the blood, the pathogenesis is probably chemotactic, thus causing a localized toxic hyperleucocytosis in the affected glands.

5. Toxic fluids that are chemically irritating are probably absorbed from the accessory sinuses (chiefly antrum) and transmitted through the lymphatic capillaries to these contiguous glands.

6. Respiratory obstruction not only hinders the evaporation and drainage of these sinus secretions, but also causes suboxidation and other disturbances of metabolism. It should, therefore, be considered a true ætiological factor.

7. The diagnosis of tuberculous adenitis and of lymphosarcoma has been repeatedly proved wrong by the spontaneous involution of the lymphomatous glands.

8. The glandular enlargements of leuchæmia, pseudoleuchæmia, syphilis, lipoma, and carcinoma are so characteristic that they should easily be differentiated.

9. The course of Mikulicz's disease is chronic, but the prognosis is favorable, with a tendency to relapse.

10. The treatment aims to improve lymphatic action and systemic oxidation. Arsenic, the iodides, pilocarpine, thyreoid extract, and the x rays have each shown some field of usefulness. All respiratory obstructions must be promptly and thoroughly removed. Extirpation is rarely indicated.

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1625 WALNUT STREET.

TUBERCULOSIS AND PREGNANCY.

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That tuberculosis has a profound influence on the sexual life of the woman is well known. Menstrual disturbances manifest themselves in the vast majority of consumptives. Dysmenorrhœa is very frequent and in incipient cases the process is often prolonged to six or ten days, the loss of blood excessive, and the regularity is rather disturbed. In many cases, especially in the advanced stages of the disease, amenorrhœa is met with due to atrophy of the ovaries and uterus which is often found among tuberculous women. Similarly, during the menopause tuberculosis often displays some peculiarities. Hæmoptysis is very frequent and in many cases it tends to replace the menses, occurring as they do with regularity at the time when menstruation might have been expected. It is, however, noteworthy that in spite of the fact that this disease has such a profound influence on the sexual life of women, pregnancy takes place very frequently, hardly less often than in healthy women. The course of pregnancy usually does not differ to any important extent from the course observed in the average healthy woman, excepting that the tendency to miscarriage is somewhat stronger in the tuberculous.

On the other hand, the influence of pregnancy on the ætiology and course of tuberculosis is of great

importance. In former days medical men universally agreed that pregnancy renders the body of a woman immune to consumption and that those who were affected before the beginning of gestation are likely to suffer less from the ravages of the disease, or even be cured. Some, like Cullen, even went so far as to recommend marriage as a cure for tuberculous women. Other writers stated that they never saw a woman die from tuberculosis during pregnancy. These views were summarized in a prize essay by Dr. E. Warren published in 1857, from which I quote the following characteristic passages:

"Consumption may be arrested before it is fully developed or perfected by the deposition of tubercles. . . . The onset of phthisis in those predisposed to it—that is, before the disease has been confirmed by the development of pulmonary irritation, etc., and the deposition of tuberculous matter—is in direct conformity with an established law of nature, and that a denial of the fact involves the plainest principles of therapeutics in an interminable labyrinth of contradictions. . . . Pregnancy, coition, etc., are particularly desired by women affected with phthisis, which constitutes a *pointing of nature* toward a *remedy* for the evils by which the system has been invaded."

That this is not his individual view is seen from the large number of authorities quoted by Warren in that prize essay, all confirming the stated opinion. Hippocrates, Sydenham, Montgomery, Parr, Rokitsky, Clark, and many others appear to have held similar views on the salutary influence of pregnancy on tuberculosis.

During recent years this opinion has not been entirely abandoned. Many authors still assert that during pregnancy the symptoms of phthisis are abated and the patients feel comparatively comfortable. In a paper published as late as 1897 Dr. Townsend, speaking of the cases observed in the Boston Lying in Hospital, says that "during pregnancy the patient often seems better and the disease appears in abeyance," and that "Nature seems to put forth a supreme effort to suppress the disease during pregnancy and to make the labor easy and short, but after the child is born the disease advances at a rapid rate." This view is still widespread, but no one ventures to suggest that there is an antagonism between tuberculosis and pregnancy. In fact, of late it has become more and more evident that pregnancy and the puerperium have a very deleterious influence on the origin and course of tuberculosis; that many women in whom the disease was latent for years begin to manifest symptoms of progressive phthisis immediately after childbirth or even during the course of pregnancy.

My personal experience with large numbers of consumptives has shown me that pregnancy is a very important factor in the origin of tuberculosis in women, especially among the poorer classes, possibly because the latter are more often pregnant than their more prosperous sisters, as well as the overcrowding and poverty in which they live. Indeed, I have been impressed with the fact that a large

proportion of male consumptives give a history of comparative health, but that since they "caught cold" or had an attack of influenza some time ago their health has been failing, the cough persisted, and they have been losing weight ever since. With women such histories are less frequently obtained. In a large proportion of married women we elicit a history of a different kind. They have felt comparatively well up till their last pregnancy, when they began to cough, and during the last couple of months of gestation they even expectorated some blood; labor was normal or slightly tedious, and the condition of the newborn infant was not different from the average. During the puerperium, however, their cough was aggravated, they had some fever, nightsweats, and were rather slow in getting out of bed. In fact, they never recovered from the last confinement. Physical examination reveals pulmonary phthisis of any stage. A history like the following is quite frequently obtained:

CASE I.—Mrs. L., aged twenty-six, family history negative. Had scarlet fever and measles during infancy, but had been quite well till her marriage two years ago. Was delivered of her first child fourteen months after marriage. The pregnancy and labor gave her no more than the average amount of discomfort. The puerperium, however, was complicated by a moderate degree of fever, a slight cough, and occasional night sweats. Convalescence was rather tardy, the cough persisted, and her physician told her that she "caught cold" during confinement, but that it would pass soon. When I saw her, nine months after childbirth, she presented signs of consolidation of both apices and of a cavity in the left infraclavicular region.

Another quite frequent mode of onset of active pulmonary tuberculosis in women is illustrated in the following case:

CASE II.—Mrs. W., age twenty-nine; mother died of tuberculosis and a brother suffered from the disease. Had had a cough and occasionally blood tinged expectoration at the age of sixteen which persisted for about three years. The physician in Europe, where she was at that time, told her that she was in danger of her disease turning into consumption. She improved, however, after spending every summer in the country and eating considerable eggs, meat, and milk. At the age of twenty she emigrated to the United States, settled in New York city, and felt fairly well in spite of the fact that she lived in a tenement house in the lower east side and worked at tailoring in all kinds and conditions of sweatshops. She never coughed, nor had ever felt the need of consulting a physician in New York until she married two years ago and conceived fifteen months later. The course of pregnancy was normal during the first six months. During the seventh she began to suffer from great debility, dyspnea, and some cough. During the eighth month she also had an attack of hæmoptysis, which was quickly checked by her remaining in bed for two weeks. Labor was rather hard, the delivery was instrumental, due to dystocia and an anæsthetic was used. She was again anesthetized three hours after the termination of labor and her lacerated perineum was repaired. Although the local conditions hardly left anything to be desired, the wounds healed promptly and involution proceeded normally, yet she could not leave her bed for two months after delivery. A diagnosis of pneumonia was made by the attending physician, but the anticipated crisis did not come, and low fever kept up intermittently. When I saw her, ten weeks after delivery, she presented all the external appearances of phthisical cachexia, and she informed me that she had lost twenty-eight pounds in weight when compared with her weight before pregnancy. Physical examination revealed infiltration and softening of the left upper lobe, and infiltration of the right middle lobe.

I have observed that a large proportion of male patients discharged from sanatoria as cured or with the disease arrested soon have a relapse of the dis-

¹Edward Warren. Does Pregnancy Accelerate or Retard the Development of Tuberculosis of the Lungs in Persons Predisposed to This Disease? *American Journal of the Medical Sciences*, 1857, pp. 87-118.

²Charles W. Townsend. Phthisis and Child Bearing, *Boston Medical and Surgical Journal*, XXXVIII, pp. 391-2.

ease when they attempt to work at their previous occupation, especially when their vocation keeps them indoors for long hours daily. With women the prognosis of tuberculosis in those who underwent a thorough sanatorium cure is much better than in men; with them the cure is more lasting as long as they do not become pregnant. Many of the relapses in women can be traced to pregnancy and childbirth.

During the last three years I have paid special attention to the significance of pregnancy in the etiology of tuberculosis. I find that of 286 married women who were affected with phthisis, 107, or 37.4 per cent., stated that they never had any symptoms pointing to tuberculosis till they began to cough and lost flesh after childbirth. Sixty-nine, or 24.1 per cent., had either frequent "colds," "bronchitis," or even hemoptysis for longer or shorter periods, but got along fairly well until they conceived and were delivered of a child. Ever since, their cough became more and more annoying, fever, anorexia, and loss of flesh made their appearance, and sooner or later they were told that they were victims of tuberculosis. It appears that many cases of phthisis that run a chronic and benign course, including such cases in which the patients cough occasionally for a few weeks or months during the year, expectorate sometimes some blood tinged sputum in which tubercle bacilli may or may not be detected, and present physical signs of pulmonary tuberculosis, are often awakened from their dormant state by pregnancy. Ordinarily this condition lasts for years without giving the patients much discomfort. Their strength and vitality is, on the whole, not failing to any great extent; their appetite is good, and they keep their average weight, and during some periods even show a gain. In such patients the recuperative and protective forces are just as great, or even greater than the destructive. The prognosis is fairly favorable as long as there ensue no intercurrent acute diseases which may wake up the latent or encapsulated pulmonary lesion. Generally this occurs after an attack of acute disease, such as pneumonia, typhoid, pleurisy, and especially influenza. In women, in addition to these exciting causes, pregnancy, childbirth, and the puerperium often awaken latent tuberculosis into activity.

A study of recent literature on the subject shows that all those who have paid attention to the question have found pregnancy and the puerperium very dangerous to tuberculous women, or even to those who are predisposed to the disease. Grisolle pointed out the dangers of pregnancy as early as 1850,¹ and was rebuked by his contemporaries for his heresy, relying as they did on the old established notion that tuberculous women may be cured through pregnancy; or as Rozière de la Chassagne said: "Of two women who are equally affected the one who is pregnant will surely give birth to a child, while the other who is not pregnant is not so sure to pass through the process of gestation to a favorable termination."² Lebert also stated that pregnancy and the puerperium have a deleterious effect on three fourths of cases of tuberculosis and that the dis-

ease is usually progressing acutely and rapidly after childbirth.³ Of more recent writers, Jacob and Pannwitz show that among 337 consumptive women, eighty-four, or twenty-five per cent., have traced the origin or aggravation of their disease to pregnancy, labor, or the puerperium.⁴ Maragliano reports 385 phthisical women, 226 or fifty-nine per cent. of whom ascribed the beginning of the disease to pregnancy and childbirth.⁵ Deibel states that sixty-four per cent. of cases of tuberculosis were aggravated during pregnancy.⁶ Kaminer found that in sixty-six per cent. the effects were deleterious, in sixteen per cent. the pregnancy had no effect at all on the tuberculous process, and in eighteen per cent. the effects could not be ascertained decisively.⁷ Merletti⁸ found that fifty per cent., and von Rosthorn⁹ that seventy per cent. were aggravated as a result of pregnancy.

Further confirmation of the deleterious effects of pregnancy on the course of tuberculosis was furnished by experimental work of Herrmann and Hartl. Two groups of guinea pigs, pregnant and nonpregnant, were infected with tuberculosis through inhalation of tubercle bacilli. Detailed autopsies were made later and the results noted. They found that pregnancy had a rather deleterious influence on the process of tubercle formation, especially in cases in which the dose of bacilli was large. This deleterious influence manifested itself primarily in the rapid growth of the tubercles, early formation of bronchiectatic cavities which grow in size at a rapid rate, and also by earlier appearance of caseation.¹⁰

There are many tuberculous women who pass through pregnancy quite well. Some women with slight tuberculous lesions, limited to one or both apices, but who have no complications, such as cardiac derangement, genitourinary or intestinal tuberculosis, may pass through pregnancy and labor none the worse for the experience. Occasionally one meets with a case in which the patient even asserts to feel much better than before conception. But these cases are very rare. However, consumptive women who suffer from any of these complications, continuous or remittent fever, emaciation, etc., especially laryngeal tuberculosis, do not bear pregnancy well. It seems that pregnancy favors the development of laryngeal tuberculosis in those who have pulmonary lesions. The sexual relations of the larynx are well known. The change in voice at the onset of puberty, i. e., at the time of the development and maturation of the sexual organs, the effects produced on the voice by castration of the male, and the influence of menstruation on the voice of some singers, are all well known. W. Gross-

¹ *Annales sur Gravidité*, iv, p. 474; see also *Traité pratique des maladies respiratoires et tuberculeuses*, Paris, 1850, p. 722.

² P. Jacob and G. Pannwitz, *Entstehung und Bekämpfung der Lungentuberculose*, 1901.

³ Sulla opportunità di interrompere artificialmente la gravidanza in caso di malattie interne, *Gazzetta degli Ospedali*, xiv, p. 1102 and 1225, 1859.

⁴ L. Deibel, Kann Phthisis als Indication zur Einleitung der Fehlgeburt gelten? *Inaugural Dissertation*, Heidelberg, 1899.

⁵ S. Kaminer, *Deutsche medizinische Wochenschrift*, 1901, No. 35, p. 282.

⁶ C. Merletti, *Tuberculose et gravidanza, Archivi italiani*, 5, 1900, 1901, 1902, 1904, 15, No. 4.

⁷ H. von Rosthorn, *Wiener medicinische Wochenschrift*, 1900, 1.

⁸ Herrmann and Hartl, Der Einfluss der Schwangerschaft auf die Tuberculose der Respirationsorgane, *Zeitschrift für Hygiene*, lxx, part 2.

⁹ A. Grisolle, Des influences que la grossesse et la phtisie ont sur le développement et l'évolution de l'une ou l'autre, *Archives générales de médecine*, xvi, p. 1, Paris, 1850.

¹⁰ Rozière de la Chassagne, *Manuel des pneumologues*, Paris, 1920.

kopf²³ has recently shown that pregnancy, labor, and the puerperium produce certain changes in the upper air passages, and he believes that this is the reason why so many tuberculous women suffer from laryngeal complications. It is well known that those who before the onset of pregnancy have suffered from laryngeal tuberculosis are practically hopeless as regards the ultimate prognosis. Even in cases in which the pulmonary lesion is insignificant or stationary a laryngeal complication combined with pregnancy will ultimately kill, as has been shown by Kuttner²⁴, Juracz²⁵, von Rosthorn²⁶, Freudenthal²⁷, and many others and nearly all urge artificial abortion as the only means which may save the life of the mother. The only contraindication to this radical course is advanced pregnancy and when the lesion in the larynx is rather extensive and there is hardly anything to gain. Under the circumstances the interests of the infant demand primary attention.

Many authors have urged premature interruption of pregnancy in all cases in which a positive diagnosis of tuberculosis is made. The fact that some tuberculous women bear pregnancy quite well, give birth to fairly healthy children which have good chances to develop as well as others provided they are not infected after birth, is by no means considered a contraindication to this radical course of treatment. It is, however, shown that the majority of tuberculous women, many of whom stand good chances of an ultimate cure, suffer from an aggravation of the disease during gestation or after labor. This is to be expected when we bear in mind the loss of blood, exhaustion, etc., during tedious labor which undermines for the time being the power of resistance of the mother and exposes her to the dangers of mixed infection. Then the effects of straining during labor, are to be borne in mind. Hanau²⁸ shows that autopsies on tuberculous women who died soon after labor have disclosed, in addition to the old pulmonary lesions, also new depositions of tubercles, which could only be ascribed to auto-infection by aspiration of the contents of cavities brought about by the violent respiratory movements during labor. Artificial abortion is likely to save the woman from these deleterious effects of advanced pregnancy and labor. Maragliano²⁹, Hamburger³⁰, and many others therefore urge that as soon as a positive diagnosis is made of tuberculosis in a pregnant woman abortion should be induced, and they show that the results are excellent³¹.

Coming in contact with a large number of tuberculous women of the poorer classes I am under the impression that this radical course is not feasible in the vast majority of cases. The richer class of tuberculous women are in this regard also better situated than the poorer class. In addition to the better care they can receive at home, the private

sanatoria are also open to them, and many of these institutions report fairly good results with pregnant women who went through pregnancy, labor, and the puerperium in the sanatoria, and were ultimately discharged as cured. Poor women, on the other hand, are not admitted to public sanatoria in case they are pregnant, while at home the surroundings are not of a nature to help along in the direction of a cure, especially when pregnancy is complicating the disease. In some cases in which I advised this mode of treatment to poor women, it could not be carried out for many reasons, especially social and economic. I am convinced that in cases of tuberculosis in women there is a wide field for prevention which has been sadly neglected. Every tuberculous woman must be impressed with the dangers of pregnancy and labor and given detailed instruction in the prevention of conception. They must be informed that public sanatoria are closed to them as soon as they become pregnant. Female patients discharged from sanatoria must be told of the dangers of relapse as soon as pregnancy ensues. That this is often neglected is evident, as we find that most patients are ignorant of these facts. I have seen a woman who was permitted to visit her home for one day during a course of treatment in a public sanatorium. A few months later she confided to the superintendent that she became pregnant during the day she visited her husband. Such things could not happen, if the patients were well informed on these dangers.

Artificial abortion is only indicated in cases of laryngeal tuberculosis, and in some cases of tuberculosis which show a tendency to run an acute course, or are complicated with tuberculosis of organs other than the lungs. In the average case the best we can do is to warn our patients of the dangers of pregnancy, and when they do conceive in spite of our warning to pursue an expectant course. In advanced cases there is nothing to gain by abortion, and as the child is usually quite healthy its interests are of primary importance.

1337 MADISON AVENUE.

THE INFANCY OF THE PRACTICE OF MEDICINE AND SURGERY.

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II.

MEDICINE AND SURGERY AMONG THE ANCIENT EGYPTIANS.

It is a truism that the origin of the practice of medicine was concomitant with the birth throes of civilization. The most antique civilization of which we have any positive knowledge is that of the land of the Pharaohs. The Egyptians, unlike other races of vast antiquity antedating the Latins and Hellenes, bequeathed to Time imperishable written, sculptured, and architectural records, of their manners, customs, and of their contributions to the panoply of the ages.

Herodotus, "of Halicarnassus," as he styles him-

²³Archiv für Laryngologie, xxi, part 3.

²⁴Kuttner. Laryngoscopie, 1907, p. 938; Archiv für Laryngologie, 1902.

²⁵Juracz. Monatsschrift für Geburtshilfe und Gynäkologie, xxii.

²⁶von Rosthorn. Wiener medizinische Wochenschrift, 1909, No. 1.

²⁷Freudenthal. Zeitschrift für Tuberkulose, 11, part 5, 1907.

²⁸Hanau. Zeitschrift für klinische Medizin, xii, 1887.

²⁹Maragliano. Loc. cit.

³⁰Hamburger. Berliner klinische Wochenschrift, 1902, No. 45.

³¹For details see C. Pradella, Zur Frage der künstlichen Unterbrechung der Schwangerschaft wegen Lungenschwindsucht, Inaugural Dissertation, Zurich, 1906.

self, relates in his history that before the reign of good king Psammetichus, the Egyptians believed themselves to be, with the probable exception of the Phrygians, the most ancient race of mankind. Psammetichus, according to the chroniclers of his age, seems to have been a savant of brilliant parts and with an inordinate, sociological curiosity. To ascertain which of the aforementioned races was the oldest, king Psammetichus tried an experiment. To his credit be it said that the experiment was based on common sense.

The regal sociologist took two plebeian infants and gave them to a herdsman to be brought up. The herdsman was strictly forbidden either to speak, or to permit any one to speak, to his wards. They were to be kept in a sequestered cottage. During the day goats were to be admitted so that the infants would be fed regularly. Herodotus says that Psammetichus's object was to discover, after the indistinct babblings of infancy were over what words the infants would utter first. The herdsman obeyed the king's orders for two years. At the end of that time, on his opening the door of the cottage one day, the goat reared infants ran up to him with supplicating hands and distinctly said, "becos." Psammetichus, so local traditions had it, then made inquiry as to which people employed the word "becos." He discovered that it was Phrygian and meant "bread." When the result of the experiment became known the Egyptians magnanimously yielded their claim and admitted the greater antiquity of the Phrygians.

Herodotus, in order to impress us with his historical exactness and with the truth of this tradition, says that he traveled to Memphis and there interviewed the priests of Vulcan. To make doubly certain he also went to Heliopolis and Thebes for additional evidence. Parenthetically he observes, that the Heliopolitans had the reputation of being the best skilled in history of all in Egypt. This is not to be marveled at when we consider that Heliopolis was the focus of Egyptian learning—the seat of the University of Egypt. The site of Heliopolis, "the abode of the sun," still exists, marked by wondrously well built walls. A granite obelisk has been found there inscribed with the name of Osirtasen I., who, probably flourished some four thousand years ago.

A Hellenic characteristic was a sovereign contempt for the institutions and customs of every known country. Herodotus does not seem to have shared in this contempt. In his writings concerning the Egyptians he unreservedly praises their high degree of civilization and culture. In his opinion no country then known possessed so many wonders, natural and artificial. They were the first, he tells us, to divide the year into twelve parts; the first men, to bring into use the names of the dozen gods—(Juno, Vesta, Minerva, Ceres, Diana, Venus, Mars, Mercurius, Jupiter, Neptune, Vulcanus, and Apollo) which, the Greeks later tagged on to their gods; the first people, to erect altars, images, and temples in honor of these gods; the first to engrave on stones the figures of men and animals.

The daily life of the early dwellers in Egypt was a source of great interest to the historian from

Halicarnassus. They impressed him as a scrupulously clean people. They wore linen garments, which they were especially careful to have always freshly washed. They bathed twice every day and night in cold water. They were the only people in the world who practised circumcision, because, says he, they considered it better to be cleanly than comely. (Just where the comeliness came in, is to our modern aesthetics, rather dubious). During each month, for three successive days, they "cleansed" the body by means of emetics and enemata. This was a prophylactic procedure to maintain their health. They thought that all the ills which flesh was heir to were brought about by deleterious ingredients in the food ingested. Next to the Libyans they were the healthiest people in the world. Every priestly doctor specialized in one disease and in no other. The land was full of priests who "cured" diseases of the eyes, intestines, etc.

As a matter of fact it is exceedingly doubtful if the Egyptians were as healthy a race as Herodotus tells us they were. The supply of doctors must have equalled the demand. All the Egyptian medical papyri which have been discovered up to date indicate by their wealth of prescriptions that leprosy, elephantiasis, affections of the eyes, and a host of other diseases were of very common occurrence.

On the death of a local politician, or of his relatives, the women of the immediate family covered their heads and faces with mud. They then left the corpse indoors, wandered through the thoroughfares of the city, beating a tattoo on their bare breasts. All the female relations joined the mourners (in their mud cure for grief) with loud lamentations. The men likewise chastised themselves apart from the women. The grief stricken relatives, after a certain time had elapsed, bore away the body of the defunct to be embalmed, according to his station in life and at the bankers. The most perfect process of embalming, as described by Herodotus, was as follows:

The embalmers first took a hooked piece of iron and with it drew out the brain through the nose. (This must have been a practice both extremely difficult and tedious.) Any remaining "débris" was cleansed out with drugs. The abdomen was then opened with a sharp Ethiopian stone and the contents washed thoroughly with palm wine and an infusion of aromatics.¹ The abdominal cavity after being filled with the purest cassia, was sewed up. The body was placed in natrum for seventy days. After the expiration of this time the body was washed and wrapped from head to feet with bandages of fine linen cloth smeared with gum. (Egyptian mummies have been found with these very strips of linen nearly a thousand yards in length. The mummies, likewise, show on the part of the embalmers, a truly remarkable proficiency in bandaging.) The body was returned to the relatives, who placed it in a wooden case specially prepared and stood it upright against the wall of a sepulchral chamber.

¹The organs of the body were always embalmed separately. They were put in jars—"Goropi"—near the heart. The jars, four in number, were dedicated to the children of Horus, the geni of the dead. The stomach and large intestines were dedicated to Amaet; the small intestines to Hapi; the lungs and heart to Tuamvetf; the liver and gallbladder to Kebhsenuf.

This was the most costly style of embalming. If, however, persons desired something cheaper, cedar oil was injected into the corpse, the rectum at the same time being stuffed to prevent the exit of the oil. The body was then laid away for the usual number of days. At the end of the prescribed time the cedar oil was allowed to make its escape, bringing with it the stomach and intestines in a liquid state.

EGYPTIAN DIVINITIES.

The gods of Egypt were legion. No other country possessed such a galaxy of multifarious and multipotent deities. The habitat and sphere of action of a god was purely local in the majority of cases. The god of one locality was often without honor, or devotees, in another. If, however, his fame spread far and wide from his native town, pilgrims soon worshiped at his shrine, with appropriate contributions as admission fees. Thus, Osiris, one of the great Egyptian divinities, husband and brother of Isis, was at first a third rate god living his somnolent life somewhere in Abydos. Later, probably with the influence of his very influential better half, his fame spread through the whole of Egypt. The worshippers of every god were very faithful and sought to ingratiate themselves by presents of jugs of beer, loaves of bread, oxen, geese, and cattle. In modern parlance these offerings were a form of "graft" subsisted on by the attendants, the priests, of the temples.

Isis was considered the preeminent deity. Her name, say some authorities, was derived from the Coptic, "Isi," denoting plenty. At various times in her career Isis was called Ceres and Pallas; also, the goddess of the moon and of wisdom. Queen Isis had the following modest inscription engraved on the pavements of the temples dedicated to her at Memphis: "I am the all that was, that is, that will be, (in gamin talk she was "it") no mortal can raise my garment" (Plutarch *de Iside*.) Isis, says Sprengel, was without doubt the moon, through whose periodical changes the periodical return of various diseases were supposed to be influenced. For this reason special medical powers were ascribed to her. She was, in fact, supposed to have been the author of the "science" of medicine. She engraved her monumental treatise on pillars of stone. The Egyptians believed that Thoth (Hermes) was the inventor of the arts and sciences in general, but that Isis invented those which were essential to life. Diodorus, an intense admirer and follower in the footsteps of Herodotus, visited Egypt four hundred years after the latter and informs us that the Egyptians thought Isis had rendered them great services in the healing art through curative methods which she revealed to them, *viz* the priests; that, having become immortal she took supreme pleasure in the religious services of men and occupied herself especially looking after the health of her devout followers. "This is proved," tells us Diodorus (who, by the way, was a bit of a Münchhausen) "not by fables, as among the Greeks, but by authentic facts; in reality all the nations of the earth bear witness to the powers of this goddess in curing diseases." In dreams she revealed to those who suffered the best remedies, and by following her advice persons quickly recovered.

Other divinities of quite some renown in the healing art were Horus, son of Isis, and Serapis. The latter had twenty-four temples erected to him at Canopus, Alexandria, Thebes, and other places. He was a popular god withal, especially famous among foreigners. By the Greeks he was called Osiris, Jupiter Ammon, Pluto, Bacchus, and Æsculapius.

In sculptural representations the Egyptian gods were often characterized by a hirsute appendage hanging from the chin and some by a sceptre held in the hand. This sceptre was called "tam." It was the emblem of power.

The Egyptians had such a high regard for their deities that they thought they could worship them better by endowing them with the shapes of animals. Isis was often represented with a cow's head in place of her own, and the goddess Pecht (Pacht), a lesser luminary, with a cat's. Great value was attached to animals in the environs of the Nile on account of their scarcity. In time certain animals became sacred as the living representatives on earth (like the priests) of certain gods, and as such, received homage. The white bull Mnevis, in Heliopolis, was a shining example of a bovine deity. Goats, dogs, cows, birds, snakes, apes, crocodiles, the hippopotamus, and especially cats were honored and prayed over. The killing of a sacred animal was punished more severely than the murder of a human being. A remarkable fact to reflect upon is the extreme barbarism of the Egyptians in this regard and their high degree of civilization in others. Truly, a paradoxical people! Plutarch (*de Iside*) taking the stand of the apologist, says that the religious rites of the Egyptians were not founded on fable and superstition, but with the end in view of promoting the morality and the happiness of the devout. With all their deities the Egyptians were neither a happy nor a very moral people.

The sacred animals were fed, bathed and dressed, by persons of both sexes appointed for the purpose. The employment was considered an honorable one and passed from father to son. The attendants, according to 1909 standards, must have been most undesirable citizens to meet in polite society. But not so in the Egypt of long ago. No one declined to mother the animals or felt ashamed openly to fulfil the office. The animal valets on special days marched in procession through the towns with the distinguishing mark of their occupation. Being known by a peculiar emblem belonging to each, the people perceived on their approach, of what animal they had the care, and showed them respect by bowing to the ground (Diodorus). When a child recovered from a serious illness the parents would offer prayers to the local deity and then shave a portion, half, or the whole, of the child's head. They put the hair into one scale of a balance and money in the other, until the latter outweighed the former. They then gave the money to the person who took care of the consecrated animal.

An animal that was sacred in one region often was hunted to death in another. The hippopotamus was only worshiped in Papamia; the crocodile in Thebes. Clement of Alexandria was not very much impressed either by the Egyptian gods or

their worship. If you enter a temple, says he, a priest advances with a solemn air, droning a monotonous chant in the Egyptian language; he raises a veil to let you see the gods, and what do you see? asks Clement scornfully. Only a cat, a crocodile, a snake, or some other noxious animal, as the case may be. The gods of the Egyptians in animate forms appear to him and he is disgusted. "They are but wild beasts wallowing on purple carpets." Juvenal, likewise, in his fifteenth satire, lambasts the Egyptian's religious ideas, thusly:

"Who knows not, Bithynian Volusius, what monsters
Mad Egypt can worship? This place adores a crocodile;
That fears an ibis saturated with serpents.

There a seafish, here a river fish, there
Whole towns worship a dog, nobody Diana.

O holy nation, for whom are born in gardens
These deities. . . ."

After the death of a sacred animal—loudly lamented no doubt—the priest embalmed it with due honors, per process described by Herodotus. Special rooms in the temples—even special cities—were used as recreation places for sacred animals during their life.

The Egyptians occasionally lost faith in their deities. In fact the life of the latter was not one long, glad song, for, whenever any great drought or pestilential disease occurred it was customary for the Egyptian priests to select some of the sacred animals to conduct them with all secrecy to a dark place and there to terrify them with threats for their notorious maladministration of affairs. If the god did not mend his ways he was secretly murdered!

The temples were really the first hospitals. The exact practices of the priests of physic there have always remained more or less of a mystery for the reason that foreigners were forbidden to enter the temples and those initiated kept their vows faithfully. The Egyptian and Hellenic chroniclers have little to say on this subject. The priests kept their methods of cure very secret and only imparted the "divine science" to those of their own caste. The practice of medicine was then in the hands of a trust as it were. For many years it was impossible for any foreigner to learn anything of medicine as practised by the servants of the gods. The first foreigners to whom this coveted knowledge was imparted were Thales and Pythagoras. Porphyrius, in his life of Pythagoras, says that before the latter left on his journey to Egypt, (where he remained for twenty-two years studying the sciences, including medicine), he begged Polycrates, the king of Samos, to give him a letter of recommendation to the Egyptian king Amasis, that the priests might initiate him in their secrets. Pythagoras received the letter but the Heliopolites, to whom he first addressed himself, sent him to Memphis. At Memphis, under some pretext, he was sent to the Thebans, who, out of fear of Polycrates, did not make any more excuses, but determined to frighten Pythagoras from his resolve by the imposition of excessive labors. But Pythagoras was not to be downed. He fulfilled all the requirements of the scheming priests and was initiated according to custom. Porphyrius says that this honor had never before in the history of Egypt been bestowed on a foreigner. Other wanderers from Hellas who

at different times sojourned in Egypt to absorb scientific lore were Homer, Dædalus, Democritus of Abdera, Euripides, and Solon.

The Egyptian practitioners, "theurgic priests," were magicians (supposed to be heaven inspired), who "cured" by prayers and incantations. Their assistants, the pastophori, used bathing, anointing, massage, and fumigations as curative measures. In both cases they employed special sacred ceremonies in honor of the god or gods invoked. ("Ipse sacerdos antequam det oracula, multa rite peragit sacrificia, observat sanctimoniam, lavatur; triduum prorsus abstinet cibo, habitat in secessu, jamque incipit paulatim illuminari, mirificeque gaudere." Iamblichus, *de Mysteriis Ægyptiorum*.)

The priests were, indeed, by all ancient accounts, a strange, motley crew, with heads and brows shaven. They never laughed and only met their brother professionals at festivals. The magician priests lived on the proceeds of their farming and on the voluntary offerings of the sick. The receipts of all the priests were put in a common treasury from which the pastophori, the nurses, received their remunerations. "Their profits (the priest's) are large; they eat the cooked offerings and receive every day many geese and much beef" (Herodotus). The same cannot be said, unfortunately, of the Gothamite physicians to-day. Their profits are *not* large, and they receive every day many "dead beats" and "much" book agents.

The priests derived their medical knowledge from the *Sacred Books*, forty-two in number, of which Thoth was supposed to have been editor and sole contributor. The last six volumes of his encyclopædia treated of surgical instruments, diseases in general and of the eyes. The other thirty-six volumes were divided into five classes, as follows:—1. The Two Books of the Chanter; (a) songs in honor of the gods (b) an exhaustive work pertaining to royal life and its duties to man and heaven. 2. The Four Astrological Books. 3. The Ten Books of the Hierogrammist, which treated of hieroglyphic art. 4. The Ten Ceremonial Books of the Stolistes, the officers who had the "job" to cleanse, feed, dress, and coddle the divine crocodiles, snakes, or hippopotami, as the case might be. 5. The Ten Books of the Prophets.

The practices and principles laid down in Thoth's system had to be strictly adhered to. Divine remedies could not with impunity be disregarded. Such disregard by a priestly practitioner with an original bent of mind was quickly rewarded with death. The results of such a system are obvious enough.

The priests evidently did not rely solely on divine advice. They often exposed their sick in the public highways. Pedestrians would stop and hold converse with the suffering mortals. If the inquisitive stranger had been similarly attacked, custom required him to advise the sick man and to hie templeward, there—on pillars of stone—to inscribe the remedies which had brought about his own cure. This recorded mobbish ignorance—a jumble of tribal superstitions—was kept with great care, especially in the temples of Vulcan at Canopus and at Memphis. The priests absorbed the "science" thus perpetuated and acted accordingly. Herodotus says a similar custom prevailed for

many centuries among the Mesopotamians and the Babylonians. The growth of medical "science" in Egypt must have been materially retarded as a result of this custom. Still, taken as a whole a system, fundamentally however faulty or fallacious, is better than none at all. What is significant is not the achievement but the attempt.

The priests were profoundly ignorant even of the rudiments of anatomy. This is surprising in view of the fact that the kings of Egypt, especially the Ptolemies, permitted dissection for the purpose of discovering the ætiologies of diseases. In an old papyrus still extant, the following interesting facts are given concerning the bloodvessels: The cranium of man has thirty-two "vessels" (arteries, veins, nerves?), which carry the "breath" to his heart; they give inspiration to all his members. There are two "vessels" to the "breast"; they give warmth to the lungs; to heal the latter one must make a "remedy" of flour of fresh wheat, herb haka and sycamore teput, make a decoction and let the patient drink it. There are two "vessels" to the legs; if any one has a disease of the legs it is because the "secret" vessel has taken the malady. There are two "vessels" to the "interior," to the arms, occiput, sinicput, eyelids, nostrils, and left ear.

In medicine the Egyptian practitioners were well acquainted with many diseases of the eye (especially ophthalmia), with leprosy, smallpox, erysipelas, dysuria, and hæmaturia.

Surgery as practised by the priests was rather original with them. Castration was performed by pounding the testicles with stones; on no account, for unknown reasons, was a knife used in this operation. Ancient writers fail to state just how long the patient survived this pleasant operation. For circumcision flint knives were used. Some writers contend that the Egyptian surgeons performed lithotomy. This is extremely doubtful.

The medical men had as complete a knowledge of physiology as of anatomy. They thought that up to the age of fifty, the heart of man gained in weight annually two or three drachms, but afterward lost the same amount. Death in the aged was therefore caused by a gradual atrophy of the heart.

Sir J. Gardner Wilkinson enumerates many drugs (from Pliny) which were known to the Egyptians. Laudanum (*Cistus ladaniferus*) was used for various purposes. From the fruit *Myrobalanum* (*Moringa aptera*?) an ointment was made. Cypros (*Lavsonia spinosa et inermis*) was cooked in oil to make the unguentum called cyprus; the leaves were used to dye the hair. Castor oil and the oil of bitter almonds, figs, and olives, were also known. "Homer attributes the glory of herbs to Egypt. He mentions many given to Helen, which caused oblivion of sorrow" (Pliny).

In the therapeutics of the Egyptians we find urine mentioned as a remedy for the eyes. This was especially efficacious if obtained from a wife faithful to her husband. Evidently faithful wives were at a premium and "affinities" flourished then as they do now. The use of urine as a remedy for the eyes is still prevalent I find, in general practice among many Jewish matrons of New York.

The excreta and the blood of various animals, especially of the lizard, were used as sovereign

remedies; also, swine's teeth, putrid meat, and the excretion of flies!

In an Egyptian papyrus, kept in the Berlin museum, the following can be read anent "diagnosis": Take the herb bededu-ka powdered and soaked in the milk of a woman who has borne a son. Let the woman eat it . . . if it is vomited she will bear a child but if she retains the herb she will not conceive. A somewhat similar receipt is furnished by Hippocrates (who should have known better): Take figs or the plant butros and the milk of a woman who has borne a boy and let the woman drink it; if she vomits she will bear a child and if she retains the herb she will not conceive. The Berlin papyrus gives another simple positive, diagnostic point, viz.: To know whether a woman will bear a boy or girl, it is only needful to steep some wheat and some spelt in water she passes; if the wheat sprouts she will bear a boy, if the spelt, a girl!

EGYPTIAN MEDICAL PAPYRI.

Our knowledge of the curative art among the ancient Egyptians, is mainly derived from the Hellenic writers and to a lesser extent, from the local scribes. The latter gentry left to posterity various papyri which have given the world intimate insights into the subjects of medicine and surgery as comprehended and practised by their contemporary priests. From time to time in the last one hundred years many of these papyri were unearthed by Egyptologists and preserved in the museums of London, Berlin, Leipzig, Turin, and Bulak.

The most famous papyrus is that bought and brought to the accident by Georg Moriz Ebers, author of many novels and an archaeologist and Egyptologist of considerable note. Ebers published an account of his purchase in 1875. He tells us that in the winter of 1872, while sojourning in the necropolis of Thebes, in the company of a friend, one Ludwig Stern, he struck up an acquaintance with a wealthy Arabian from Luxor. The Arab informed Ebers that he had in his possession and for sale, a papyrus roll with some images of Osiris which he had discovered between the legs of a mummy. He from Luxor asked an exorbitant sum. Ebers himself could not pay the requisite amount but was enabled to do so through the generosity of a millionaire traveling in Egypt. Ebers subsequently deposited his precious papyrus in the Leipzig University Library. The papyrus was written, according to Ebers, about fifteen hundred years B. C., and was the work of more than one author. The following diseases and the appropriate treatments are mentioned:—Diseases of the abdomen, rectum and anus, bladder and penis, heart and lungs, eyes, ear, nose, throat, scalp, face, teeth, tongue, skin, and blood.

In the treatment of these diseases nearly a thousand drugs and their preparations are mentioned. The doses were written in red ink. The unit of weight was supposed to be the drachm and that of volume, the tenet. The former was equal to about forty-eight English grains and the latter to about three fifths of a litre (Bolton).

The only papyrus discovered in recent years is that known as the Hearst Medical Papyrus. In the summer of 1901, a peasant brought a roll of papyrus to the members of the Hearst Egyptian Expedition, then in camp near Dar-el-Ballas. The

peasant stated that he found the valuable document in a pot in the excavated walls of a mud brick house cheek by jowl with an ancient cemetery. The roll was practically intact and was tied up in a native head cloth or "suga." The papyrus was declared to be by competent authorities of the same date as Ebers'. The following are some therapeutic measures culled from its hieroglyphic pages:

For sore eyes fresh dung of an ass, heated, laid on the eyes and bound with a cloth. For boils, the same. For sore eyes hara weed boiled in water. Hold the eyes in the steam. For headaches, henna dissolved in hot water and rubbed into the forehead, temples, and cheeks. For pains in the stomach, wormwood (seh) dried, rubbed to a powder and swallowed with a drink of water. To preserve the eyes of a child drop them (?) with verdegriis dissolved in water and to preserve an adult's, rub the edges of the eyes with kohl (antimony). A woman after childbirth is not to be touched, looked at, or spoken to, by one who has crossed the Nile; but if she does not recover she is herself to be ferried across the Nile and back again. (Reisner, Hearst Medical Papyrus, *University of California Archaeological Expedition*).

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1545 MADISON AVENUE.

SURGICAL TREATMENT OF ATROPHIC RHINITIS.

With Report of Cases.

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When a patient presents himself suffering with the symptoms of atrophic rhinitis we are too prone to treat him empirically, relying simply in the time worn cleansing and stimulating applications; taking up some new drug lauded by its makers as a specific, only to abandon it in disgust for a new cure, which in turn is as disappointing as those which have gone before.

The real trouble often lies in our own carelessness in making a diagnosis, and in the fact that we are apt to forget that those cases of atrophic rhinitis which are not due primarily to sinus infection, are practically always caused by some systemic condition which calls for constitutional treatment, rather than local applications.

Those cases due primarily to general constitutional disturbances comprise a very small proportion of the total number of sufferers, and they are not the ones which, as a rule, cause us the greatest amount of trouble. The fact that with all of the atrophy of mucous membranes and lower turbinates we so often find an hypertrophy of the middle turbinates sufficient to interfere with proper drainage from the ethmoidal and frontal cells, should make us in every such case institute a careful search to discover a focus of infection which can be relieved by surgical procedure.

The following are cases which occurred in the service of Dr. Imperatori at the New York Throat, Nose, and Lung Hospital, and are offered as typical examples of the prompt relief afforded by the institution of proper drainage, after the usual routine treatment by cleansing, stimulating, and bactericidal solutions had been faithfully tried without material benefit.

CASE I.—J. B., male; æt. 23, November 17, 1908. Patient complained of nasal discharge for many years past. There was marked atrophy and crusting. In order to be at all comfortable he had to wash out his nose two or three times a day. When discharge collected for any length of time there was a bad odor. There was some enlargement of both middle turbinates. Previous treatment had consisted entirely of cleansing solutions used at home. Treatment with the culture of lactic acid bacilli was commenced.

December 22d. Treatment had been faithfully kept up, but there was no improvement. A change was made to the local application of the silver preparations.

February 25th. The argyrol and silver nitrate solutions had not seemed to accomplish much. Crusts formed as badly as ever. Tip of left middle turbinate removed and ethmoid cells of this side opened and curetted.

February 26th. The operation of yesterday was repeated on the right side.

March 2d. Great improvement. No crusts. Discharge thin and easily controlled by home cleansing.

August 11th. Nasal condition continued good. Patient had no treatment except cleansing.

CASE II.—J. F., male; æt. eighteen years. Patient presented himself on March 11, 1909. He had had foul smelling catarrhal discharge for several years. Had been treated for atrophic rhinitis for several months with very little benefit. Examination showed mucous membrane dry and atrophic and covered with crusts. Both lower turbinates greatly atrophied. The crust formation was so extensive that almost complete casts of the nasal meat were at times blown out. Both middle turbinates were somewhat enlarged, and after the nose was thoroughly cleansed, there was visible a thick, purulent looking discharge coming from underneath the middle turbinates. The middle turbinate on the right side was partially removed, and the ethmoid cells curetted.

March 17th. The discharge on the right side was thinner than it had been, and the tendency to crust formation was decidedly less. The ethmoid cells on the left side were opened and treated the same as on the right.

April 29th. Discharge thin and free. No tendency to crust formation.

September 20th. The use of the cleansing solutions had been kept up, but there had been no other systematic treatment since the last date. The nasal condition was much improved. The mucous membrane had taken on a healthy appearance. There was no crust formation, and the discharge was much less and easily controlled by daily

home cleansings of normal salt solution. There was no odor to the secretions.

October 14th. The condition continued much improved, and the patient expressed himself as satisfied.

CASE III.—C. R., male; æt. twenty-two. Patient was first seen on December 12, 1908. He had had discharge from the nose and thick crust formation for over five years. Bad odor until two years ago, since when it had not been perceptible. Examination showed thick crust formation, atrophic, dry mucous membrane, and almost complete atrophy of both lower turbinates. The middle turbinates were hypertrophied. He had had five treatments with the lactic acid bacilli cultures with no improvement so far. This treatment was continued in order to give it a fair trial.

January 12th. Lactic acid bacilli cultures seemed to do no good, resource was had to argyrol.

March 25th. Since last note he had been receiving treatment regularly three times a week with the silver preparations. No improvement. Middle turbinate partially removed and ethmoid cells opened and curetted on left side.

March 29th. Right ethmoid cells opened and curetted.

April 1st. Much better. No crusts.

October 14th. Patient reported occasionally for observation since last date. He still manifested the same improvement. One daily home cleansing sufficed to keep the nose clean. There was no crust formation and the mucous membrane looked healthy.

CASE IV.—P. J., male; æt. twenty-four. February 24, 1909. Patient complained of impaired breathing due to crust formation, chiefly on the left side, of many years' duration. Bad odor until about three years ago, when it ceased. Sense of smell was lost. Mucous membrane was dry and atrophic. Atrophy of both lower turbinates. Hypertrophy of middle left turbinate.

March 13th. Had been a regular attendant at the clinic, having had routine treatment of cleansing and lactic acid bacilli cultures, with no improvement whatever.

The anterior portion of the middle turbinate on the left side was removed with a snare—no attempt being made to curette the ethmoid cells at this time.

March 16th. The discharge was now free, and thinner than it had been before. There was no crust formation. Ethmoid cells on left side were thoroughly curetted.

March 22d. Discharge less.

June 12th. Crust formation had ceased. Mucous membrane looked healthy and except that patient still complained of loss of sense of smell, he was practically well.

September 24th. Nasal condition still good. Very little discharge and no crusts at all.

Observation of a large number of cases of atrophic rhinitis of which the foregoing are offered as fairly illustrative, serve to confirm the belief that in the majority of cases the disease has its origin in an infection of the accessory sinuses and that usually the ethmoidal and the frontal are the ones primarily at fault. The fact that at some time in the history of these cases we are almost sure to find the middle turbinates enlarged and drainage interfered with, is at least suggestive of trouble in this region. The odor is probably due to secretions which do not have a free outlet and when the process is of such long standing that the atrophy has involved the middle turbinates and thereby uncorked the sinuses allowing the free exit of pus we are apt to find a decided amelioration in the symptoms. Thus, after long years, Nature affects a more or less permanent cure; but this can be greatly hastened by the aid of the surgeon. When surgical treatment fails to relieve it is because the suppurative foci have not all been reached; but it must not be forgotten that the most competent nasal surgeon may at times fail to establish free drainage on account of anomalous positions and unusual formations of the cells which are not always safely accessible by the intranasal route.

174 ST. NICHOLAS AVENUE.

THE BACTERIOLOGICAL EXAMINATION OF THE MOUTH AND FAUCES,

With Clinical Significance.

By BERNARD R. LE ROY, M. D.,
Athens, Ohio.

That there is a need for a plain, simple exposé of the methods made use of in the examination of smears, swabs, and other physical evidences of disease of the mouth and throat, was made only too evident to the writer on a recent visit to several State and municipal laboratories where he learned, somewhat to his surprise, that no regular form or method was in vogue; each had a little system peculiar to the individual worker. That some workers made use of but one stain to make a diagnosis of diphtheria, others of two different stains, while in exceptional cases inoculation was resorted to. This, with the ever present feeling of distrust of laboratories and of laboratory workers, that we find in the minds of the average medical man is warrant enough for the writer to add the following to the medical literature.

In all mailing tubes sent out from State laboratories for the use of physicians to gather exudate from the mouth or fauces there should be two swabs in each box, each wrapped in separate pieces of paraffin paper; one, the ordinary swab, the other to be smaller and more pencil-like in shape, this is to be used in the nostril; then wrapped in the paraffin paper so as to protect each, and then forwarded to the laboratory where each should be given a full and careful examination after an approved manner.

The medical attendant makes sure that he has secured a plentiful amount of the exudate on each of the swabs, he wraps the paraffin paper around the smeared end of the swabs, and sends them, without delay to the laboratory. Upon reaching there the bacteriologist proceeds to examine as follows: He makes not less than four smears from each swab on the glass slides, then places them in gentle heat, free from dust, to dry; taking the slide which has the thicker film of exudate, he stains this with Gram's stain; the second one he stains with Löffler's; the third with Neisser's; the fourth slide he stains with Ziel-Neelsen stain. He then proceeds to plant tubes of Löffler's serum, one from each swab, being sure to plant any piece of exudate found on the swab, and to rub it gently on the surface of the medium, and incubate at body temperature for not less than fifteen hours; should the worker be truly skilful he may examine the tubes after five, seven and twelve hours.

The initial work being finished he should proceed to examine the slides. Taking the Gram stained slide he should examine it under an oil immersion, going carefully over the whole slide, and remembering that of the bacilli found in the throat, that the *Bacillus diphtheriæ* and the pseudobacillus are the only Gram positive bacilli found. Taking note of the number present, he should next note the presence of other Gram positive organisms. Should the staphylococci be in overwhelming numbers with or without *Bacillus diphtheriæ*, it is evidence that pustulation is or will be part of the complication. Should streptococci predominate with *Bacillus diphtheriæ* and staphylococci in goodly num-

bers the throat is or will be swelling of the tissues of the throat as a dangerous complication; should there be few *Bacilli diphtheriæ* present, but numerous *Bacilli fusiformes* and spirilla, we can with ease diagnose angina; we have also, the capsulated pneumococci, ordinarily present in small numbers, but should they be present in great numbers, their presence should be noted, and entered upon the report; should streptococci, staphylococci, pneumococci, and the *Bacillus catarrhalis* be present in increased numbers, simple angina or follicular tonsillitis may be diagnosed; in this last case should the streptococci predominate one should think of scarlet fever; and in all these conditions should the *Bacillus fusiformis* be present in large numbers there is or will be formation of fœtid pus; where the spirilla are present in numbers with the above, there is a ulceromembranous form of disease. In these cases a hanging drop examination of the swab exudates should be made, to better acquaint the worker with the form and motion of the *Bacillus fusiformis* and the spirilla.

If a not very clear history of acute throat disease is given then it is advisable to make a slide from the swabs, using either end, and staining them with Giemsa's stain, permitting the slide to remain in the water at the final washing, smear down for some considerable time, dry with care and examine for *Treponema pallidum*.

Mycæial forms, heavily stained, if present in numbers, are certain to be the fungus of thrush, wild yeasts will be in evidence. The foregoing will constitute the main bulk of information to be gained from an examination of a slide stained with Gram's stain.

In the slides stained with Ziel-Neelsen stain, we should look for acid fast organisms, if found they are to be noted and entered upon the report. There are only three bacilli of the acid fast variety that are of known importance, the tubercle bacillus, leprosy bacillus, and the smegma bacillus.

The Neisser stained slide will make a clear diagnosis of diphtheria, yet it is not to be depended upon alone, but should come in regular routine work with the other forms of staining; the characteristic bright blue spots at either end of the bacillus, the body of the bacillus being stained a brownish yellow.

In the Löffler stained slide, the specific germ of diphtheria is stained and recognized by having the polar bodies stained a deep intense blue, while the body of the bacillus is stained a lighter blue.

Inspection of the culture tubes will show colonies of a specific germ which are small, round, raised spots, about the size of the head of a small pin; white or grayish in color, opaque. They are separate, and do not tend to run together, the characteristic feature being that they form colonies that grow higher, or more raised than any other cocci. Now make four slides from each tube, stain, and examine as in the case of the smears made direct, as has just been described, comparing slide for slide of each kind of stain, and make record of the results for final direction and report.

Cultural types to be found in the cultures will depend upon the time of growth; in direct smears

all three forms are found, any one form may predominate; in Löffler's serum the solid type is always found after seven to ten hours; the granular or barred type in growths of fifteen to twenty-four hours, being variable owing to temperature and associated organisms. They are nonmotile, nonspore-bearing, do not liquefy gelatin, and are an acid producer in carbohydrates, but form no gas in these media. They are narrow rods, either straight or slightly curved or reversed curve shaped. round ends are usual, yet pointed ends are often seen; clubbed forms are to be met with in every culture, especially after several days. One word as to the arrangement of the bacilli on the slide, they are often side by side or in irregular piles, all depending upon the manner of stroke used in making the smear.

Now, in summing up the results of the examination so far, and the specific germ being in evidence, the attending physician should be immediately informed that the examination is positive. At once should the operator proceed to inoculate a laboratory animal to learn the toxic power of the specific germ; the result should be sent to the physician, giving it as mild, strong, or fatal, so that the physician will be in full possession of the facts of the complete examination.

Clinical significance in addition to that already given is as follows, and may in the main be depended upon: Where streptococci are present in numbers the course of the disease is very severe and often fatal; where the *Bacillus influenzae* is in numbers the patient always suffers from exceedingly high temperature; where the *Bacillus fusiformis* is in evidence we have pus and a fœtid odor, yet there is a usually mild and seldom fatal ending; in all convalescents the Hoffmann bacillus is in evidence; these bacilli produce alkali instead of acid, as do *Bacillus diphtheriæ*, in milk and glucose media. In smears the spirilla are quite difficult to distinguish from *Bacillus diphtheriæ*.

The writer would plead for a more uniform routine method of examination of bacteriological substances, with a more prompt and direct reply from the laboratory, and that there should be a recognized routine, accepted by the State and municipal boards of health; an official form of examination, much after the plan adopted by the Association of Official Agricultural Chemists, who are endeavoring to systematize their laboratory methods.

Therapeutical Notes.

The Treatment of Gonorrhœa.—In *The British Medical Journal* for November 6, 1909, is reproduced the substance of a communication by K. F. Hoffmann dealing with the French method of treating gonorrhœa. The author is a German practitioner living in Paris, and he institutes a comparison with the method of treatment usually followed in Germany. The paper appeared originally in the *Münchener medizinische Wochenschrift* for May 11, 1909. It is first observed that in Germany, injection of small quantities of antiseptic fluids is the

vogue. The method of local treatment most favored in France is by Janet's irrigation, which includes bathing the urethra from the orifice to the bladder. While all French urologists regard small injections as useless if not dangerous, Fournier practises what is called the "traitement méthodique," while Janet pleads for large injections. The former depends on the principle of avoiding all local manipulations. In the acute stage Fournier prescribes seven and one half grains of sodium bicarbonate and an infusion of linseed meal. The penis is washed in boric acid solution, and a warm bath of three quarters of an hour duration is given every second day. After a fortnight, when the pain is lessened and the discharge has become whiter, the infusion is replaced by a mixture of cubebs and copaiba. Toward the end of the treatment a small injection of an astringent, such as resorcin, may be given. Hoffmann believes that this method has no longer many adherents. With regard to Janet's method the vital question is whether the large injections involve a risk of posterior urethritis. There can be no doubt that gonococci will be washed backward by the fluid, but inasmuch as the fluid is strongly antiseptic, and the patients are required to micturate immediately after the irrigation, it is held that no living cocci can remain in the posterior portion of the urethra. Should any remain behind, however, the medium in which they would find themselves is opposed to any bacterial growth, and by bactericidal action the few stragglers would meet with a speedy death. A further advantage of large injections is that they reach the posterior part of the urethra. Janet prefers potassium permanganate for all stages, while Necker advises oxycyanate of mercury or albargin during the acute stage, but never corrosive sublimate. The endeavor to employ an abortive treatment, which has found adherents in Germany, has not met with much support in France. Diday preferred to give a single injection of silver nitrate and then to await events. Hoffmann approves of this practice, since it is known that silver nitrate forms a scab, in which some of the cocci are certainly not killed. This scab protects the mucous membrane from a subsequent injection. Motz combined the silver nitrate with potassium permanganate, in order to obtain a deeper action. It is said that by means of Motz's plan of treatment acute gonorrhoeas usually heal up in from two to three weeks. Hoffmann regards it as the best method available. In dealing with chronic gonorrhoea, he also approves of Motz's method of distinguishing the implication of the various glands. By slight pressure or massage movements, it is often possible to remove a little purulent secretion from Cowper's glands, from Littre's and Morgagni's lacunæ, and from the prostate.

Oxygen Baths.—Efforts have been made for several years past to impregnate water with active oxygen, and many means have been employed, but without much success, until a firm of manufacturing chemists conceived the idea of using sodium perborate, which, as is well known, has an unusually high content of available oxygen. Under the name perogen bath this is now on the market, and after an examination by the council on pharmacy and

chemistry of the American Medical Association has been admitted to the list of accepted remedies. Perogen bath is described as a preparation consisting of a catalyzer and sodium perborate capable of yielding ten per cent. of oxygen, the two substances being wrapped separately. When the two substances are mixed with water the catalyzer, which is a medicinally indifferent substance, causes the liberation of the available oxygen of the sodium perborate. The oxygen bath thus obtained is said usually to reduce blood pressure and the pulse rate to a much greater extent than the ordinary bath. It is represented to have marked tranquillizing and somnifacient effects. It is asserted to be useful in cardiac affections with high vascular tension and excitement, neuroses, insomnia, chronic nephritis, and skin diseases in which hydrogen dioxide is indicated. It is recommended to be given daily up to twenty-four or forty-eight baths, with occasional intermissions.

Treatment for the Nervous Disturbances and Pains of the Menopause.—A note in *La Tribune médicale* for October 2, 1909, enumerates the measures commonly employed against the symptoms of nervous excitement and pains of the menopause. Hot baths, with prolonged immersion, should be prescribed, and as sedatives the valerates, bromides, belladonna, and hyoscyamus. The following combinations are suggested:

R Extract of belladonna,
Extract of hyoscyamus,
Zinc valerate,ãã gr. xii.
M. ut fiant pilulæ No. XX.

Sig.: One pill three times a day, shortly before meals.

R Quinine valerate,gr. iiii;
Sodium bicarbonate,gr. viiiss.

M. ft. Cachet No. 1.

Sig.: One cachet a day.

R Pulverized valerian,gr. iiii;
Quinine valerate,gr. iiii;
Camphor,gr. viiiss.

M. ft. Cachet No. 1.

Sig.: One cachet once a day in the morning.

R Extract of belladonna,gr. iiii;
Extract of hyoscyamus,gr. iiii;
Monobromated camphor,gr. xxx;
Quinine valerate,gr. xxx.

M. ut fiant pil. No. XX.

Sig.: One pill three or four times daily before meals.

Among the bromides, that of ammonium has the most sedative action. It should be given in doses of fifteen to twenty grains, and best as enema dissolved in infusion of valerian.

To overcome the pains give the following:

R Antipyrine,gr. ss;
Syrup of codeine,5i;
Chloroform water,5iv.

M. et Sig.: One teaspoonful every hour.

A Simple Method of Treating Hyperidrosis of the Feet or Hands.—Gerson (*Medizinische Klinik*, No. 34, 1909) employs a five to twenty per cent. alcoholic solution of the formaldehyde solution of commerce by saturating the stockings or gloves with the solution:

R Formaldehyde solution,5vi to 3iii;
Eau de cologne,5iv;
Alcohol, q. s.,ad. 5xvi.

M.

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A PROPOSED REVIVAL OF SPINAL ANÆSTHETIZATION.

A distinguished European surgeon is now visiting New York. The gentleman is Professor Jonnesco, of the University of Bucharest, and his mission is to demonstrate the value of surgical anæsthesia without loss of consciousness. The procedure which he is understood to advocate is that of injecting into the spinal canal a solution of stovaine and strychnine. The demonstrations which he has thus far given in New York have been highly satisfactory, and it is felt that he has made great advances in the technique of spinal anæsthetization. Nevertheless, there is really nothing new in his method.

The synthetic compound known as stovaine has for several years been recognized as an efficient local anæsthetic, and, moreover, it has been used to some extent within the rhachidian canal. There is, too, no novelty about Professor Jonnesco's procedure even in the addition of strychnine to the solution employed, for Dr. J. Leonard Corning, of New York, who first employed spinal anæsthetization, used strychnine with cocaine experimentally more than twenty years ago. If the high point at which the injection is given is regarded as a novelty, let him who so regards it remember that, as early as in 1890, Dudley Tait had made injections between the sixth and seventh cervical vertebrae. Professor Jonnesco's main achievement seems to us to lie in the fact of his nice adjustment of doses to individual cases.

It must not be forgotten that the danger incident to spinal anæsthetization is not the sole cause of the comparative desuetude into which the practice has fallen; there are in many cases grave objections to the very existence of anæsthesia without loss of consciousness, though there are a few surgeons who still push the use of local anæsthetics beyond what seem to us to be the bounds of reason. Local anæsthesia in its proper sphere is unquestionably a boon, for general anæsthetization has not yet been freed of all drawbacks. Nevertheless, it appears to us that, for all but minor operations, the embarrassment which may arise in consequence of a patient's consciousness must often outweigh those drawbacks.

Professor Jonnesco is properly meeting with a fair hearing, but we must deprecate the newspaper notoriety with which his mission has thus far been attended, though it has been mild in comparison with what has sometimes accompanied the exploitation of similar undertakings. Its tendency is chiefly harmful by reason of its leading the public to expect the impossible and to insist upon imposing its own inferences upon surgeons who undertake major operations. It is manifest that such a state of things is not only undesirable, but positively detrimental to the satisfactory practice of surgery.

PROBLEMS IN DIGESTION.

How careful we must be in applying our sense impressions in interpreting the nature of vital processes in the body, and what harm to scientific progress a too rigid adherence to sense impressions may produce, were well illustrated by some facts in the domain of physiology recently presented in a Harvey Lecture by Professor Otto Cohnheim. He cites some current misconceptions concerning the digestibility of various foods, and shows how fallacious is the common criterion, the rapidity with which food leaves the stomach. Thus, if we consider the relative digestibility of meat in small and in large pieces, it is constantly said that the small pieces are more easily digested. As a matter of fact the smaller pieces leave the stomach more rapidly, but also they are not then so much digested as the large pieces are. In view of the fact that the small intestine is the chief digesting organ, it is obvious that the small pieces will require more work on the part of the intestine. An examination of the large pieces often shows that they have largely been digested to peptone and have already partly been absorbed. In studying such a problem, therefore, the total amount of work required by the stomach and intestine should be the measure of digestibility, and of this we are still very much in ignorance.

Another current fallacy relates to the causes of gastric indigestion. Misled again by our sense im-

pressions, we have attributed gastric derangements to various quantitative and qualitative changes in the gastric juice and in the time the food remains in the stomach. In his work with Krehl, Cohnheim studied the problem experimentally, and found, curiously, that it was almost impossible to produce functional derangements of the stomach by direct injuries to the organ itself. Using dogs which had been provided with both gastric and intestinal fistulæ, these investigators showed that injuries to the intestine affected not only the functions of the intestine, but also to a marked degree those of the stomach. They injected through the intestinal fistula strong solutions of salts, such as sodium chloride or magnesium sulphate, or acids in various strengths, and produced not only diarrhœa, but various gastric derangements. Thus, after an ordinary test breakfast, the average amount of gastric juice secreted by a dog was found to be 150 c.c. Following the injection of magnesium sulphate into the intestine, the amount produced after such a meal was 290 c.c., while after a similar injection of a strong solution of sodium chloride the amount produced by the meal was only 60 c.c. Analogous changes were produced in the total acidity and in the length of time required to empty the stomach. Contrary to what our sense impressions have taught us, therefore, we must seek the origin of many gastric disturbances in the intestine.

It will be recalled that Liebig regarded meat extracts as a kind of emergency ration which represented readily assimilable food. This notion is still widely current to-day. In large part it appears to be based on the fact that the eating of meat extracts removes the feeling of fatigue. Careful physiological investigations, however, place this in quite another light. Fatigue is accompanied by an accumulation of butyric and acetic acids in the blood. When meat extracts are introduced into the stomach the flow of gastric juice is stimulated, and this in turn removes acid ions from the blood, thus changing the balance between the alkalies and acids in favor of the alkalies. With this change comes the disappearance of the feeling of fatigue. While the meat extracts thus combat fatigue, they in no way do so by supplying readily assimilable food to the organism.

One of the fundamental teachings of physiology in the past has been that there is a strict division of the muscles into two distinct classes, voluntary and involuntary. The latter were correctly held to be subject only to the control of the reflex mechanism, while the former were thought to be under the direct control of the will; that is, it was believed that stimuli could be sent to any voluntary muscle at will. Here, again, science seems to have been misled by our sense impressions, for recent investiga-

tions show that the mechanism is not at all so simple. It now appears that the brain merely starts the reflex mechanism. Furthermore, the nerve connections are under the control of the muscles, for by stretching the muscle, relaxation, the connection is opened, and by contraction of the muscle the connection is closed. All muscular actions thus appear to be primarily reflex, and the division of these into voluntary and reflex can only impede scientific progress.

OLD AGE.

It would be impossible to say how many men have tried to discover the fountain of youth. Through all ages we find the idea of imitating Nature in artificially rejuvenating man; only to mention one historical fact, the discovery of Florida was connected with it. But the further mankind progressed in science the surer became the conviction that there existed no method, whatever it might be, which would make the old young; and nowadays only fakirs make such assertions, which only fools will accept. Our search has been led into another direction, to make it possible for old age to keep its strength as long as possible; and this can be effected if the foundation for such a condition is laid in youth. The secret can be given in two words: Live rationally. In our fight for our daily bread we do forget this simple commandment, and when we have reached our goal, or when we should be content with what we have acquired—be it honors or riches or knowledge—usually a very modest condition that was possible for us to reach at the age of sixty, it is too late for us to enjoy the few remaining years comfortably.

To speak *ex cathedra*, to tell us what to do and what to leave alone, so that we may grow old without the ills of old age, has been exploited by many a writer, but few have been so concise as Dr. A. Lorand, of Karlsbad, Austria, whose book on *Das Altern* (published by Dr. Werner Klinkhardt, of Leipsic) appeared a short time ago. As only could be expected, it contains many truisms, but his twelve commandments for long life should be widely known. Harvey, the great Harvey, reported the post mortem examination of one Thomas Parr, who, as we all know, died at the age of 152 years and nine months, and gave as his diagnosis that Parr died because he changed "his sorry fair but free of care" with the rich table of his well meaning London host.

The rules for a long life are given by Lorand as follows: Join the order of the Capuchins or enter an English poorhouse or become a peasant. But not every one of us will be so inclined, and for these Lorand gives the following advice: Exercise daily and be as much as you can in the open air and sun-

shine, but avoid great heat. Eat meat only once a day and then in small quantities; your main food should consist of milk, eggs, cereals, butter, cheese, vegetables, and fruit; abstain from meat entirely every third month; masticate well. Take a daily bath, and once a week a hot bath. Pay proper attention to the bowels, with a light laxative once a week. The dress should be sensible; the clothes must be porous; the shirt collar should be wide; the dress in summer of light, in winter of dark colors; always wear low cut shoes. Follow the old rule of early to bed and early to rise. Sleep with open windows, not less than six hours and a half, a man not more than seven and a half, a woman eight and a half hours. Rest one day every week, and spend your time from Saturday to Monday in the country. Avoid excitement; do not worry, for by worrying you cannot change anything; do not speak of disagreeable things; have a strong will power. Avoid overheated places. Be moderate in the use of alcohol, tobacco, coffee, and tea. Be moderate in sexual connection; do not suppress the desire; marry.

THE UNIVERSITY OF LEIPSIK.

Although the fourth of December is the official day of its foundation, the University of Leipsic celebrated the beginning of its fifth century in July. In consequence of religious and other controversies, about four hundred professors and students left the University of Prague (founded in 1348) in 1409 and found a new home in Leipsic. The new university, like her sister institutions in Germany, had to undergo many vicissitudes. In its vicinity had been opened the University of Erfurt (1392), and later were founded those of Wittenberg (1502) and Jena (1558), which overshadowed Leipsic. But to-day the University of Leipsic is one of the most important institutions of learning in Europe. The medical faculty, not always a representative scientific body, since the middle of the last century has played a leading rôle: we need mention only the names of Karl Ludwig (1816 to 1895), Wilhelm His (1831 to 1904), Julius Cohnheim (1839 to 1884), Paul Flechsig (born 1847), Karl Thiersch (1822 to 1895), Sigmund Credé (1819 to 1892), J. C. Czermak (1828 to 1873), and Paul Möbius (1853 to 1907).

TUBERCLE BACILLI IN THE BLOOD.

The *Bulletin of the Hygienic Laboratory*, No. 57, contains a paper by Dr. John F. Anderson on The Presence of Tubercle Bacilli in the Circulating Blood in Clinical and Experimental Tuberculosis. In a series of fifty-seven cases of pulmonary tuberculous disease in man in which the bacillus was found in the sputum, the author failed to find it in the

blood in any case, either by Rosenberger's method of preparing and staining smears, by cultural methods, or by animal inoculations. In seven out of eight rabbits experimentally infected no tubercle bacilli could be found in the smears made from the blood, although the organisms were present in sufficient numbers to grow upon potato and to infect guinea pigs. In only one out of thirteen guinea pigs experimentally infected was the author able to develop the bacillus by cultural methods. No organisms were found in the blood smears.

It appears that Rosenberger's method is not one that is readily applicable by the laboratory man. We have seen Rosenberger's specimens, and there can be scarcely a doubt that they contain tubercle bacilli. At a meeting of the Pathological Society of Philadelphia held on November 11th Dr. E. Burrill-Holmes reported finding acid fast bacilli in the distilled water in his laboratory in the Bryn Mawr Hospital. Dr. Rosenberger answered the doubt thus thrown upon his method in a most convincing way. It is not possible that this error has crept into his reported results, for he is a very careful worker. Some other observers may not have his painstaking habits, and here is the point at which we may explain the difference in results. At all events, the method is not one that will be generally adopted.

A FUTILE OFFER.

It is announced that somebody has offered a large sum of money as a reward for whoever discovers a "cure" for pulmonary consumption. Similar offers have been made in the past, and sometimes the prize has been awarded, but it has almost always turned out that the award was made without due consideration. It is not likely that any one measure, anything that could be called a "cure," will ever be found for pulmonary tuberculous disease, but the success already achieved in arresting the disease and in preventing it warrants the devotion of vast sums to continued investigation and to the employment of means of relief now known.

DANGER IN THE "TEDDY BEAR."

In its issue for November 22d the *American Druggist and Pharmaceutical Record* cites some observations by the director of the Pasteur Institute of Constantinople to the effect that pathogenic organisms preserve their vitality for considerable periods of time when they are caught in the fur of pet animals, and remarks upon the consequent danger of allowing cats and dogs to go into and out of the sick room in the presence of infectious disease. Our contemporary very properly extends the caution so that it will apply to the "Teddy bear" and to other toys of a similar character.

News Items.

Changes of Address.—Dr. Edward Bradford Dench, to 15 East Fifty-third Street, New York.
Dr. Tasker Howard, to 383 Clinton Street, Brooklyn, N. Y.

Dr. William Cowpe Gardner, to 244 West Seventy-sixth Street, New York.

The Third Lecture of the Harvey Society will be delivered by Professor T. G. Brodie of the University of Toronto, on Saturday evening, December 11th, at 8:30 o'clock, at the New York Academy of Medicine. The subject will be Renal Activity.

Philadelphia Hospitals Consolidate.—It is reported that the Samaritan Hospital and the Garretson Hospital have become part of Temple University. The hospitals will retain their present names, but will be operated under the university corporation.

The Medical Society of the Borough of the Bronx.—At a stated meeting of the society, held on Wednesday evening, December 8th, the paper of the evening was read by Dr. Henry Roth. His subject was The Pathology and Diagnosis of Cholelithiasis and Diseases of the Biliary System.

Endowment Fund for Trinity College, Durham, N. C.—It is reported that Trinity College is to receive half a million dollars for the establishment of a medical, pharmaceutical, and dental department in the institution. The donors are the Dukes, who have already given more than a million dollars to the college.

The German Medical Society, of New York, celebrated its thirty-ninth anniversary with a dinner at the Hotel Astor on Saturday evening, December 4th. One hundred German speaking physicians, with their friends, attended the dinner. Dr. Franz Torek is president of the society and Dr. A. Herzfeld is secretary.

\$2,237,000 for City Hospitals.—The New York Board of Estimate on December 3d made an appropriation of \$2,237,000 for the Department of Charities. This money is to be used in improving hospital facilities on Randall's and Blackwell's Islands, and for improvements in connection with the Kings County and the Cumberbund Street Hospitals.

The Manhattan Medical Society will hold its next meeting on Friday evening, December 17th, at 8:30 o'clock. The paper of the evening will be read by Dr. John B. Deaver, of Philadelphia, on The Use and Abuse of Gastrojejunostomy. A cordial invitation is extended to the medical profession to attend the meeting and partake of the collation which will be served afterwards.

Cancer Research.—It is reported that by the will of the late George Crocker, of California, who died from cancer last Saturday, in New York, the board of trustees of Columbia University are to receive a fund of about \$1,500,000 to be known as the George Crocker Special Research Fund, the income from which to be used in the prosecution of research into the cause, prevention, and cure of cancer.

Rochester, N. Y., Academy of Medicine.—A regular meeting of Section II, including surgery, anatomy, orthopaedic surgery, ophthalmology, otology, laryngology, dermatology, and genitourinary surgery, was held on Wednesday, December 8th. Two papers were read: one by Dr. William V. Ewers on Gastric Symptoms in Certain Cases, and one by Dr. Thomas Jameson entitled Review of Modern Surgery of the Gastrointestinal Tract, which was illustrated by lantern slides.

The Hospital for Consumptives at Sea View, Staten Island.—The New York Board of Aldermen, on December 7th, endorsed the appropriation of \$1,350,000 to complete the Hospital for Consumptives at Sea View, Staten Island. This hospital will have accommodations for one thousand patients. There has been no opposition on the part of the residents of Staten Island to its establishment, as the site of the institution is more than a mile from any dwelling, and it is the intention to transport patients by boat.

The American Hospital of Paris, at 55 Boulevard du Chateau, Neuilly, was opened on November 13th. The board of governors consists of Mr. John H. Hardjes, president; Mr. John J. Hoff, vice-president; Mr. H. H. Hardjes, treasurer; and Mr. Henry Cachard, secretary. The attending physicians are: Dr. A. J. Magnin, Dr. Edmund L. Gros, Dr. C. Crosby Whitman, and Dr. R. H. Turner. Dr. Du Boucher is attending surgeon, Dr. G. J. Bull is attending oculist, and Dr. C. J. Koenig is attending otologist.

First Aid Equipment in Street Cars.—There is an equipment on the Rotterdam street cars which Deputy Consul-General Ernest Vollmer thinks could well be adopted in the United States at a very small cost. Every car is supplied with a small first aid to injured package. The bundle, carried in the car alongside of the register, contains some material for bandages and such things as would be handy in case of minor injuries to the crew, passengers, or pedestrians.

New Quarters for the New York Health Department.—Comptroller Metz has announced that at the next meeting of the Board of Estimate and Apportionment he will recommend the appropriation of \$350,000 for the purchase by the city of the new building at the corner of Irving Place and Sixteenth Street. The building is eleven stories high, and would give plenty of room for the Health Department and the Tenement House Department and the Bureau of Buildings as well.

Personal.—Dr. Daisy M. Orleman Robinson, of New York, has been elected a member of the *Société française de dermatologie et de syphiligraphie*. Dr. Robinson is the first woman upon whom this distinction has been conferred.

Dr. John M. Swan, of Philadelphia, has been elected associate professor of clinical medicine in the Medico-Chirurgical College of Philadelphia.

According to press despatches the medical faculty of Budapest University has offered the chair of experimental biology to Professor Jacques Loeb, of the University of California.

Gifts for Columbia.—At a meeting of the board of trustees of Columbia University, held on Monday, December 6th, gifts amounting to \$20,350 were announced. Included in this sum was a fund of \$1,000 given to the university by the Hudson-Fulton Celebration Committee, to establish the Hudson-Fulton prize or prizes for an athletic contest to be participated in by students of the university. An anonymous donor has contributed \$5,000 for equipment in the Medical Department, and another anonymous donor has contributed \$5,000 to be used in equipping the department of electrical engineering. Another gift was \$600 from Mr. George G. Heye, of the class of '96, for the department of anthropology.

Changes in the Medical Department of the United States Navy Recommended by Surgeon General Rixey.

The annual report of Surgeon General Rixey, of the United States Navy, recommends the reorganization of the hospital corps, the establishment of a corps of dental surgeons and a medical reserve corps, the construction of two hospital ships, and a modification of the laws relative to fleet surgeons. Surgeon General Rixey also advocates a closer supervision of the physical exercise of the midshipmen at Annapolis by medical officers. He opposes the proposed requirement that officers shall do "many hours' watch on the deck of ships as an endurance test. He urges that it is not in keeping with the physical tests laid down by Ex-President Roosevelt.

The American Red Cross Endowment Fund.—Announcement is made that President Taft has appointed an endowment fund committee, with Secretary of the Treasury MacVeagh as chairman and his assistant, Charles D. Norton, who is treasurer of the Red Cross, as vice-chairman, for the purpose of raising an endowment fund whose income will be sufficient to enable the society to be prepared at all times to carry out the work for which it has been created. It is the authorized official organization of the United States for volunteer aid in time of war or great disaster. A New York sub-committee, consisting of five members, has been appointed, and sub-committees will shortly be appointed in other cities. The committee hopes to raise an endowment fund of \$2,000,000.

A New Building for the New York Academy of Medicine.—It is reported that at a recent meeting of the board of directors of the New York Academy of Medicine it was proposed to erect a new building at a cost of \$700,000, and a committee was appointed to report on a site. This committee is composed of Dr. E. G. Janeway, Dr. Joseph D. Bryant, Dr. Abraham Jacobi, Dr. Algrenon T. Bristow, Dr. Simon Flexner, Dr. Joseph A. Blake, Dr. Reginald H. Sayre, Dr. A. Alexander Smith, Dr. Charles L. Dana, Dr. Arthur M. Jacobus, Dr. W. Gilman Thompson, Dr. William C. Lusk, Dr. L. Emmett Holt, Dr. H. L. Collyer, Dr. H. S. Oppenheimer, Dr. Haven Emerson, and C. N. B. Camac. This committee will submit a report and suggest a site for the new building at the December 16th meeting of the academy.

New York Academy of Medicine.—A meeting of the Section in Neurology and Psychiatry will be held on Monday evening, December 13th, at 8:15 o'clock. The programme will include the following papers: The Vestibular Nerve in Relation to Equilibrium and Its Disturbances, by Dr. Percy Fridenberg; The Eighth Cranial Nerve Otologically and Neurologically Considered, by Dr. John McCoy. Among those who will take part in the discussion are Dr. Smith Ely Jelliffe, Dr. A. B. Duel, Dr. T. Passmore Berens, Dr. J. Ramsay Hunt. Officers for 1910 will be elected.

Gifts and Bequests to Charity.—By the will of John Masterson Burke, who died in New York a short time ago, the Winifred Masterson Burke Relief Foundation will receive the bulk of the estate, which is said to be large. In 1902 Mr. Burke gave \$4,000,000 to this institution for the establishment and maintenance of a home for convalescents.

By the will of the late Clara Russell Bacon, who died in New York recently, St. John's Guild and the Middletown, N. Y., Hospital will each receive \$3,000.

The Buffalo General Hospital has received from Dr. and Mrs. S. B. Mitchell a gift of \$5,000 for the endowment of a ward bed.

Dr. Jonnesco Demonstrates the Value of Stovaine as an Anæsthetic.—Dr. Thomas Jonnesco, of the University of Bucharest, Roumania, gave a demonstration on December 7th at the Hospital for the Ruptured and Crippled, Lexington Avenue and Forty-second Street, New York, of the value of a combination of stovaine and strychnine as a spinal anæsthetic. Four patients were operated upon, who were said by the hospital authorities to have come out from under the influence of the drug without ill effects. The actual operative work was performed by the surgeons of the hospital, Dr. Jonnesco prescribing the dose of the anæsthetic and administering it. Dr. Jonnesco gave a similar demonstration at the Postgraduate Hospital on Wednesday, December 8th. Among those who witnessed the operations was Dr. William J. Mayo, of Rochester, Minn.

Prize for Consumption Cure.—Announcement is made that an anonymous alumnus of Yale has offered a prize of \$100,000 to the person who first discovers an adequate remedy for tuberculosis. The fund has been placed in the custody of Yale University and the medical school faculty are to act as its trustees. An advisory board has been appointed, whose membership includes Dr. E. L. Trudeau, of Saranac Lake; Dr. Simon Flexner, of the Rockefeller Institute; Dr. William H. Welch, of Johns Hopkins University; Dr. Lawrence F. Flick, of Philadelphia, and Dr. Hermann M. Biggs, of New York. The income from the fund is to be used for the investigation of any remedies which come to the attention of the trustees or members of the advisory board that have not been submitted for the prize. A condition of the award is that the cure under consideration shall have been in use for at least five years and during that time have proved its actual and unquestioned efficiency.

A Dinner to Dr. McEvitt.—Dr. John C. McEvitt, of Brooklyn, recently promoted from surgeon of the Second Battalion, Naval Militia, New York, with rank of lieutenant, to surgeon on the staff of Captain Jacob Miller, commanding the naval forces of the State of New York, with rank of lieutenant commander, was tendered a testimonial dinner by the officers of the Second Battalion, at the Union League Club, Brooklyn, on the evening of December 4th. As a souvenir of the occasion, Dr. McEvitt was presented with a pair of handsome cuff links set with sapphires. The first page of the menu bore a portrait of Dr. McEvitt in his uniform, and also a reproduction of a daguerreotype showing him at the age of three years. Commander Robert Pierrepont Forsheaw presided, and after calling attention to Dr. McEvitt's long and faithful service with the battalion and his excellent work as a surgeon in the United States Navy during the war with Spain, gave each of the gentlemen present an opportunity to say nice things about the guest of honor. In responding, Dr. McEvitt announced his intention of presenting the battalion with a valuable trophy to be contested for by the six divisions, and to be known as the King Memorial Trophy, in honor of the late Assistant Surgeon of the Battalion, Dr. John F. King. A pleasing incident of the dinner was a visit from the Brooklyn Dental Society, who were having their annual dinner in an adjoining room. Dr. W. E. Butler is Dr. McEvitt's successor as surgeon to the Second Battalion.

The New York Postgraduate Hospital Purchases Site for Annex.—The New York Postgraduate Medical School and Hospital has purchased the four story dwelling houses at 307 to 313 East Twentieth Street, and a similar house at 354 Second Avenue. The original hospital site is at the northeast corner of Twentieth Street and Second Avenue. With these purchases the institution now controls a plot fronting 118 feet in Second Avenue, 230 feet in Twentieth Street, and 60 feet in Twenty-first Street. On its parcel adjoining its old home it will erect an annex. The land and building will represent an investment, it is said, of about \$1,000,000. The building of a larger home for the hospital and school was planned by the late Dr. D. B. St. John Roosa some years before his death, which occurred suddenly on March 8, 1908. Dr. Roosa was one of the founders of and for many years president of the institution. For the furtherance of this building project he bequeathed to the hospital a large sum of money.

Postgraduate Course for Nurses at Teachers College.—An endowment fund for the support of a postgraduate school for teacher nurses, who will carry the theory and practice of hygienic living into schools, homes, factories, stores, and communities, has been presented to Teachers College, Columbia University, by Mrs. Helen Hartley Jenkins. The amount of the gift has not been made public. The school will be the first institution of the kind to be established in this country, and its direction, it is said, will be largely in the hands of Miss Adelaide Nutting, Professor of Hospital Economics in Teachers College, a former superintendent of the Johns Hopkins Training School for Nurses in Baltimore. The endowment is to be used by the college through its new school of household arts. It provides for instruction in the science and art of proper living, with the special object of training women for public service as visiting nurses in home and school, and of educating teachers in farmers' institutes and sanitary experts in the training of children in city and country.

Memorials to the Late Dr. McCosh.—More than \$116,000 has been collected from nearly three hundred and fifty separate sources, to commemorate the life and work of Dr. Andrew J. McCosh, who was connected with the Presbyterian Hospital for twenty years, and who died in that institution a year ago as a result of injuries received in a runaway accident. This announcement was made yesterday by the committee in charge of the memorial through its secretary and treasurer, Allan Appleton Robbins, of 304 Lexington Avenue. Just what form the memorial will take has not been announced by the committee, but it seems to be generally accepted that the fund will be used to erect the Dr. Andrew J. McCosh Operating Pavilion on the site of the new Presbyterian Hospital, at Sixty-seventh and Sixty-eighth Streets and the East River. Two entirely separate memorials have already been made possible by the gratitude of patients and the generosity of life-long friends. Princeton friends equipped a launch bearing his name and presented it to Dr. Wilfred T. Grenfell for his work in the Far North, and \$25,000 has been raised for a McCosh memorial for nurses.

The Prevention of Blindness.—The special committee on the prevention of blindness of the New York Association for the Blind held its first annual meeting recently, and submitted a most gratifying report of its first year's work. This committee, which is made up of physicians and laymen, has for its object the investigation of the direct causes of preventable blindness, with the hope of eliminating such causes, and as ophthalmia neonatorum is responsible for about one third of all blind children in schools for the blind in this country, the committee hopes, through legislative and educational measures, to practically eradicate this disease. It was recommended that a solution of silver nitrate be gratuitously distributed by the State Department of Health to physicians and midwives, and to this end an appropriation of \$5,000 was made by the State. All birth certificates issued by the State Department of Health now bear the query: "What preventive of ophthalmia neonatorum did you use? If none, state the reason therefor." The educational work of the committee has been carried on by means of publications, public speaking, lantern slides, and photograph exhibits. The expense of the work is borne by the Russell Sage Foundation. The membership of the committee includes Dr. Eugene H. Porter, Dr. Charles Stedman Bull, Dr. J. Clifton Edgar, Dr. Ward A. Holden, Dr. F. Park Lewis.

The Health of Pittsburgh.—During the week ending November 27, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 19 cases, 0 deaths; typhoid fever, 17 cases, 3 deaths; scarlet fever, 43 cases, 0 deaths; diphtheria, 19 cases, 3 deaths; measles, 56 cases, 0 deaths; whooping cough, 3 cases, 0 deaths; pulmonary tuberculosis, 28 cases, 5 deaths. The total deaths for the week numbered 164 in an estimated population of 572,000, corresponding to an annual death rate of 14.90 in a thousand of population.

Scientific Society Meetings in Philadelphia for the Week Ending December 18, 1909:

TUESDAY, December 14th.—Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences.

WEDNESDAY, December 15th.—Philadelphia County Medical Society.

THURSDAY, December 16th.—Section in Ophthalmology, College of Physicians; Section Meeting, Franklin Institute; Southwark Medical Society; Northeast Branch, Philadelphia County Medical Society; Delaware Valley Ornithologists' Club.

FRIDAY, December 17th.—American Philosophical Society; Combined Meeting New York Neurological Society and Philadelphia Neurological Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 4, 1909:

	November 27— Cases, Deaths.	December 4— Cases, Deaths.
Tuberculosis pulmonalis	455 134	576 173
Diphtheria	302 20	343 30
Measles	203 7	411 3
Scarlet fever	272 9	382 16
Smallpox	—	—
Varicella	138 —	1-8 —
Typhoid fever	45 12	82 14
Whooping cough	23 7	23 3
Cerebrospinal meningitis	4 5	5 8
Total	1,592 203	2,000 247

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending November 27, 1909, there were 1,336 deaths from all causes reported to the department, 46 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.27 for the whole city, and for each of the five boroughs as follows: Manhattan, 14.93; the Bronx, 16.79; Brooklyn, 15.39; Queens, 14.91; and Richmond, 17.39. The total infant mortality was 400; 256 under one year of age, 80 between one and two years of age, and 64 between two and five years of age. Of the total number of deaths of children under five years of age, 43 were due to diarrhoeal diseases. The deaths from important causes were as follows: Contagious diseases, 57; pulmonary tuberculosis, 134; diarrhoeal diseases, over five years of age, 48; organic heart diseases, 128; Bright's disease, 109; cancer, 73; pneumonia, 105; bronchopneumonia, 100. There were 11 suicides, 53 deaths due to accidents, and 3 deaths from homicide, making a total of 67 deaths by violence. There were 138 stillbirths. One thousand and twelve marriages and 2,271 births were reported during the week.

The Health of Chicago.—During the week ending November 27, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 171 cases, 10 deaths; scarlet fever, 134 cases, 7 deaths; measles, 106 cases, 0 deaths; whooping cough, 34 cases, 2 deaths; typhoid fever, 28 cases, 3 deaths; chickenpox, 50 cases, 0 deaths; pneumonia, 4 cases, 94 deaths; tuberculosis, 83 cases, 75 deaths. Twenty-three cases of minor contagious diseases were also reported. The deaths from other causes were: Influenza, 3 deaths; cancer, 51 deaths; nervous diseases, 20 deaths; heart diseases, 50 deaths; apoplexy, 14 deaths; Bright's disease, 41 deaths; diarrhoeal diseases, under two years of age, 24 deaths; diarrhoeal diseases over two years of age, 4 deaths. There were 6 suicides, 41 deaths due to accidents, and 1 death from manslaughter, making a total of 48 deaths by violence. The total number of deaths during the week was 586 in an estimated population of 2,224,450, corresponding to an annual death rate of 13.04 in a thousand of population. The infant mortality was 136; 89 under one year of age, and 47 between one and five years of age.

"Symposium" on Infant Mortality.—At a meeting of the Section in Public Health of the New York Academy of Medicine, to be held on Tuesday evening, December 14th, at 8:30 o'clock, the programme will consist of a "symposium" on Infant Mortality. Papers on the subject will be read as follows: Infant Mortality in Obstetrical Practice; Hygiene of Pregnancy as an Influencing Factor, by Dr. I. L. Hill; A Plan to Reduce Infant Mortality in Large Cities; A Report of the Pædiatric Department of a Maternity Outdoor Service, by Dr. Herman Schwarz, assisted by Adelaide Bowland, R. N.; A Plan for the Reduction of Infant Mortality in New York City, by Robert W. Brugère, Esq.

Society Meetings for the Coming Week:

MONDAY, December 13th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Society of Alumni of St. Mary's Hospital, Brooklyn; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, December 14th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

WEDNESDAY, December 15th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, December 16th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club, of Buffalo, N. Y.

FRIDAY, December 17th.—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

The Health of Philadelphia.—During the week ending November 27, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 33 cases, 5 deaths; scarlet fever, 40 cases, 3 deaths; chickenpox, 86 cases, 0 deaths; diphtheria, 81 cases, 12 deaths; cerebrospinal meningitis, 1 case, 0 deaths; measles, 13 cases, 0 deaths; whooping cough, 15 cases, 4 deaths; tuberculosis of the lungs, 68 cases, 48 deaths; pneumonia, 30 cases, 43 deaths; erysipelas, 10 cases, 1 death; mumps, 10 cases, 0 deaths; tetanus, 2 cases, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 5 deaths; diarrhoea and enteritis, under two years of age, 21 deaths; puerperal fever, 4 deaths. The total deaths numbered 428 in an estimated population of 1,565,569, corresponding to an annual death rate of 14.21 in a thousand population. The total infant mortality was 88; 72 under one year of age, and 16 between one and two years of age. There were 39 stillbirths, 20 males and 19 females. The total precipitation was .11 inch.

During the week ending November 27, 1909, the following cases of transmissible diseases were reported: Typhoid fever, 10 cases, 3 deaths; scarlet fever, 36 cases, 2 deaths; chickenpox, 87 cases, 0 deaths; diphtheria, 90 cases, 7 deaths; cerebrospinal meningitis, 1 case, 0 deaths; measles, 21 cases, 2 deaths; whooping cough, 6 cases, 1 death; tuberculosis of the lungs, 70 cases, 51 deaths; pneumonia, 23 cases, 43 deaths; erysipelas, 10 cases, 4 deaths; mumps, 11 cases, 0 deaths; tetanus, 1 case, 1 death; trachoma, 1 case, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 14 deaths; puerperal fever, 3 deaths. The total deaths numbered 421, corresponding to an annual death rate of 13.98 in a thousand population. The total infant mortality was 72; 58 under one year of age, and 14 between one and two years of age. There were 49 stillbirths, 25 males and 24 females. The total precipitation was 2.65 inches.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 25, 1909.

1. The Diagnosis of Ulcer of the Duodenum,
By E. A. CODMAN.
2. Points in the Diagnosis of Injuries,
By F. J. COTTON.
3. Variations in the Posterior Horn of the Lateral Ventricle, with Notes on their Development, and Suggestions as to their Clinical Significance,
By E. J. CURRAN.
4. Chemical Examination of the Fæces of Infants and Children after Gastroenterostomy,
By FRITZ B. TALBOT.

1. **The Diagnosis of Ulcer of the Duodenum.**—Codman presents the following résumé of his observations: In the development of mammals the large intestine is swung across the small, thus necessarily the whole blood supply of the small intestine and most of the large must cross the small intestine. This crossing place occurs at the end of the duodenum beneath the superior mesenteric artery. But in horizontal quadrupeds no obstruction is produced at this point, while in vertical man a greater or less obstruction must necessarily be thus produced. As a result of this obstruction in man the secretions of pancreas and liver may at times be thrown backward on the first part of the duodenum, the first part of which is unfitted to withstand long continued action of these secretions, since its mucous membrane is histologically and developmentally different from the rest of the duodenum and is more closely allied to that of the stomach. The action of these caustic secretions on this unprepared mucous membrane may give rise to irritation accompanied by certain painful sensations, which may be felt in the epigastrium and attributed to the stomach. Long continued action of this kind may, under certain conditions, lead to erosion and even deep ulceration of the mucous membrane just below the pylorus. Such ulcerations, when they are close enough to the pylorus, lie in the folds of mucous membrane just outside it, and are comparable to fissures of the anus, and, like fissures of the anus, they are kept from healing by their relation to the sphincter. Clinically, hunger, pain, and dyspepsia are the primary symptoms of such ulcers or fissures, and certain other clinical phenomena are secondary symptoms. In the diagnosis of these cases mistakes are made by too great consideration of these secondary accidental symptoms and too little attention to the primary insignificant hunger pain and indigestion, and when these considerations are taken into account, the diagnosis is really not difficult in the advanced cases. Ulcer below the pylorus is more common than it is above, and in future we must make diagnoses of duodenal or possible gastric ulcer instead of the vice versa. Duodenal ulcer is nearly as common as acute appendicitis.

3. **Variations in the Posterior Horn of the Lateral Ventricle.**—Curran remarks that in a large percentage of brains the tip of the posterior horn of the lateral ventricle is cut off from communication with the rest of the ventricle by a constriction and adhesion about the calcar avis. In a large percentage of cases the adhesions of the walls is complete throughout the occipital lobe, making the so called short horn. The ependyma, however, re-

mains on the two adherent walls and can always be seen in this position, proving that this part at one time during development was occupied by the cavity which has since become obliterated. In a large percentage of cases the tip of the posterior horn has a very narrow communication with the rest of the lateral ventricle, and, on account of the thinness of the wall about the calcar avis, any change in pressure is likely to close this aqueduct and produce a temporary disturbance in the circulation of cerebrospinal fluid, and might give rise to pain or other symptoms. Any of these conditions would obstruct the circulation of the cerebrospinal fluid. When the posterior horn is entirely or partially closed by adhesion of the walls, any increase of internal pressure would tend to break the adhesions and reestablish the normal posterior horn. Such straining on the adhesions might give rise to pain or other symptoms. The calcarine fissure and the cerebellum, which modify so much the shape of the posterior horn, are developing rapidly about the time of the appearance of convulsions in infants, which is an interesting coincidence. The large proportion of anomalies in the posterior horns of brains from infants in institutions is significant. In all cases the ventricle should extend far into the occipital lobe, and traces of its having been there at one time during development are always to be found. The relationship of the optic radiation and other structures to the posterior horn are important facts for consideration in connection with the causes of temporary scotoma and migraine, and possibly other conditions. The condition of the posterior horn should be examined in all cases of obscure cerebral diseases or mental disorders.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 4, 1909.

1. Some Relations of Occupation to Medicine,
By DAVID L. EDSALL.
2. Responsibility of the Physician in the Campaign against Tuberculosis,
By JOHN GRDWOOD.
3. Treatment of Cancer of Uterus when too far Advanced for Extirpation of the Uterus,
By H. J. BOLDT.
4. Palliative Treatment of Cancer of Uterus, Especially with Thermocautery,
By WALTER B. CHASE.
5. Analgetic Effect of Local Applications of Solutions of Magnesium Sulphate and Other Salts; Preliminary Note,
By SOLOMON SOLIS COHEN.
6. Correction of Deformities of Nose by Mechanical Replacement. Report of Cases Treated by Combined Bridge and Intranasal Splint,
By WILLIAM WESLEY CARTER.
7. Vasectomy as a Means of Preventing Procreation in Defectives,
By HARRY C. SHARP.
8. The Effect of Intercurrent Disorders on Preexisting Epilepsy,
By ARTHUR S. HAMILTON.
9. Blood Smears, Their Staining and Preparation,
By EMERY R. HAYHURSE.

1. **Relations of Occupations to Medicine.**—Edsall, in his paper, treats the relation of occupation to disease. This is an important study, rightly belonging to medicine, which has never, to any extent, been taken up. He thus speaks of occupations predisposing to plumbism, mentioning the fact that carriage painters are very much more subject to lead poisoning than house painters. Another example he gives is the right sided sciatica in locomotive engineers. Exposure to severe degrees of heat will bring on certain disorders. In certain mechanics we

will find a too often recurring sprain, and mentions certain infirmities of the baker and waiter. Certain heart affections and mercury poisoning are other occupation diseases. In glass blowers we find emphysema, also in men who play professionally on wind instruments. Phosphorus poisoning is found among the match makers. But these occupation diseases will also show their influence on posterity, so especially among the infants of mercury workers. He then comes to the sociological side of the question and says that laws should regulate these occupations and protect the workers. But regulation is not the first, nor is it the only important step. This is especially true for this reason, if for no other. Laws or voluntary altruism may lead employers to make regulation and to provide special hygienic facilities, but the greatest difficulty in many instances is in getting the working people to take precautions intelligently.

3. **Advanced Uterine Cancer.**—Boldt observes that the palliative treatment of cancer becomes especially important when we recall that, by preventing the nutrition of the cancer cells, we cause them to undergo retrograde metamorphosis and thus destroy their activity. We know from the experience of the late John Byrne and many others that even in carcinomatous uteri of long standing the further progress of the disease may be checked by proper heat application. It has been asserted that cures even have been brought about by such means, the cancer cell having very little power of resistance against heat. There can be no question, however, that the system, under some circumstances, checks the proliferation of cancer cells and occasionally succeeds in destroying their life. It seems certain that small cancer remnants left in the body are sometimes taken care of by the system. What the conditions are in such instances no one has yet determined. Clinical experience has shown beyond doubt that palliative treatment may benefit cancer patients by directly destroying the cancer cells with the agent used, and perhaps by forming a protection against the cancer proliferation. As to palliative treatment by surgical means, the disease in some instances has advanced too far even to allow such a course to be considered, because its application might leave the patient in a worse condition than before the intervention. Of the palliative operations Boldt prefers the curette and cautery. He uses a specially constructed heavy curette, the "cancer spoon." All readily breaking down structure is rapidly excavated with the spoon. The bleeding is stopped with an extra large dome point electrode of a galvanocautery, so that it can be done more rapidly. To avoid burning the vulva and the vagina, he devised a speculum a few years ago which is constructed of metal and has a double hull, cooled by a continuous flow of cold water through the dividing space. In shape it is like the old style Ferguson speculum. The burning or charring is done very thoroughly, so as to leave practically only an outer shell of the uterus. The operation must be controlled by frequent examinations with the finger, lest we perforate the uterus and injure other structures. It is well, now and then, to cool off the cavity which is being charred. This is easily done by putting ice shavings, or very small pieces of cracked

ice, through the speculum, leaving them for a few minutes and then drying the surface before again applying the heat. After the eschar has been thrown off, it is best to use strong tincture of iodine in the cavity once every second day until the cavity has contracted. Or, judging from Gellhorn's experience with acetone, that remedy might be used with even greater benefit to the patient following the casting off of the eschar. Marion Sims used strong zinc chloride solution, others calcium carbide, pyrothemin, absolute alcohol, etc. He then mentions Bier's blood method, trypsin, fulguration, etc. But it must be stated that if in young persons with cancer beginning in the cervical canal the disease has perceptibly progressed beyond the line of so called operability, life is not long to be enjoyed, no matter which of the palliative forms of treatment at present known to us is employed. It may be that in the future a valuable therapeutic agent will be found in the ferments, judging from the results obtained by the injection of placenta ferment; but at present it is too early to be sanguine.

7. **Vasectomy as a Means of Preventing Procreation in Defectives.**—Sharp states that severing the vas deferens or the oviduct does not arrest the sexual development, there will be no atrophy or cystic degeneration. In men there is no diminution of the sexual power or pleasure; the discharge at orgasm is but slightly decreased; the desire for the opposite sex is in no way diminished; his mind is strengthened and his nervous system benefited from the reabsorption of sperm. It has a decided effect on the centres of self restraint, besides improving the physical condition, as the masturbator refrains from excessive indulgence in this practice. Almost wholly as the result of increased will power, the rapist or criminal will be aided in resisting his pernicious impulses. Thus we have a means of preventing procreation in the unfit, at the same time improving the condition of the unfortunate individual. In the female the effect is the same. On account of these facts he suggested that the vas deferens in the male and the oviduct in the female be severed as a means of preventing procreation in defectives, as the operation has no deleterious effect on the subject, but the contrary. The operation in no way endangers life. After cleansing the scrotum with soap and water he bathes the part in alcohol, then grasps the spermatic cord between the thumb and index finger of the left hand, detects the vas, holds it firmly and fixes it with a pair of bullet forceps, then cuts down on it, draws it through the scrotal wound by means of a tenaculum hook, strips it of all membranes and the accompanying artery, ligates above and severs, cutting away any portion from the vas that may have been damaged in the manipulation. This is done in order that the end next to the testicle may not become closed. It is very important that it shall remain open, in order that the secretion of the testicle may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion; also where the end closes there is likely to be cystic degeneration. The action of the muscle closes the skin wound and no stitch, colloid or adhesive plaster is needed. The patient re-

turns to his work immediately and suffers but little inconvenience. The operation in the female is more difficult, but, if skillfully done, no more hazardous. The oviduct is reached through a median incision, the tube ligated near the uterus and severed beyond the ligature.

9. **Blood Smears.**—Hayhurst states that satisfactory blood smears may be made by following specific directions. The Harlow stain for blood smears is utilized in a one minute method so that it stains everything with perfect satisfaction; it is simple, convenient, and dependable. The physician prepares his own stains to start with. The stain solutions are always ready and keep indefinitely. The stain and method of staining are recommended for dried smears of all kinds. Peebles' and Harlow's observations on corrections of faulty eosin methylene blue stains render control practically absolute.

MEDICAL RECORD.

December 4, 1909.

1. The Fundamental Functions of the Muscle Cells of the Cardiovascular System, with the Suggestion of a Classification of Arterial Disorders.

By LOUIS FAUGÈRES BISHOP.

2. Early Trephining for Severe Injuries of the Skull with a Report of Cases Operated upon, by M. S. KAKELS.

3. Cancer of the Female Breast, By JABEZ N. JACKSON.

4. A Supplemental Report on the Operative Treatment of Gonorrhoeal Epididymitis, By FRANCIS R. HAGNER.

5. A Urinary Protein Resembling Bence-Jones Albumose, with Clinical History and Post Mortem Findings,

By J. E. DALE.

2. **Early Trephining for Severe Injuries of the Skull.**—Kakels says that the few conditions resulting from traumatism either to the calvarium or its contents, namely fractures with or without depression, hæmorrhage, serous effusion or laceration of the brain or its meninges, are limited. The most important factors in determining us to make a presumptive diagnosis so that we may promptly arrive at a conclusion are: 1. History of severe injury to skull; 2, state of consciousness; 3, condition of pulse and its rate; 4, the arterial tension; 5, the temperature; 6, focal symptoms if patient is conscious; 7, later headache localized or diffuse, and finally choked disc. The majority of cases, with the history of severe head injury, with more than one of these factors, warrants operative interference if life is to be saved or future complications or sequelæ avoided. Of course, whether to operate early or to wait is a question upon which surgeons may differ. The indications are clear in many cases, but it is the border line ones which tax our judgment. To wait until the onset of such symptoms, as are indicative of destructive conditions, adds only reproach to surgery, for then it is too late. One should bear in mind and recognize the serious consequences which may arise in unoperated cases, and appreciate the gravity of infection, of hæmorrhage, and pressure. A definite suspicion of intracranial lesion from our experience warrants exploratory operation. The institution of operative procedures immediately following the establishment of some lesion seems to be imperative. There is no undue risk in trephining, if strict aseptic precautions are taken. It is difficult and frequently impossible to distinguish clinically epidural from subdural hæmorrhage or serous effusion, but each requires trephining from the fact that

the opening in the skull relieves pressure and affords room for the expansion of the compressed cerebrum. Epidural hæmorrhages are easily accessible, the operation for the same does not involve much risk, while the subdural ones are much more serious as they involve the greater liability of cerebritis and hernia, but the dangers of hernia and encephalitis from opening the dura are controllable and are minimized by strict asepsis and careful closure of this membrane. Recognizing and appreciating the serious risk of pressure from blood, bone, serous effusion, or œdema of the brain itself, besides the great dangers of meningitis and encephalitis, relief should be early and promptly applied. The technique of craniotomy is simple and the cavity of the cranium can, under strictest asepsis, be invaded with as great impunity as any of the other of the body. While it is true, in a great many cases of severe traumatism to the skull, intracranial lesion may be presumptive, and though it would seem that an exact knowledge of what is to be encountered is essential before trephining, from his experience the value of an explorative incision nevertheless has not been overestimated and cannot be gained, even though the nature of the cranial lesion was conjectural. The propriety of exploring fractures of the cranial vault by incision of the soft parts and elevation of bone, if depressed, is conceded by the majority of surgeons. In compound fractures, exploration is positively indicated. In presumptive simple fractures, with a history of severe trauma, whether a depression is felt or not, whether there exists a hæmatoma or not, and with general symptoms, such as the state of consciousness, character of pulse, temperature, and respiration, accompanied with muscular or nervous symptoms, expectant treatment is hazardous.

3. **Cancer of the Female Breast.**—Jackson states that at least ninety to ninety-five per cent. of all tumors of the breast are malignant and no possible intelligence can determine which of the remaining ten per cent. will remain benign. There is no known cure for any tumor of the breast, benign or malignant, except through surgical removal. From twenty-five to fifty per cent. of cases of breast cancer are permanently cured by radical surgical removal. With early diagnosis this percentage could be raised to eighty per cent. Every tumor of the breast, therefore, should be considered malignant and treated as such at the very first moment of its detection, unless incision has proved it benign, in which instance local excision should at least be insisted upon. To trifle with tumors of the breast is, therefore, practically nothing short of criminal.

LA PRESSE MEDICALE.

September 25, 1909.

Intoxications from Cheese, By A. FONTEYNE.

Intoxications from Cheese.—Fonteyne reports a gastrointestinal epidemic in a small town. All patients had partaken of a cheese which had been sold; some suffering more than others, but all recovering. Fonteyne found in the cheese a special coccobacillus, distinct from the paratyphus bacillus.

September 29, 1909.

An Early Diagnosis of Congenital Luxation of the Hip Joint in Infants, By M. J. GOURDON.

Early Diagnosis of Congenital Luxation in the Hip Joint of Infants.—Gourdon gives three clinical symptoms which will be of help in diagnosing congenital luxation of the hip joint. He says that the term congenital luxation is wrong, as the luxation is not present when the infant is born but develops later, sixteen, eighteen, twenty, or even twenty-two months after birth, as soon as the child commences to be about. The symptoms are, a cracking noise of the articulation, the difference in the length of the adducting folds, and the exaggerated inward rotation of the femur. When these signs exist one is able to prognosticate the appearance of such a luxation.

October 2, 1909.

Measures to Prevent Operative Infections, By T. TUFFIER.

October 6, 1909.

Diagnosis of Echinococcus Diagnosis by Fixation Reaction, By G. TAISSIEU and L. TIXIER.

October 9, 1909.

1. A Form of Spasmodic Paralysis in Inherited Syphilis in Infancy, By A. B. MARGAN.
2. Contribution to the Study of Numerical Atrophy, By F. TRÉMOLIÈRES and A. GALLAIS.

2. **Numerical Atrophy.**—Trémolières and Gallais give a historical review of the literature of numerical atrophy, to which they add few observations of their own. It is a form of atrophy attacking a region which has received during growth, especially in infancy, an injury, and which region does not develop as normally as it should; but always only one sided. The atrophy attacks all the tissues, the skin is less thick, the cellular tissue is not present in such abundance, the muscles and the bones are less developed as in the corresponding healthy region. But there is no alteration in the skin, no motor trouble, no modification of the tendinous reflexes, as in other atrophies; there is, in short, no degeneracy. The anatomical elements of the bones, the muscles, the nerves are the same, have the same aspect as in the healthy side, but are less in numbers. From this is derived the name numerical atrophy as distinguished from quantitative or degenerative atrophy.

October 13, 1909.

General Spinal Anæsthesia, By T. JONNESCO.

General Spinal Anæsthesia.—This article appeared in English in the *British Medical Journal* of November 13, 1909, which has been reviewed in our *Journal* of December 4th, on page 1133.

October 16, 1909.

Secondary Infection with *Staphylococcus aureus* in Tuberculous Pneumothorax. Study of Digestive Reaction of the Leucocytes,

By A. COYON and NOËL FIESSINGER.

Secondary Infection with Staphylococcus aureus in Tuberculous Pneumothorax.—Coyon and Fiessinger have observed a case of secondary *Staphylococcus aureus* infection in a young man who suffered from an attack of purulent pleurisy of the right side, followed during convalescence by a left sided attack. Exploratory punctures showed seropurulent fluid, later with *Staphylococcus aureus*, when the pneumothorax disappeared and the patient recovered. Thus, the authors conclude, a secondary infection can be of benefit and hasten recovery. In this case the secondary infection re-

sulted in the increase of the polynuclears which dissolved the microbic elements.

October 20, 1909.

1. Progress of Medicine and Surgery. The Law of Louis, By A. CHAUFFARD.
2. Is Lordosis the Cause for Orthostatic Albuminuria? By G. SCHREIBER.

LA SEMAINE MEDICALE.

September 29, 1909.

Determination of Primary Focus in Generalized Malign Tumors, By B. HUGENIN.

October 13, 1909.

Subclavicular Dilatation as a Sign of Plethora,

By C. TRUNECEK.

Subclavicular Dilatation as a Sign of Plethora.—Trunecek remarks that the subclavicular dilatation is an important sign in the diagnosis of plethora, as it demonstrates that the vascular system contains too much blood; furthermore, this sign is easily recognized while the other pathognomic symptoms of plethora, besides not being sure, are not so well developed and need much time to discover them. The sign is also of value in prognosis and treatment, as the dilatation grows with the increasing amount of the blood and calls for a venesection to reduce the excess of blood. When sufficient blood has been withdrawn the dilatation itself decreases.

October 20, 1909.

1. Heart Pulsation and Arrhythmia, By H. VAGUEZ.
2. Treatment of Varices by Intramuscular Inclusion of the Veins, By M. KATZENSTEIN.

2. **Treatment of Varices by Intramuscular Inclusion of the Veins.**—Katzenstein has embedded the varicose veins into the musculature of the thigh with the intention to obtain a physiological cure of the varices, as the contractions of the muscles can be used to regulate the stream of the venous blood. He, therefore exposes the varices, which he isolates, and opens the aponeurosis; then he divides the muscle tissue, following the direction of the fibres and includes in the place thus formed the dilated vein, the muscle opening is then closed over the vein by a continuous catgut suture. The operation is finished by suturing the aponeurosis and the skin. He has used this method with excellent results in six patients with large varices.

MEDIZINISCHE KLINIK.

October 17, 1909.

1. Critical Remarks Concerning the Pathogenesis of Eclampsia and Its Treatment, By P. BAUMM.
2. Disturbances in the Sympathetic and Their Relations to the Psychoneuroses, By JOHANNES KYRI.
3. Peru Lenicet. Contribution to the Treatment of Purulent and Ulcerative Processes with Balsam of Peru, By WILLY PULLMANN.
4. The Operative Treatment of Xerosis Conjunctivæ Corneæ, By LIBANSKY.
5. Contributions to the Therapeutic Use of the Blue Arc Light, Especially in Surgery, By ERNST MOSER.
6. A Remarkable Case of Azoospermia, By PAUL GROAG.
7. The Autolytic Processes in Tumors, By F. BLUMENTHAL, E. JACOBY, and C. NEUBERG.
8. The Transplantation of the Thyroid Gland (Concluded), By E. BIRCHER.

1. **Eclampsia.**—Baumm emphasizes the following points: The source of trouble should be removed as soon as possible; i. e., each patient should be delivered immediately after the first attack. Unfortunately this is not always possible, as many wo-

men come under observation too late for an early delivery to be performed. The mortality after early delivery is given as 6.5 per cent., that after rapid delivery, that is delivery not in the beginning of the disease, but as soon as possible under the circumstances, 17.2 per cent., that after the expectant treatment 28.6 per cent. The poison collected in the body must be eliminated. After the removal of the source of trouble the danger is not over, as is shown by the occurrence of puerperal eclampsia. Hence it is needful to look carefully after the excretory organs, the kidneys, the skin, and the lungs. Diuretics that act through elevation of the blood pressure, such as caffeine, or digitalis, should be given first and then, if the effect is insufficient, diaphoresis should be added. Whether this should be combined with infusions of salt solution given per os, per anum, or subcutaneously, is uncertain as it remains questionable whether we thus attain in reality the intended washing out of the organism, but at any rate it can do little harm. The same cannot be said of pilocarpine. Decapsulation of the kidney is indicated only when the diuresis has fallen to a point that threatens danger and can be raised by no simpler means, for the renal lesion is only a local symptom of the eclampsia and treatment of the kidney is not directed toward the cause. As eclampsia is very probably due to a poisoning it should be considered how to make the poison harmless by an antibody. Another indication is the suppression of the convulsive attacks by means of morphine, chloroform, and chloral. Chloroform is generally considered harmful, while morphine is used to a considerable extent, though the author thinks it not only useless but dangerous. On the other hand, he considers chloral given per rectum to be harmless even in large doses. Finally the heart and lungs must be carefully watched from beginning to end. The heart should be supported with caffeine and camphor, and when necessary artificial respiration should be practised for hours at a time with cold sponging in the intervals.

3. **Peru Lenicet.**—Pullmann speaks very highly of this dressing for wounds. It is composed of 7.5 per cent. balsam of Peru, 15 per cent. lenicet, and the balance very finely pulverized talc.

4. **Operative Treatment of Xerosis Conjunctivæ Corneæ.**—Libansky reports a case in which he performed a series of operations to relieve the conditions in the eyes of a man, forty-seven years old, including xerosis, caused by trachoma of long standing and now in the cicatricial stage. The procedures were begun in 1903, and in May, 1908, the lids were sutured together leaving only a minute opening for vision, in an attempt to do away with the xerosis. On the first of February, 1909, the lids were separated again and the result seemed excellent, but within two weeks the condition was the same that it had been before operation.

5. **Therapeutic Use of the Blue Arc Light.**—Moser reports a case of closure of a fistula after an operation for empyema of the pleura, a case of successful treatment of a large ulcer of the leg, a case of softening of a scar after operation, and a case of closure of a persistent fistula following a phlegmon in the sole of the foot, all attained by

irritation with the blue arc light. Several other cases are also described more briefly in which lesions of various natures were treated in the same way.

6. **Azoospermia.**—Groag reports a case of this nature met with in a man, thirty-five years old, who had been married thirteen years but had had no children. He was found to have azoospermia mechanically produced by an infiltration in the globus major of the epididymis on each side.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 19, 1909.

1. Viscosity, Hæmoglobin, and Albumin of the Blood of Children, By TRUMPP.
2. Radium Treatment of Malignant Tumors, By CAAN.
3. Thrombophilia and the Early Rising of Lying in Women and Persons on Whom Laparotomy Has Been Performed, By MENDEL.
4. The Influence of the Sinusoidal Four Cell Electric Baths upon the Work of the Heart, By VIEL.
5. Narcosis with Artificially Reduced Circulation, By HÖRMANN.
6. Preliminary Communication Concerning a Special Muscular Connection between the Cava Superior and the Bundle of His, By THOREL.
7. Nephritis, By CASPER.
8. Graphic Methods for the Registration of Cardiac Sounds, By SEDDIG.
9. Further Experiences with Alypin as a Local Anæsthetic, By BUBENHOFER.
10. Amaurosis during Pregnancy, By HIMMELHEBER.
11. Aneurysms of the Trunk of the Pulmonary Artery, together with Remarks Concerning Murmurs in this Vessel, By REICHE.
12. Concerning an Intraventricular Tumor of the Brain With Areflexia of the Cornea, By ROSSBACH.
13. Bird Protection in Hospitals, By BRUNN.
14. Assuan, an Ideal Winter Home, Particularly for Nephritic Patients, By WAUER.

1. **Viscosity of the Blood of Children.**—Trumpp believes that by means of the measurement of the viscosity of the blood in children an approximate estimate may be obtained of the water, the albumin, and the carbon dioxide contained in the blood.

2. **Radium Treatment of Malignant Tumors.**—Caan considers the results obtained by radium treatment in 110 cases of malignant tumors, of which eighty-eight were carcinomata, nine sarcomata, eight generalized lymphosarcomata, and five non-malignant conditions. In about seventy patients the treatment was accompanied by noteworthy results. Thirty-six patients were treated exclusively with radium and in twenty there was a visible benefit. First as regards the carcinomata, in twenty-three patients out of thirty cases of recurrent carcinoma of the breast there was a marked improvement of both the subjective and objective condition; in several patients there was a purely subjective improvement, the pain was lessened or removed, they were able to sleep, their appetites improved, and their general conditions were bettered. Very advanced cases, for example, those with extensive pleural exudates of carcinomatous origin, were not affected. In eight patients out of fourteen cases of cancer of the stomach treated with radium water internally, radiol cushions on the pit of the stomach for an average of eight hours a day, x rays, and drugs, improvement was marked, especially of the subjective condition. A similar result was obtained in a cancer of the œsophagus. A good influence was also

obtained in three cases of recurrent carcinoma of the rectum and in three inoperable carcinomata of the pharynx. In the remaining cases of carcinoma treated the results were less clear or altogether wanting. The influence exerted on sarcomata was much less than that on carcinomata, as only two seemed to be affected, while in all the eight cases of lymphosarcoma the effect produced was very pronounced.

4. Sinusoidal Four Cell Electric Baths.—Veiel says that the sinusoidal four cell baths act upon the heart in a manner similar to that of the carbonic acid baths. Great care must be observed in the dosage, which must be governed by the condition of the patient. A feeling of distinct weariness that does not disappear after a short rest indicates that a weaker current must be used at the next sitting. These baths are indicated principally when we wish to obtain a mild balneotherapeutic stimulation of the cardiac activity, and carbonic acid baths are contraindicated for any reason.

5. Narcosis with Artificially Reduced Circulation.—Hörmann finds that if the circulation is reduced by cutting off the portion in the lower limbs by means of Esmarch's bandage a smaller quantity of the anæsthetic, especially of chloroform, will be needed; that the waking from the narcosis will be notably quick; and that the cut off blood laden with carbonic acid can be utilized for the removal of the asphyxia. Contraindications to this measure are the presence of marked varicosities on the lower limbs and arteriosclerosis. Bad results have not yet been seen. The technique is very simple and can be readily employed by any physician.

12. Intraventricular Tumor of the Brain.—Rossbach gives the clinical history, symptoms, and pathological findings in a case of angiosarcoma that sprang from the venous plexus of the right posterior cornu of the lateral ventricle, displaced and slightly softened the surrounding brain substance, and caused great compression of the left hemisphere. Among the other symptoms it was noted that the corneal reflex of the right eye was plus, that of the left eye minus.

AMERICAN JOURNAL OF SURGERY.

November, 1909.

1. Some Experiments in Certain Methods of Intestinal Anastomosis. By CONRAD GEORG, JR.
2. On the Surgical Relations of the Intestinal Gases with Deductions Concerning Preoperative and Postoperative Treatment. By BYRON B. DAVIS.
3. Two Cases of Septicæmia Following Submucous Resection of the Nasal Septum; One Death, One Recovery. By HAROLD HAYS.
4. Spoon Enucleation of the Tonsil. By A. MORGAN MACWHINNIE.
5. Tracheotomy for Foreign Bodies in the Air Passages; Based Upon Fifty-three Successful Cases. By W. F. WESTMORELAND.
6. Treatment of Eclampsia. By FREDERICK C. HOLDEN.

1. Intestinal Anastomoses.—Georg observes that the method of Parker and Kerr is the most practical for end to end anastomosis, and that of Capek for lateral anastomosis and gastroenterostomy. Georg describes Parker and Kerr's method: Three needles are plunged into the lumen of the bowel at its free border and brought out again about one quarter of an inch from the point of entrance. They are placed about one half an inch apart, par-

allel and at right angles to the bowel axis and plane of the mesentery. The clamps are then placed beneath these needles so as to grasp the intestinal wall between the points of entrance and exit of the needles and the operation is completed the same as in end to end anastomosis. This operation cannot be regarded as aseptic, as the lumen of the bowel is penetrated and infection may be carried to the peritonæum in this way. Of E. Capek's method he says: The communication is not established at the time of operation, but in about twenty-four hours. The loops of intestine which it is necessary to anastomose are joined with a continuous seromuscular stitch applied near the mesenteric border. About ten millimetres from this suture an incision is made of the length of the proposed anastomotic opening and within the limits of the length of the suture. This incision is made only through the serous membrane and muscular coats exposing the mucosa. The length of the incision varies with the portion of the intestinal tract involved. The field of operation must be kept free of blood by ligating the vessels and applying a hot sponge to control the capillary ooze so as to avoid cutting the mucous membrane. The edges of the incision are then spread two to three millimetres apart and the submucosa and mucosa cauterized with Capek's cautery. The cauterized areas are brought into perfect apposition by means of two rows of interrupted seromuscular stitches, one placed internal to them and the other external so that the corresponding edges are accurately apposed. Finally the whole wound is covered in with a continuous seromuscular stitch.

2. Surgical Relations of the Intestinal Gases.

—Davis has found in his clinical work that postoperative tympany and trouble in securing intestinal evacuations have decreased in proportion to the care used in keeping the operating room warm and the exposed coils of intestines protected by pads wrung out of hot normal salt solution. Even the slightest abdominal sections done with equal care in handling, but in a cool operating room and without the protection of hot pads, have been followed by a stormy period of tympany and other disagreeable symptoms which accompany this condition. If much tympany is present before operation it is usually the results of gas formation by fermentation of the food residue. To obviate trouble from this cause the use of laxatives before operations is wise, but it is liable to be overdone. A very brisk cathartic, acting violently, not only clears out the contents of the intestine but exhausts the contractility of its muscular coat. Postoperative treatment should be as simple and natural as possible. No starvation, unless the stomach or small intestine is in a condition to prohibit food, but also no forced feeding at first. The weakness which follows denial of all food, and the discomfort and disgust of too much should alike be avoided. Water given as soon as the patient calls for it has been found greatly to promote comfort and a feeling of well being. It also seems to encourage postoperative peristalsis. Something to promote early restoration of peristalsis is of great importance if a patient would pass a comfortable convalescence. For fourteen years he had made a routine use of strychnine hypodermically after operations, not so much as a heart stimu-

lant as to encourage peristalsis. Of late, he has used in severe cases eserine salicylate in doses of 1/60 to 1/40 grain hypodermically, with good success.

4. **Spoon Enucleation of the Tonsil.**—MacWhinnie uses a spoon which he has himself devised. After cocaineization the tonsil is grasped well into the supratonsillar and the intratonsillar fossæ so as to engage the capsule as well as the tonsil. Otherwise we might grasp the tonsillar tissue, which is soft and readily tears out. A tongue depressor is not necessary, the handle of the volsellum taking its place. The spoon is then entered between the posterior pillars and the tonsillar capsule and made to rapidly separate from below upward to the supratonsillar fossa. The spoon is then moved rapidly forward, separating the tonsil as it comes forward from the connective tissue beneath. The same process is carried out inferiorly and anteriorly. This spoon has semisharp edges which act better as a separator on the connective tissue than a sharp instrument would do, without running the risk of leaving some of the capsule. The spoon fits so accurately over the tonsil that injury to the pillars need not be considered. The extreme traction by means of the volsellum brings the tonsils so well forward into the pharynx that it makes very little separation necessary.

THE MILITARY SURGEON.

November, 1909.

1. Address of the President of the Association of Military Surgeons of the United States, Eighteenth Annual Meeting, Washington, D. C.,

By SURGEON GENERAL RIXEY.

2. Surgeries on Board Warships for Use during Action,

By B. TOMATSURI.

3. Diagnosis Tallies for Wounded in War,

By ALEJANDRO ROSS.

4. The New Regulations for Ambulance Trains in the Austro-Hungarian Army,

By JOHANN STEINER.

5. Treatment of Hemarthrosis of the Knee, By ROUTTE.

6. On the Operation of Ricard, By ROUTTE.

7. Some Notes on the Diet of Chinese Soldiers,

By YING YANG TSUI.

8. Tuberculosis and Trauma,

By C. SFORZA.

9. Some Methods of Wound Treatment and Sterilization Appropriate for Use in the Field,

By ALEXIUS MCGLANNAN.

10. Compound Fractures of the Extremities and Their Treatment,

By F. C. FLOECKINGER.

11. The Importance of Alcohol, Heat, and Acute Infectious Diseases in the Etiology of the Mental Diseases Occurring in the United States Army the Past Ten Years,

By R. L. RICHARDS.

2. **Surgeries on Board Warships for Use during Action.**—Tomatsuri speaks of the experience gained by the Japanese navy during the Chinese-Japanese war and the Russian-Japanese war. A surgery should be placed in the middle of the width of the ship, with passages and means of access on both port and starboard sides, which situation will be found convenient for the conveyance of wounded to the surgery for treatment, and, from the surgery to the emergency sick wards after treatment. If the proper care is taken in the construction and equipment of a surgery placed on either the port or starboard side, this will not cause much inconvenience. Attention should also be paid to the following points: When the surgery is established near the engine room or funnel casing, the tempera-

ture is liable to be raised, to the detriment of the surgeon's work. If circumstances do not allow avoidance of such a location absolutely some heat proof, nonconducting material should be provided for the portions especially exposed to the heat, *e. g.*, the partitions, floor, etc. It is not of primary importance that the surgery should be well supplied with natural light. Operations to be performed in a surgery on the lower deck want always a good artificial light. It is important to have a good installation of electric or other means of illumination. Hatches or ladders should be provided near the surgery for the safe conveyance of the wounded from the upper or main deck by means of stretchers or by hand. There should also be, close to the surgery, a hatch provided with an elevator. Temporary reception wards for wounded, both those awaiting treatment and those who have been treated by the surgeons, should be provided in some safe place near the surgery. For this purpose the passages in the lower deck and other vacant places may well be utilized. A location should be chosen for a surgery as free as may be from the dust of coal, gun powder, and other substances, and as little exposed as may be to the vibration caused by the discharge of big guns.

3. **Diagnosis Tallies for Wounded in War.**—Ross remarks that diagnosis tallies are of vital importance to the wounded in war, since they serve as a memorandum to the clinical history of the patient, the wound itself, its attendance, treatment, or operation, actual and subsequent results, and in brief give the requisite data so that the surgeons in charge may know how to proceed in each case. These tallies obviate the necessity of a search for the wound and the consequent loss of time, they also save the patient needless suffering and the danger which might occur from disturbing the bandages. The tally is of cardboard, thick or thin, in France, Germany, Italy, Japan, Portugal, Roumania, Spain, Switzerland, etc.; this is also true of diagnosis tags in England, Holland, Norway, Denmark, Sweden, and the United States. The form generally used by those countries is rectangular and the sizes vary from 3 to 7 inches in length by 2 to 4 inches wide. They are attached by a string, wire, or buttonhole arrangement. Both sides of the tally are used, on one is entered the name of the patient, his regiment, rank, etc., and on the other information as to the wound, situation and character thereof, attendance, etc., all of which is written in the languages of the respective country, which may be unknown to the surgeon of another nation into whose hands the wounded man may fall by the chances of war. Lastly, stripes of color are employed, generally on the edges, to distinguish the wounded, as to whether their injuries are more or less serious, their diagnosis and prognosis, and if they are able to bear transport. This difference in the use of colors among nations causes confusion. Ross agrees with Colonel MacPherson of the British army that the tallies should all be similar, that the colors should only be used to show to what extent the patient is able to bear transportation, and that certain geometrical signs should be adopted, quite distinct from each other, to show the nature of the wound.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF PENN SYLVANIA.

Meeting held in Philadelphia, September 27, 28, 29, and
30, 1900.

The President, Dr. GEORGE W. WAGONER, of Johnstown,
in the Chair.

(Continued from page 935.)

DISEASES OF THE NERVOUS SYSTEM.

Special Features in the Symptomatology and Pathology of Anæmia of the Cerebral Nervous System.—Dr. SAMUEL LEOPOLD, of Philadelphia, said that he had analyzed the changes found in the brain and spinal cord of six cases of anæmia of the cerebral nervous system. He also discussed some of the more unusual clinical symptoms in eight cases. The chief features noted were, the variability in the character of the symptoms, the difficulty of diagnosis when a girdle zone of hypæsthesia and pain were present, the presence of muscular atrophy in one case, the sudden onset in another, developing within twenty-four hours. The unusual features in the pathology of the cord consisted in the unilateral involvement of the cross pyramidal tract in one case and the involvement of the medulla at its upper level in another. No one case was similar to the other, all showing varying stages in the process, from islandlike foci in the posterior and lateral columns to diffuse degenerations of the entire cord. The changes found in the cerebral cortex consisted in cloudy swelling, chromatolysis and migration of the nuclei, and congestion of the bloodvessels. The mental changes were briefly noted and consisted in varying pictures from stupor and mental apathy to emotional irritability and delirium.

The Nervous System in Leuchæmia and Hodgkin's Disease.—Dr. ANDREW H. WOODS, of Bryn Mawr, remarked that the nervous findings were much alike in the two conditions. The principal symptoms observed in leuchæmia were enumerated, also those of Hodgkin's disease, and a comparison given of the lesions found at autopsy in the two diseases.

A Case of Raynaud's Disease, with Polycythæmia, Cyanosis, and Enlargement of the Spleen: Gangrene of the Toes: Amputation of Both Legs.—This paper was contributed by Dr. MORRIS BOOTH MILLER, Dr. R. MAX GOEPP, and Dr. JAMES A. KELLY, of Philadelphia. Dr. R. MAX GOEPP stated that the patient was a Russian jew, forty-five years of age. Family and previous histories contained nothing of interest. In October, 1907, pain, redness, and a sensation of cold made their appearance in the toes of both feet. Eight months later, in June, 1908, gangrene developed in the right foot. Constitutional and local treatment, including x rays, remained without effect. The right leg was amputated in November, 1908, thirteen months after onset of first symptoms. Three months later gangrene appeared in the left foot, necessitating amputation of the left leg on April 13, 1909. Polycythæmia, cyanosis, enlargement of the spleen followed, while heart and lungs presented no gross abnormalities, and the blood pressure was normal or

slightly elevated at times. Coagulation time was greatly shortened.

Exhibition of a Case of Symptomatic Raynaud's Disease.—Dr. JOHN H. MUSSER, of Philadelphia, remarked that this case was one, at least, of symptomatic Raynaud's disease, but there were many features to be considered in the determination of its nature and the possibility of it being one of pellagra. The patient, a young woman of twenty-two, was by occupation a seamstress. She was perfectly well until four years ago, when striking her finger with a needle it became swollen and painful. The other three fingers became affected and the first finger had to be amputated. Since that time the condition had affected both arms and both legs, the chest, and the trunk. The parts affected became white and red and at times black. The five toes of the right foot were amputated because of sloughing after turning black. The conditions indicated a neurotic type of patient. There had been attacks amounting almost to hysterolepilepsy. The other most important symptoms were occurrence of sore mouth and enteritis. He was not prepared to say that it was a case of pellagra. One other condition suggested to him was that of leprosy, the deformities being much like those seen in the latter stages of leprosy. There was some toxic condition which was causing the circulatory phenomena and also the nervous manifestations. This, however, did not explain the other conditions present.

A Metabolic Study of Dr. Goepp's Case of Raynaud's Disease.—Dr. THOMAS STOTESBURY GITHENS, of Philadelphia, discussed the case of Raynaud's disease reported by Dr. Goepp. He stated that the patient was put on a fixed diet and the urinary nitrogen was studied. A normal individual on such a diet showed an almost constant proportion between the various nitrogenous constituents of the urine. This patient showed extreme irregularity from day to day but no marked peculiarity in the total exception of any normal constituent. On two days, however, there was found a large amount of cystin. No putrescin or cadaverin was present. The presence of cystin pointed to the occurrence of putrefaction, almost always intestinal. The coincidence of cystinuria with Raynaud's disease or even with gangrene was, as far as could be ascertained, unique.

Dr. MORRIS BOOTH MILLER observed that he was particularly interested in two features of this man's case: 1. The very curious effect his coagulation period had upon the flaps. After the arteries were tied there was practically no bleeding and the appearance was almost waxy. 2. The extreme pain present throughout the entire period of suffering was not relieved by amputation but was relieved when his stumps were thoroughly healed. He believed that in the treatment of Raynaud's disease, while local treatment was strongly suggested, as a rule it was dangerous and more apt to create trouble than cure the condition. He thought that the milder measures such as elimination, external warmth, and the appropriate internal medication was all that we could do. When gangrene did appear the case should be treated surgically.

Dr. GOEPP in closing said that the patient was first subjected to x rays and with some apparent relief, but this was only temporary and the condi-

tion grew worse. He seemed to respond for a time to thyroid extract but this was only for a short period. The blood did not present any increased pressure and only a slight deviation from the normal.

Cerebral Lesions Causing Symptoms of Brain Tumor.—Dr. WILLIAM G. SPILLER and Dr. CHARLES H. FRAZIER, of Philadelphia, were the authors of this paper. Dr. WILLIAM G. SPILLER stated that it was proposed in the paper to consider some rarer lesions of the brain which might simulate tumor closely, and because of their infrequency might be more likely to cause a mistaken diagnosis and even lead to operation. Of these lesions polioencephalitis, thrombosis of the cerebral arteries, and thrombosis of the venous sinuses were especially noteworthy. A case was reported in which it was evident that we had to deal with a focal lesion of the brain. Dr. Frazier operated over the left motor area. The microscopical examination revealed polioencephalitis. In another case the decision had to be made between cerebral thrombosis and brain tumor. The patient, a man, in the service of Dr. Musser, had had symptoms for about a year. After careful consideration, even though the diagnosis of thrombosis of the posterior branch of the middle cerebral artery was made as probable, exploration seemed advisable, as it was at least possible that a tumor might be found. Dr. Frazier exposed the brain with the posterior part of the left first temporal convolution as the centre of the opening. The operation revealed unmistakable thrombosis in the region diagnosed as affected, and the microscope showed softening. The man made an excellent recovery. A further case was reported illustrating the difficulty in diagnosis that might be occasioned by thrombosis of a venous sinus. The patient, a man, was referred to him by Dr. William Zentmayer, presenting the general symptoms of brain tumor of about a year's duration. The localization of the lesion was difficult, and subtemporal decompression alone was justifiable. The man died a week or more after the operation by Dr. Frazier. Dr. Karsner performed the necropsy. A thrombus was found in the inferior petrosal sinus extending into the cavernous sinus and causing a depression in the pons. It was about three quarters of an inch in thickness and about one and a quarter inches in length. The clot was well organized.

A Case of Brain Abscess, Operation, and Recovery.—Dr. B. M. DICKINSON and Dr. THEODORE DILLER, of Pittsburg, had collaborated this paper. Dr. THEODORE DILLER said that the patient, a married man, twenty-six years old, had a simple right mastoid operation in April, 1909. On May 18, 1909, he was readmitted to the hospital complaining of headache, vomiting, and failing vision. Examination revealed pus in the right ear and double optic neuritis. A radical mastoid operation was done in the hope that some indication might be found pointing to the location and nature of the intracranial trouble. No such indication was found, so the authors trephined about an inch above the meatus but found nothing except a slight haziness of the membranes and some increase of intracranial pressure. Five days later the patient had four convulsions, was delirious at times, and vomited often.

Dr. Diller, at this time, found marked decrease of power in the left hand as well as partial loss of stereognostic appreciation. The mouth was drawn to the right. Leucocytosis 23,260. Now, having definite localizing signs, they made a large opening over the middle lower Rolandic region and evacuated between two and three drachms of pus. Recovery was rapid and complete.

Dr. THOMAS GRIER SIMONTON felt that in many of these cases if exploration was made, even if the diagnosis was not clear, relief of the pressure symptoms would be accomplished.

Cerebrospinal Syphilis; Report of Five Cases with Necropsy.—Dr. S. D. INGHAM, of Philadelphia, read this paper. He called particular attention to the fact that all parts of the central nervous system were involved histologically in each of the cases, and that an addition to the larger lesions was found in the parts to which the clinical history pointed. Symptoms referable to the cord as well as to the brain often came on suddenly and were probably due to thrombosis. Internal hydrocephalus was present in varying degrees of severity in four of the cases, and it was probably more common in this condition than was generally supposed. It was probably caused by interference with the circulation of the cerebrospinal fluid. The five cases were reported in detail.

Two Cases of Traumatic Tetanus, One Ending in Recovery.—Dr. R. MAX GOEPP reported these cases. The first was the usual type of cases seen in hospital practice and terminated fatally at the end of a week. The patient was a colored man, adult, admitted with the statement that he had been suffering for two days with tetanic convulsions. The chief point of interest was that although there was no history of any infection, no wound could be observed either on the cutaneous or mucous membrane and the man who was quite conscious at first remembered no injury that could have given entrance to the bacillus. The second case was a boy of eight years. Invasion was through an infected wound of the leg inflicted with a sharp stick from a stableyard. The period of incubation was about twenty days. He was treated with tetanus antitoxine and spinal injections of a twenty-five per cent. magnesium sulphate solution. The active period of disease was fourteen days, during which eleven injections of antitoxine (3,000 and 5,000 units) and twelve intraspinal injections of magnesium sulphate (2 c.c.) were given. The antitoxine was given subcutaneously and intravenously. The patient recovered.

Congenital Word Blindness as a Cause of Backwardness in School Children. Report of a Case Associated with Stuttering.—Dr. E. BOWORTH MCCREADY, of Pittsburg, read this paper. He said that although only some forty-one cases had been closely observed of this condition, the number represented but a small proportion of the cases. That there was a distinct hereditary influence there could be no doubt. In two of the cases reported development in other directions was slow, while other cases showed evidences of a neurotic tendency. In nearly every case the patient, with the exception of his visual defect, was of average or above average intelligence. In the case reported

the patient was twenty years of age; family history was negative; he had had enteritis when an infant. At the age of four years he had an attack of pneumonia with cerebral symptoms. Great difficulty in reading from the time he first went to school. He began to stutter from fright at the age of ten, and could recognize letters and numerals but very few words. He was of average intelligence but much retarded on account of defects. The object aimed at after correction of the speech defect was the development of the visual word centre in the right hemisphere, and the establishment of functional relationship between it and the auditory word centre as well as Broca's centre in the left. His improvement had been most satisfactory.

G. HUDSON MAKUEN observed that congenital word blindness had received little attention because it was very difficult always to be sure that it was congenital, and also because of the rarity of the affection. The distinctive diagnosis was very difficult in children. He recently had seen a case of acquired word blindness in a woman highly educated. She slipped on the street striking her head and the condition ensued. When a child failed to read or was slow in learning the same interest was not excited because many other things might cause the condition. Furthermore, the child had not the same past mental condition with which to compare the present. The most probable cause of the condition was that the child might lack a general cerebral development. It was quite possible that no two centres of any one brain were possessed of equal efficiency. In his series of cases of defective speech which numbered into the thousands there was not one of undoubted congenital word blindness.

The Home Treatment of Epilepsy.—Dr. MATTHEW WOODS, of Philadelphia, contrasted the home treatment of epilepsy with institutional treatment, and said that a number of patients had been exhibited who had been cured of epilepsy and had remained cured. Dr. Woods believed that in the home or small homelike sanatorium with the patient engaged in some safe and congenial occupation the patient might be of service to the community. In the institution, on the other hand, the patient's identity was often lost and he became a mere bit of driftwood in an economic sea. He might also be seriously disturbed by the alarming manifestations of the disease about him and from the disturbing presence of which he could not escape. Of thirty or forty cases which had been under Dr. Woods's care in the city none showed any evidence of the disease. While it might be possible that a person cured of epilepsy might get the disease again, in Dr. Woods's opinion, it did not follow that the patient had not been cured.

Relation of Epilepsy to Menstrual Periods.—Dr. ALFRED GORDON, of Philadelphia, reviewed various opinions held in regard to the pathogenesis of epilepsy and called special attention to a faulty metabolism caused by diseased glands of internal secretions. He gave his experience in treating various nervous disorders in women from whom the ovaries were removed. He placed special emphasis on twenty-three cases collected by him during a period of seven years, cases in which epilepsy coincided with menstrual periods. The patients were totally free

from seizures between the periods and invariably had them around that time. The administration of ovarian extract over a period of four months failed to relieve the condition. Extract of thyroid gland was administered in every one of the cases between the individual attacks, and only a few days before the menstruation bromides were given. All the patients were benefited considerably in the increased length of the intervals between the seizures. No claim was made for a cure of epilepsy, but in view of the frequently unsuccessful battle with the malady, if we were able to devise methods of treatment which gave favorable results, such observations should deserve attention.

Dr. J. MADISON TAYLOR remarked that the treatment which Dr. Woods has carried out in these cases of epilepsy had impressed him greatly. The contrast between the value of home treatment and institutional treatment was obvious. Dr. Woods had made a very strong argument in favor of home treatment and his methods had been remarkably successful.

In closing Dr. GORDON said that from a neurological standpoint he could safely say that among a very large number of cases of epilepsy we did not know of a cure. Dr. Woods's success was certainly great. He had succeeded in enlarging the intervals between the attacks, but Dr. Gordon did not think it could be said that epilepsy could be ever cured.

AFFECTIONS OF THE ALIMENTARY TRACT.

The Relations between Diseases of the Mouth and Systemic Diseases.—Dr. HERMAN B. ALLYN, of Philadelphia, read this paper. He observed that diseases of the gums and teeth were of great interest: 1. Because they showed manifest local disease with absorbent surfaces from which pathogenic bacteria might be carried to produce systemic disease, or local disease elsewhere; 2, because the diseases of the gums and teeth might be mere local expressions of systemic diseases. Carious teeth, gingivitis, and stomatitis not only lead to malnutrition but produced a foul mouth, from which were absorbed poisons which caused a variety of local and general disturbances. On the other hand, dentists had discovered that it was sometimes impossible to arrest erosion and cure gingivitis until a toxic state of the tissues was recognized and removed. The lesson to be learned was that the mouth should be carefully inspected both for the prevention of disease and for the diagnosis and cure of obscure metabolic disorders.

An Improved Apparatus for Testmeal Removal, Gastric Lavage and Inflation.—Dr. FRANCIS ASHLEY FAUGHT, of Philadelphia, remarked that by the addition of the apparatus devised by Dr. Daland, of a valve somewhat similar to that employed in certain steam engines which, because of the function which it performed, he had termed a reversing valve, all tube connections could be made before the tube was passed and the operator was given complete control of the flow of air or fluid by the simple turning of a lever. The parts of the apparatus were given and the method of its application outlined. Among the advantages of the method might be mentioned the ease and dispatch with which it could be carried out; its free-

dom from disagreeable features; uniformity of results and accuracy of findings; freedom from danger because of the feeble and easily controlled suction and pressure employed.

A Study of Hyperchlorhydria.—Dr. GEORGE MORRIS PIERSON, of Philadelphia, read this paper. He said that from an analysis of 300 cases of gastric hyperacidity it was shown that in 156 the abnormality in the gastric secretion was the result of a primary functional disturbance of the stomach, namely, hyperchlorhydria, while in the remaining 144 cases the excess of acidity was symptomatic of gastric dilatation, gastropoiesis, gastric ulcer, gallstones, etc. A further investigation of the 156 cases of hyperchlorhydria *per se* demonstrated that this condition was most commonly encountered during the second and third decades of life, that it was more frequent in men than in women, and that it was most often met with in those who lived under mental strain. Careless habits of eating, the use of coffee, alcohol, and tobacco predisposed to its occurrence. The symptomatology of hyperchlorhydria was found to be variable and the gastric symptoms usually regarded as characteristic did not occur with sufficient constancy to be of definite diagnostic significance. The digestive power of the stomach was found to be good in hyperchlorhydria. Anæmia was not as a rule found to accompany hyperchlorhydria.

Pylorospasm.—Dr. JOHN J. GILBRIDE, of Philadelphia, stated that the condition, which was only a symptom occurred most frequently in gastric and duodenal ulcer, gastrosuccorrhœa, and in other conditions in which there was an associated increase in the hydrochloric acid secretion of the stomach. It occurred less frequently in gastric carcinoma, occasionally in disease of the biliary passages and pancreas, also in appendicitis, etc. Pain or cramp was the most prominent symptom and it varied in intensity, duration, and recurrence in each individual case. At the time of the spasm there was usually an increased peristalsis of the stomach, and when ingesta were present in the stomach vomiting might occur.

The Influence of Hydrogen Peroxide on Hydrochloric Acid Secretion.—This paper, by Dr. EDWARD H. GOODMAN, of Philadelphia, appeared in our issue of November 6, 1909.

The Symptom Complex of Pernicious Anæmia with Small Carcinomata of the Pylorus.—Dr. JAMES E. TALLEY, of Philadelphia, said that among the ætiological factors of pernicious anæmia, pyloric obstruction due to annular carcinomata or inflammation had been supplied. Lazarus suggested that small pyloric carcinomata without obstruction might sometimes be looked upon as the cause of the condition. These suggestions were made before the more recent studies of the hæmolytic and before the rôle that intestinal bacteria played in pernicious anæmia was known. The coexistence of pernicious anæmia and small pyloric carcinoma was probably but a coincidence. The patient in the case studied had an adenoma of the pyloric wall which was supposed at first to be an adenocarcinoma.

Dr. JOHN M. SWAN, of Philadelphia, stated in relation with Dr. Goodman's case and the therapeutics of hydrogen peroxide he should like to put on rec-

ord an empirical observation made by the students in his laboratory a year or so ago. A man from the Isthmus of Panama told him that his wife at one time had been very ill on the Isthmus with yellow fever and had black vomit; he had treated her with doses of hydrogen peroxide, after which the vomiting of blood ceased. Of course this was purely an empirical observation.

Dr. ALLYN in closing said that he wished to urge that examination of the mouth be made in all diseases systemic and local. We examined the tongue but the gums and the teeth needed careful study.

Dr. TALLY asked how the hydrogen peroxide affected the teeth in giving the test meals?

Dr. GOODMAN answered that he had not noticed any effect on the teeth, but the time has been very short. The action of the peroxide appeared to be so rapid that long treatment was not indicated.

Food Poisoning. Acute Accumulative Protein Poisoning.—Dr. G. MORTON ILLMAN, of Philadelphia, thought that the condition resulted from an overfeeding with meats, particularly raw beef. Chronic protein poisoning was a common condition in the adult, but typical acute cases were not of common occurrence. It was not the result of putrefaction in the gastrointestinal tract, nor the eating of spoiled food, and was not in this sense an autointoxication. Dry and scaly skin conditions (especially ichthyosis) were ætiological factors. The symptoms were many and complex but systematic in their occurrence. The importance of diagnosing protein poisoning before the acute stage was reached was emphasized. A report of two cases showed a high grade of sclerosis of the retinal vessels causing almost complete blindness. Treatment resulted in recovery of vision.

Isohæmolysis in Human Sera and their Diagnostic Value.—Dr. H. G. SCHLEITER, of Pittsburgh, from a study of this subject, concluded that: 1. The hæmolytic reaction in the diagnosis of malignant disease was not specific, yet it appeared in a larger percentage of malignant neoplasms than it did in other diseases or in normal cases. A negative reaction was of little significance. A positive reaction in the presence of other clinical symptoms might have a confirmatory value. 2. There appeared to be present in greater or less degree in the blood serum of every individual a substance tending to protect the cells of this individual from hæmolytic by an alien serum. 3. It would appear likely that the presence of isohæmolysis in a serum subjected to a Wassermann or other complement deviation reaction should be reckoned with in those cases in which human cells and antihuman amboceptors were used in the reaction.

The Management of Typhoid Fever with Special Reference to Antipyresis and Diet.—Dr. WILLIAM EMMETT ROBERTSON, of Philadelphia, said that concerning the reduction of fever, just as in health one run a normal daily curve, so in disease, the temperature curve followed a course according to the nature of the infection. If the temperature was 105° F. or over it was justifiable to give a prolonged sponge or a dose of from 5 to 10 grains of aspirin. It was his practice not to have his patients disturbed for any purpose from 11 p. m. to 7 a. m. During the day food was given every four

hours. One half hour after each meal dilute hydrochloric acid was administered in doses of from 20 to 60 minims, gauged by the degree of dryness of the tongue. Patients fed in this way remained remarkably well nourished and presented none of the usual hebetude of typhoid. In fever hydrochloric acid was diminished or absent; hence the physiological need was supplied. This with carbohydrates would prevent tympany. The author's diet list was given. A fact of considerable importance was that typhoid carriers were rarely met with after his plan was adopted.

Some Observations on Obstetrics in General Practice.—Dr. J. O. ARNOLD, of Philadelphia, considered obstetrical practice under the following three conditions: 1. That done in institutions; 2, in the homes of the more well to do class of people; 3, in the homes of the poor and middle classes. A very large amount of poor obstetrical work was done under the third condition. To what extent this fact was recognized by physicians, to what extent it was the fault of the practitioner or the fault of conditions imposed upon him, and to what extent there were within reach of the family doctor practical methods of bettering such conditions were the problems of this paper. Aid in solving these problems had been sought by soliciting from 100 family physicians answers to questions bearing on the proposition. Lists of the questions with their answers were given with deductions.

The Reduction of Temperature in Children without the Aid of Drugs.—Dr. W. C. HOLLISTER and Dr. H. BROOKER MILLS, of Philadelphia, had written this paper. Dr. H. BROOKER MILLS said that fever in children was a symptom complex possibly psychic in origin, with the emotional element playing an important part. The treatment of the sick with a minimum amount of medication was one of the most important evidences of the progress of medicine. The various methods of reducing temperature, i. e., the application of cold in the form of ice bag or sponge, with the hot water bottle applied to the feet; colonic irrigations; the entrance of plenty of fresh air into the rooms, and the open air treatment were fully considered. In addition to the effect upon the high temperature other advantages resulting were the production of many hours of quiet sleep and the saving of the stomach for nourishment instead of upsetting it by the use of drugs.

(To be continued.)

Book Notices.

[We publish full lists of books received, but do not undertake no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Practitioner's Visiting List, 1910. Thirty Patients per Week. Philadelphia and New York: Lea & Febiger.

This is the twenty-sixth year of issue of Lea & Febiger's physician's diary. It is issued in four styles, a weekly, dated, for thirty patients; a monthly, undated, for one hundred and twenty patients; perpetual, undated, for thirty patients weekly, and for sixty patients weekly. It contains a scheme of dentition; tables of weights and measures and comparative scales; instructions for examining

the urine; lists of incompatibles, poisons, and antidotes; a table of doses; an alphabetical table of diseases and their remedies, etc.

La Fulguration, sa valeur thérapeutique. Par le Dr. A. LIMIERA. Avec figures dans le texte. Paris: J. B. Baillière et fils, 1909.

This is a little treatise on a subject that has attracted no small degree of attention during the past two years. The essential feature of the method is the destruction of malignant and other lesions by the application of the sparks from a resonator or transformer properly connected with a static machine or an x ray coil. The method was introduced by Riviere, of Paris, in 1900, and recommended by Piffard, of New York (*New York Medical Journal*, June 16, 1906), for the destruction of lesions of small size. Later Keating-Hart, by the use of sparks of much greater volume and intensity, sought to treat grosser lesions. It must be admitted that in some cases the results were satisfactory, but other surgeons who have practised Keating-Hart's somewhat elaborate technique are not so enthusiastic. The little brochure before us gives full details as to the requisite manipulations, and to it we must refer the reader who desires fuller details.

The Principles of Hygiene, A Practical Manual for Students, Physicians, and Health Officers. By D. H. BERGEY, A. M., M. D., Assistant Professor of Bacteriology, University of Pennsylvania. Illustrated. Third Edition, Revised and Enlarged. Philadelphia: W. B. Saunders Company, 1909. Pp. 555.

This volume gives the reader a general survey of one of the most important branches of medical science, namely, that of preventive medicine. The discussion in the various chapters, while necessarily brief, is clear, concise, and accurate. The usefulness of the book may be inferred from the fact that it has already reached its third edition. Not only physicians and health officers, but all interested in the public health will read this book with profit.

Outlines of Psychiatry. By WILLIAM A. WHITE, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C., etc. Second Edition. Revised and Enlarged. New York: The Journal of Nervous and Mental Disease Publishing Company, 1909. Pp. 232.

The early appearance of a second edition of this work tells of its warm reception by the profession. We have no hesitation in saying that every practitioner should study this or some equally good work; a physician who cannot diagnose mental abnormality in a patient seeking his advice is poorly equipped. The mental furniture and attitude of an invalid shed a flood of light upon all the subjective symptoms. Dr. White's work is intended primarily for the students who have had the advantage of attending his lectures, but it is sufficiently complete for all but the psychiatric specialist. It is well that the practitioner should learn to distinguish the varieties of insanity, with their various treatments, and not content himself with a statement that a given patient is "crazy." We note that intractable drug habits have been incurred from the use of codeine and heroine, supposed by many to be harmless in this respect. Alcoholism is given as the main cause of arterial sclerosis. Is not this putting the cart before the horse? The prematurely old are likely to feel the want of the "milk of the aged" comparatively early in life. The physical and men-

tal examination of the patient, given in tabular form in this book, makes an admirable and hardly too complete model for the examination of any patient. We wonder how many of our friends would obtain a high mark in such an examination. We cordially recommend the work to practising physicians and young specialists.

Inborn Errors of Metabolism. The Croonian Lectures Delivered Before the Royal College of Physicians of London, in June, 1908. By ARCHIBALD E. GARROD, D. M., M. A., Oxon., Fellow of the Royal College of Physicians, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. (Price, \$1.35).

The author deals with albinism, alkaptonuria, cystinuria, and pentosuria. The book is a reprint of the 1908 Croonian Lectures, delivered before the Royal College of Physicians of London. The literature concerning the subjects enumerated is reviewed and arranged in an admirable manner. There is little new material in the book, but the lectures form an excellent résumé of the experimental and clinical work that has already been done.

Graphic Methods in Heart Disease. By JOHN HAY, M. D., M. R. C. P., Assistant Physician, Liverpool Royal Infirmary. With an Introduction by James Mackenzie, M. D., M. R. C. P. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xvii-184. (Price, \$3.00).

This is an admirable working manual for him who wishes to undertake the study of abnormalities of the circulation with the aid of mechanical apparatus. The book opens with an introduction by Dr James Mackenzie. Then there is a glossary defining the terms used in the body of the work. Chapter I deals with the myogenic theory of the heart's action; chapter II is devoted to some anatomical considerations; Chapter III is a description of the clinical polygraph and the ink writing polygraph and their accessories; chapter IV describes the normal sphygmogram, the normal cardiogram, the epigastric record, and the normal phlebogram; chapter V describes the auricular type of venous pulse; Chapter VI is devoted to extra systole; Chapter VII deals with the ventricular or nodal form of venous pulse; chapter VIII treats of disturbance of function, of conductivity, excitability, contractibility, stimulus production, and tonicity; chapter IX enumerates the difficulties in the interpretation of sphygmograms; and chapter X describes an illustrative case of mitral stenosis, showing the manner in which the heart's activity can be followed in an individual case.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. ABBOTT, M. D., Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Eighth Edition, Thoroughly Revised. With 100 Illustrations, 26 of Which Are Colored. Philadelphia and New York: Lea & Febiger, 1909. Pp. xi-631.

This book was written for the beginner and upon the presumption that the reader was unfamiliar with the subject. Upon this principle the author has given the student a book of essentials in which essentials are not overshadowed by the discussion of moot points and abstruse scientific theories. The eighth edition, which has just appeared, carries out the original intention of presenting a work for the beginner. As Dr. Abbott says in the preface,

the recent important advances in bacteriology have not disturbed the basic principles of the science.

The chapter on infection and immunity has been rewritten, the newer views of phagocytosis have been emphasized, and a summary has been made of the voluminous work on bacterial vaccines and the production of autoserum. The book is now, as it has always been, a safe guide for the student and for the practitioner who is beginning the study of bacteriological methods.

Review of Some of the Recent Advances in Tropical Medicine. Hygiene and Tropical Veterinary Science, with Special Reference to their Possible Bearing on Medical, Sanitary, and Veterinary Work in the Anglo-Egyptian Sudan. Being a Supplement of the Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By ANDREW BALFOUR, M. D., B. Sc., F. R. C. P., Edinburgh, D. P. H. Cambridge, Director, Fellow of the Royal Institute of Public Health, etc., and R. G. ARCHIBALD, M. B., R. A. M. C., Attached E. A., Pathologist and Assistant Bacteriologist, Fellow of the Society of Tropical Medicine and Hygiene. Published for Department of Education, Sudan Government, Khartoum. London: Baillière, Tindall, & Cox., 1908. (New York: Toga Publishing Co.) Pp. 251.

The supplementary volume to the third report of the Wellcome Research Laboratories of Gordon Memorial College, Khartoum, a review of which we published in our issue for October 23d, consists of abstracts of articles bearing upon tropical medicine which have appeared in periodical medical literature up to the middle of July, 1908. The volume was issued on account of the difficulty experienced by the medical and veterinary officers in the Sudan in keeping in touch with current literature. It was also intended that it should indicate the directions in which knowledge of tropical medicine, veterinary medicine, bacteriology, and hygiene was deficient in the Sudan, so that research might be stimulated and useful information acquired.

The plan of the review is excellent. The papers bearing upon the particular diseases of interest to workers in this portion of the tropical world are abstracted and arranged in alphabetical order. It represents a great amount of painstaking work well done. The volume will be of value not only to the workers in the land of Fuzzy-Wuzzy, but to lecturers on tropical medicine and to investigators of subjects connected with tropical medicine and hygiene elsewhere.

Die Extraktion der Zähne für Aerzte und Studierende der Medizin. Von Dr. JULIUS SCHEFF, a. o. Professor und Vorstand des k. k. zahnärztlichen Instituts der Wiener Universität. Zweite, vollständig umgearbeitete und vermehrte Auflage. Wien und Leipzig: Alfred Holder, 1909. Pp. vi-161. (Price, M. 4.40.)

Dr. Julius Scheff is a well known Austrian authority on dentistry, and is also the author of a textbook on that subject.

The times have passed when, in Europe, it was the prerogative of the village blacksmith or of the town barber to extract teeth, and this was not very long ago. Under the tutelage of American dentists, Europe has made great progress in stomatology, until it now has nearly outstripped its teacher. The extraction of teeth has become a specialty, the importance of which is shown by this book. It is a specific European book, and we cannot always agree with the author's teachings.

The great advantage of teeth extraction, as practised in the United States, is in the position of the extractor; at the back of the patient, on a slightly raised platform, either to the right or to the left. This position, once accepted, does away with the need of such instructions as are found on page 78, and the author's objections to it, on page 79, will not stand the test. The American forceps is usually adapted to this method, and the extractor has always a good light, controls with his left arm and hand the head and mouth of the patient, does not need an assistant, and can keep his position even if he administers nitrous oxide. We are rather astonished that the author still speaks of the key, an instrument which should never be used; indeed it should be absolutely excluded from the armamentarium of every extractor. Scheff advocates as an analgetic only local anæsthesia, as produced by cocaine and its congeners. But we are sure that ethyl chloride will, in many cases, be found superior to cocaine, while nitrous oxide is the safest and quickest of all general anæsthetics in dentistry.

But, to come back to our book, it must not be understood that we wish to belittle its value; on the contrary, it has many good points, for example, the treatment of hæmorrhages after extraction with hot water and tampons consisting of penghawar Djambi (the use of which moss is known by very few, some of whom oppose it), cotton, and a modelling compound; the use of the elevator for the extraction of roots; the indications for extracting, etc.

Spezielle Diätetik und Hygiene des Lungen- und Kehlkopf-Schwindsüchtigen. Von Dr. FELIX BLUMENFELD, Wiesbaden. Zweite vermehrte und verbesserte Auflage. Berlin: August Hirschwald, 1909. Pp. viii-108. (Price, M. 2.80.)

In the present, as in the first, edition practical considerations have been followed. The special rules for nutrition and diet, clothing, care of the body, exercise, occupation, sport, and sleep are reviewed in detail on a basis of long experience and with full recognition of recent advances in phthisiotherapy. The chapters on the treatment of special symptoms and complications, such as fever, cough, expectoration, and intestinal disturbances, and on the general supervision of the tuberculous sick, are excellent in their brevity and completeness.

Bau und Entwicklung der Mundhöhle des Menschen unter Berücksichtigung der vergleichenden Anatomie des Gebisses und mit Einschluss der speziellen mikroskopischen Technik. Lehrbuch für Zahnärzte, Aerzte und Studierende von Privatdozent Dr. GUIDO FISCHER, Zahnarzt und Leiter des Zahnärztlichen Instituts der königlichen Universität Greifswald. Mit xviii Tafeln und 340 Abbildungen. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. x-436.

It is not very long ago that Berlin and Leipzig were the only two German universities which had a department for dentistry. But now every medical faculty in Germany has such an institution. Stomatology has made great strides, not only with us, but also abroad, and very good textbooks in this branch of medicine have appeared in Germany during the last decade. Fischer's book is a very good one, not only a manual for the dentist, but—even more—for the physician. It contains four parts—macroscopical anatomy, comparative anatomy, and microscopical anatomy, with histogenesis and histology. These three parts are divided into forty-two lectures,

which, we surmise, were given by the author as chief of the dental institution of the University at Greifswald, before his classes; while Part IV gives a review of the microscopical technique.

The book is well written and the illustrations are good (see, for example, the ground sections of an upper bicuspid on pages 37 and 85). Of great interest is the second part, in which the author speaks of comparative anatomy; the illustrations here are very instructive and well executed.

There is no textbook in the English language which treats of the subject so well and so completely. The typography is excellent. The book can be well recommended and should soon find an English translator.

Jahresbericht über die Fortschritte der inneren Medizin im In- und Auslande. Begründet von Geh. Medizinalrat Prof. Dr. EBSTEIN, Göttingen. Herausgegeben von Dr. BEYER, Dr. BRASSET, etc. Redaktion: Dr. SCHREIBER, in Magdeburg, und Dr. RIGLER, in Leipzig. Bericht über das Jahr 1908. I. Band. Leipzig: Dr. Werner Klinkhardt, 1909. Pp. xii-405.

Sooner than we expected have the editors, Dr. Schreiber, of Magdeburg, and Dr. Rigler, of Leipzig, and the publisher, Dr. Werner Klinkhardt, found it possible to place the first volume for 1908 of the *Jahresbericht* in the hands of the readers.

This part contains the reports on constitutional diseases by Dr. Karl Loening, of Halle; on diseases of the urosexual organs, by Dr. Friedeberg, of Magdeburg; on diseases of the blood, by the same author; on poisoning and infections, by Dr. Vogt, of Rostock; on diseases of the digestive organs, by Dr. Martin Kaufmann, of Mannheim; and on general literature by Dr. Erich Epstein.

We congratulate both editors and publishers on their strenuous efforts, and hope they will be able to carry out their schedule. We refer our readers also to our review of August 21, 1909, page 380.

Clinical Examination of the Urine and Urinary Diagnosis. A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery. By J. BERGEN OGDEN, M. D., Medical Chemist to the Metropolitan Life Insurance Company, New York; Late Instructor in Chemistry, Harvard University Medical School, etc. Illustrated Third Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 16. (Price \$3.00).

This edition shows evidence of careful revision. The work is too well known to call for any extended comment. No description of the now well known pancreatic reaction of Cammidge is given. A chapter has been introduced on the examination of urine for the purpose of life insurance, known as appendix A. The mechanical features of the book are excellent.

Die atonische und die spastische Obstipation. Ihre Differentialdiagnose und Behandlung. Von Privatdozent Dr. GUSTAV SINGER, Primärarzt am k. k. Krankenhause "Rudolf-Stiftung" in Wien. Mit zwei Abbildungen. Halle a. S.: Carl Marhold, 1909. Pp. 46.

In this sixth number of the valuable series of monographs on diseases of digestion and metabolism, edited by Professor Albu we have a concise and adequate presentation of the entire subject of persistent constipation. Dr. Singer properly makes a broad distinction between the atonic and the spastic forms. The former he shows to be frequently associated with the abuse of purgative drugs, Glén-

ard's disease, and an excessive flesh diet, or the auto-intoxication of Bouchard; the latter with hemorrhoids, disease of the uterus and annexa or prostatic troubles in the male, oxyuris in children, ulcer of the stomach, gallstone disease, moveable kidney, or chronic appendicular inflammation. In treatment reliance is placed chiefly upon diet, massages, exercise, hydropathic procedures, electricity, and measures to restore the automatism of the bowel. The sparing use of cathartics is permitted only as a temporary expedient, and the best of these are phenolphthalein, cascara, and rhubarb. The internal employment of menthol in three grain doses is praised as an intestinal antiseptic.

MEDICOLITERARY NOTES

The criticisms of recent books by James L. Ford in the Sunday *Herald* are well worth reading. Mr. Ford uses other tools than the usual hammer and whitewash brush, and, although we do not agree with him in some of his opinions, it is always worth while studying the point of view of a criticising writer who has himself the constructive faculty.

Myra Kelly, who is the daughter of a physician, had an admirable study of our children of recent immigrants in the Thanksgiving *Saturday Evening Post*, The Origin of Species. By the way, it is really remarkable, the simultaneous discovery by so many of our writers of the Tanagra figurines, which are alluded to in the story. In the same weekly Samuel G. Blythe is continuing his amusing Adventures of a Hypochondriac.

There is a Greek restaurant uptown, with the name on the windowpane in capital letters done in the well known enamel. The designer of these letters has evidently not wandered in his patterns from the Roman alphabet. It was necessary, however, in order to spell the name of the restaurant, to use among other letters a rho, an eta, a lambda, and a sigma. A Roman P and a Roman H did very well for the first two; to accomplish the lambda, the sign artist has used a V upside down, while the sigma is represented by an M eloquently recumbent in the left lateral posture.

Sir Arthur Conan Doyle has a sensational tale of Constantinople of the sixth century in The Home Coming, which opens the December number of the *Strand*. Arthur Morrison has an amusing tale, Frenzied Finance, which helps console us for the absence of W. W. Jacobs. People who imagine all the fairy stories have been told should read the charming inventions of E. Nesbit; her latest, Harding's Luck, is concluded in this number.

William J. Locke continues his serial, Simon the Jester, in the December *American*, and contributes also a short story in the true Christmas spirit, A Christmas Mystery. Where the editor who figures as Mr. Worldly Wiseman got the idea that muckraking had ceased we cannot guess; let him look at this month's *Everybody's* and *Pearson's*. The *American* itself is muckraking in Barbarous Mexico. Muckraking buried a lot of wretched patent medicines, and, as far as panic is concerned, we are willing to believe it caused one in that business.

Eugene Wood has one of his delightful colloquial essays, The Wicked City, written in that style that looks so easy.

The reason why there are comparatively so many divorces in the United States has never been any mystery to us; it is simply that they are obtainable without what is often but disgusting publicity. In all ages and in all countries divorce would have been equally common if equally easy. *McClure's*, a magazine that has achieved an enormous circulation by giving the public something better than they thought they wanted, has a splendid article on the subject by George Elliott Howard, which deserves thoughtful reading by all *a priori* reasoners. Pictures and fiction are fine in this number.

Pearson's for December has also an article on divorce, in which the writer, Allan L. Benson, makes a strong point of the peculiar national attitude of a married couple one to the other; Richard Barry has just words of scorn for women who spend hundreds of dollars annually on pet dogs while children are herded in orphan asylums. Conditions in the best of asylums are heartrending to people who know anything of the young. Why does not the Church make it a condition of salvation that every capable adult shall be responsible for at least one child? That would help solve the divorce problem as they wish it solved. Arthur P. Herring exposes the shocking conditions in some of the State insane asylums; James Creelman explains the inoculation against typhoid fever; the ubiquitous but always entertaining E. Phillips Oppenheim has a mystery story.

Scribner's for December has something of importance to *littérateurs* in some hitherto unpublished verses of Robert Louis Stevenson addressed to H. C. Bunner; a further account of relentless war on wild beasts who prey on the common people of Africa, by Theodore Roosevelt; many beautiful pictures; and excellent fiction by the most popular writers.

The editorial discussion of a portrait of Charles Anthon reminds us of the classical dictionary of this once eminent teacher, which had everything significant left out. We do not think any modern teacher would Bowdlerize such a work, by leaving out all allusions to the mystery of mysteries and strivings after the secret of creation.

We had not read far in *The Holy Land*, in the December *Century*, before we turned back with great approval to find the author's name; we smiled at our condescension on finding that it was Robert Hichens. As usual, the pictures are very fine, even the merciless halftones being turned into works of art. The fiction is of a very high order. Modjeska's Memoirs help to relieve the extraordinary dearth of theatrical information in our magazines. It is noteworthy that there is grave discussion of our want of manners in many recent publications, and an editorial blames the recipient of discourtesy for his lack of remonstrance.

Themison, a pupil of Asclepiades, began the practice of medicine in Rome about 90 B. C. In trying to steer a middle course between the empirics and the dogmatists, he founded a school of

medicine known as the methodists. Along with a good deal of rubbish, he introduced into therapeutics the use of leeches. Juvenal paid him one of his lefthanded compliments:

Quot Themison agros autumnum occiderit uno, as many invalids as Themison could kill in one autumn. In the tenth satire, in which this line occurs, is also the sentence:

Mulier sævissima tunc est,
Quum stimulus odio pudor admovet,
then is woman most furious when shame spurs her hatred, which Congreve paraphrased:

Heaven has no rage like love to hatred turned,
Nor hell a fury like a woman scorned,
which lines are often attributed to Pope.

Robert Herrick, the distinguished author of *Together*, has a short story, *The Ghost of Walter Parry*, in the December *Red Book*; William Hamilton Osborne writes of *The Penny Snatchers*, Rupert Hughes discourses on *The Lady and the Quinine Quartet*, and Zona Gale contributes a *Friendship Village reminiscence*, *The Pattern*.

NEW PUBLICATIONS.

Landois, L.—Lehrbuch der Physiologie des Menschen. Mit besonderer Berücksichtigung der praktischen Medizin. Zwölfte, Auflage. Bearbeitet von Dr. R. Rosemann. Zweiter Band. Mit 194 Abbildungen im Text. Berlin und Wien: Urban & Schwarzenberg, 1909. Pp. viii to 481-974. Bechterew, W. von, and Weinberg, Richard.—Die Funktionen des Nervencentra. Zweites Heft: Kleinhirn, Mittelhirn, Zwischenhirn und subkortikale Ganglien. Mit 141 Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. viii to 693-1366.

Stiles, Charles Wardell.—Soil Pollution and Its Relation to Hookworm Disease and Typhoid Fever. Washington: Government Printing Office, 1909. Pp. 10.

Report of the Commissioner of Education for the Year ended June 30, 1909. Volume I. Washington: Government Printing Office, 1909. Pp. xi-598.

Transactions of the Medical Association of the State of Alabama at the Annual Meeting held in Birmingham, April 20 to 23, 1909. Pp. 7-14.

Quarterly Report of the Board of Health of the Department of Health of the City of New York for the Quarter ending March 31, 1909. Pp. 135.

Anderson, John E., and Kosenow, M. J.—I. The Presence of Tubercle Bacilli in the Circulating Blood in Clinical and Experimental Tuberculosis. II. The Viability of the Tubercle Bacilli. Hygienic Laboratory Bulletin No. 57. Washington: Government Printing Office, 1909. Pp. 42.

Mortality Statistics: 1908. General Death Rates, Causes of Death, Occupational Mortality, Second Decennial Revision of the International Classification of Causes of Death. Department of Commerce and Labor, Bureau of the Census, E. Dana Durand, Director. Bulletin 104. Washington: Government Printing Office, 1909. Pp. 133.

Schlöss, Heinrich.—Leitfaden zum Unterricht für das Pädagogion an öffentlichen Irrenanstalten. Vom niederösterreichischen Landesausschuss preisgekürzte Schrift. Vierte, gänzlich umgearbeitete, vermehrte und verbesserte Auflage mit zahlreichen Textillustrationen. Wien: Franz Deuticke, 1909. Pp. 118. (Price, 2 Kr.)

Snodda, Hermann.—Die kritischen Tage des Menschen und ihre Berechnung mit dem Periodenschieber. Wien: Franz Deuticke, 1909. Pp. 63.

Zuerkandl, Otto.—Atlas und Grundriss der chirurgischen Operationslehre. Mit 45 farbigen Tafeln und 356 Abbildungen im Texte. Vierte, vermehrte und verbesserte Auflage. München: F. Lehmann, 1909. Pp. 521.

Theilhaber, A.—Blutungen und Ausfluss aus dem Uterus, ihre Ursachen und Behandlung. Mit 9 Figuren im Text und 4 Tafeln. München: Ernst Reinhardt, 1909. Pp. 87.

Von Müllern, Karl.—Grundriss der klinischen Blutuntersuchung. Mit 6 farbigen lithographischen Tafeln und 5 Abbildungen im Text. Wien: Franz Deuticke, 1909. Pp. 178.

Von Bardeleben, Karl.—Die Anatomie des Menschen. I. Teil: Allgemeine Anatomie und Entwicklungsgeschichte. Mit 69 Abbildungen im Text. II. Teil: Das Skelett. Mit 53 Abbildungen im Text. III. Teil: Das Muskel- und Gefäß-System. Mit 68 Abbildungen im Text. Leipzig: B. G. Teubner, 1908. Pp. 108, 87, 104.

Neisser, Albert, and Jacobi, Edward.—Ikonographia der Matologia. Atlas seltener, neuer, und diagnostisch unklarer Hautkrankheiten. Fascicule III. Tabellen xxvii-xxvi. Berlin und Wien: Urban & Schwarzenberg, 1909.

Verworn, Max.—Allgemeine Physiologie. Ein Grundriss der Lehre vom Leben. Fünfte, vollständig neubearbeitete Auflage. Mit 319 Abbildungen. Jena: Gustav Fischer, 1909. Pp. 742.

Voss, Georg.—Klinische Beiträge zur Lehre von der Hysterie nach Beobachtungen aus dem Nordwesten Russlands. Jena: Gustav Fischer, 1909. Pp. 300.

Krause, W.—Skelet der oberen und unteren Extremität. Mit 83 Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. 266.

Von Hanseemann, D.—Deszendenz und Pathologie. Vergleichend-biologische Studien und Gedanken. Berlin: August Hirschwald, 1909. Pp. 488.

Eichhorst, Hermann.—Handbuch der speziellen Pathologie und Therapie innerer Krankheiten. Sechste, umgearbeitete und vermehrte Auflage. Viertes Band: Krankheiten der Nebennieren, des Blutes und Stoffwechsels, und Infektionskrankheiten. Mit 216 Abbildungen. Wien: Urban & Schwarzenberg, 1909. Pp. 1221.

Bircher, Eugen.—Die Entwicklung und der Bau des kretinen Skeletts im Röntgenogramme. Mit 121 Röntgenogrammen auf 12 Tafeln, 21 Abbildungen und 4 Schriftproben im Text. Hamburg: Lukas Gräfe und Sillem, 1909. Pp. 156.

Boysen, J.—Ueber die Struktur und die Pathogenese der Gallensteine. Mit einem Vorwort von Prof. Dr. Theodor Roosing. Mit zwei Tafeln. Berlin: S. Karger, 1909. Pp. 126.

Blum, Viktor.—Symptomatologie und Diagnostik der urogenitalen Erkrankungen. Zweiter Teil. Wien: Franz Deuticke, 1909. Pp. 176.

Rona, S.—Dermatologische Propädeutik. Die entzündlichen Erscheinungen der Haut im Lichte der modernen Pathologie. Sieben Vorlesungen für Aerzte und Studierende. Berlin: Julius Springer, 1909. Pp. 143.

Loos, O.—Ueber die Ursachen des sogenannten Längerwunders der Zähne bei fehlenden Antagonisten. Eine histologische Studie. Mit 5 Abbildungen auf 2 Tafeln in Lichtdruck. Strassburg: J. H. E. Heitz, 1909. Pp. 68.

Miscellany.

Extract of Corpus Luteum in Disturbances of Artificial and Physiological Menopause.—Morley, in the November number of the *Journal of the Michigan State Medical Society*, reports his results in eighteen cases. This report is a continuation of the one that appeared in the August number of the *Detroit Medical Journal*. The author used an extract made from the corpora lutea of beef ovaries rather than an extract of the entire ovary, as the consensus of opinion seems to be that the internal secretion of the ovary is produced by the yellow body. The extract is given in five grain doses, when three times a day, one half to one hour before mealtime. His results in the eighteen cases may be summarized as follows: Five patients were cured, two were improved, and one obtained no relief. The twelve cases in which the patild type; were improved are grouped those who are still ve type. ing the extract. A permanent cure may result was a few of the cases under treatment. Of these alaise, and een patients, fourteen suffered from disturb of operative or artificial and four from thlly seen in natural or physiological menopause. While sults obtained in so small a group of cases

warrant the drawing of any definite conclusions, still the author thinks that the results are favorable enough to justify a continuance of the treatment in other cases, where there is a disturbance incident to artificial or physiological menopause.

Official News.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 4, 1909:

- BARNEY, FREDERICK M., First Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.
- BLANCHARD, ROBERT M., Captain. Granted sick leave of absence for two months.
- BOWMAN, MADISON H., First Lieutenant, Medical Reserve Corps. Ordered to Seattle, Wash., for temporary duty on the transport *Dir.*
- BROWN, ORVILLE G., Captain. Granted an extension of ten days to his leave of absence.
- BYRNE, CHARLES B., Colonel, Medical Corps. Relieved from duty as chief surgeon, Department of the East; will proceed home at the expiration of his present leave of absence, and await retirement from active service.
- FERGUSON, JAMES H., First Lieutenant, Medical Reserve Corps. Granted leave of absence for four months.
- MAUS, LOUIS M., Colonel, Medical Corps. Relieved from duty as chief surgeon, Department of Dakota, and ordered to Chicago, Ill., for duty as chief surgeon, Department of the Lakes.
- RAYMOND, HENRY I., Lieutenant Colonel, Medical Corps. Relieved from duty at Fort Sam Houston, Tex., and ordered to St. Paul, Minn., for duty as chief surgeon, Department of Dakota.
- SMITH, ALLEN M., Major, Medical Corps. Relieved from duty at the Presidio of Monterey, Cal., and ordered to Fort Sam Houston, Tex., for duty.
- WALES, PHILIP G., Major, Medical Corps. Relieved from duty at Fort Apache, Ariz., and ordered to the Presidio of Monterey, Cal., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 4, 1909:

- ALLEN, A. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 2, 1909.
- AMES, M. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 2, 1909.
- BRAISTED, W. C., Surgeon. Detached from duty as assistant to the Bureau of Medicine and Surgery and ordered to special temporary duty in the Bureau of Medicine and Surgery.
- DICKSON, S. H., Medical Director. Commissioned a medical director from October 31, 1909.
- FITTS, H. B., Medical Inspector. Commissioned a medical inspector from October 3, 1909.
- FOSTER, T. G., Assistant Surgeon. Ordered to the *Prairie*.
- FUKUNO, F. M., Surgeon. Detached from the *Vermont*; ordered home, and granted sick leave for three months.
- GRUNWELL, A. G., Surgeon. Detached from the *Kansas* and ordered to treatment at the Naval Medical School Hospital, Washington, D. C.
- HULL, H. F., Passed Assistant Surgeon. Ordered to the Navy Yard, New York, N. Y.
- JONES, E. L., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from January 6, 1909.
- MINIER, J. M., Assistant Surgeon. Detached from the *Naval Medical School Hospital*, Norfolk, Va., and ordered to the *Prairie*.
- PHILLIPS, T. N., Pharmacist. When discharged from treatment at the Naval Medical School Hospital, Washington, D. C., ordered to the Naval Hospital, Las Animas, Col., for treatment and observation.
- PLEADWELL, F. L., Surgeon. Detached from duty as a member of the Naval Examining and Medical Examining Boards, Washington, D. C., and to duty as assistant to the Bureau of Medicine and Surgery.

- SHIFFERT, H. O., Surgeon. Detached from the *Lancaster* and ordered to the *Vermont*.
- WHEELER, W. M., Surgeon. Detached from the Navy Yard, New York, and ordered to the *Panther*.
- WILLIAMS, R. B., Surgeon. Detached from the Navy Yard, Philadelphia, Pa.; ordered to duty in connection with the *South Carolina*, and to duty on that vessel when placed in commission.

Births, Marriages, and Deaths.

Born.

- ASSERSON.—In Chelsea, Massachusetts, on Saturday, November 27th, to Dr. F. A. Asserson, United States Navy, and Mrs. Asserson, a son.
- LUNG.—In New York, on Sunday, December 5th, to Dr. George Augustus Lung, United States Navy, and Mrs. Lung, a son.
- TAYLOR.—In Brookline, Massachusetts, on Thursday, December 2d, to Surgeon J. S. Taylor, United States Navy, and Mrs. Taylor, a daughter.
- Died.*
- BANKER.—In Elizabeth, New Jersey, on Thursday, December 2d, Dr. Pierre A. Banker, aged sixty-eight years.
- BLAISDELL.—In Everett, Massachusetts, on Sunday, November 14th, Dr. Walter C. Blaisdell, aged sixty-five years.
- BOYD.—In Alexandria, Minnesota, on Saturday, November 20th, Dr. Harlow James Boyd, aged fifty-six years.
- CHURCHILL.—In Providence, Rhode Island, on Sunday, November 28th, Dr. Donald Churchill, aged thirty-nine years.
- COOPER.—In Louisville, Kentucky, on Thursday, November 25th, Dr. John S. Cooper, aged sixty-six years.
- DAVISON.—In York, Pennsylvania, on Monday, November 22d, Dr. H. M. Davison.
- FONTAINE.—In Pembroke, New Hampshire, on Friday, November 26th, Dr. Henri T. Fontaine, aged forty-two years.
- GEOGHAN.—In New York, on Saturday, November 27th, Dr. William Geoghan, aged fifty-five years.
- GRIFFIS.—In Middleton, Indiana, on Friday, November 19th, Dr. Robert Griffis, aged eighty-three years.
- GROVE.—In Latrobe, Pennsylvania, on Wednesday, November 24th, Dr. John O. Grove, aged thirty-two years.
- JOHNSON.—In Riverhead, Long Island, on Thursday, December 2d, Dr. Joseph L. Johnson, aged forty years.
- KELLY.—In Fall River, Massachusetts, on Tuesday, November 16th, Dr. Samuel J. Kelly, aged fifty-three years.
- KING.—In Atlanta, Georgia, on Friday, November 26th, Dr. Charles Rufus King, aged sixty-eight years.
- KOHN.—In Chicago, on Thursday, December 2d, Dr. Alfred D. Kohn.
- KOHN.—In New York, on Friday, November 26th, Dr. Samuel Kohn, aged fifty-six years.
- LEAVITT.—In Butte, Montana, on Tuesday, November 30th, Dr. Erastus D. Leavitt, aged sixty-seven years.
- LYNCH.—In Short Creek, Grayson County, Kentucky, on Monday, November 22d, Dr. A. T. K. Lynch.
- MACPHERSON.—In Brooklyn, on Tuesday, November 30th, Dr. Donald G. MacPherson, aged forty-four years.
- MCKELVEY.—In Pittsburgh, Pennsylvania, on Tuesday, November 23d, Dr. William H. McKelvey, aged sixty-six years.
- MITCHELL.—In Muncie, Indiana, on Monday, November 22d, Dr. Harvey Mitchell, aged eighty-three years.
- OWINGS.—In Roxbury Mills, Maryland, on Tuesday, November 30th, Dr. Levin J. Owings, aged thirty-four years.
- PRESLEY.—In Camden, New Jersey, on Sunday, November 28th, Dr. Sophia Presley, aged sixty-five years.
- SCHERMERHORN.—In Honesdale, Pennsylvania, on Thursday, November 25th, Dr. Bartholomew Schermerhorn, aged seventy years.
- SMALLWOOD.—In New York, on Saturday, November 27th, Dr. Samuel Brightwell Smallwood, of Astoria, aged sixty-nine years.
- WILCOX.—In St. Louis, Missouri, on Monday, November 22d, Dr. H. Tyler Wilcox, aged seventy-one years.
- WILSON.—In Middletown, New York, on Tuesday, November 30th, Dr. Isabella M. Wilson, aged fifty-nine years.
- WOHLFARTH.—In Hackensack, New Jersey, on Sunday, November 28th, Dr. Wohlfarth, aged fifty-five years.

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CEREBROSPINAL MENINGITIS; CLINICAL OBSERVATIONS AND SERUM TREATMENT.*

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The first authentic report of this disease in America dates back to 1806, in Massachusetts. Judging by the record of the mortality at no time has the epidemic appeared in such a severe type as in 1905-1906 in New York City.

Cerebrospinal meningitis was epidemic in New York in 1867-1868. It again appeared in New York in 1871-1872. The fulminating type predominated and existed among the negroes. This same epidemic continued until 1874, when it spread all over the United States. In 1876 the disease appeared sporadically and remained so until 1893, when a severe epidemic occurred. The disease again remained with us in its sporadic type until the severe epidemic, which occurred in 1905-1907. Since this time sporadic cases have appeared during the fall, winter, and spring months of the year.

In 1905, 2,775 cases were reported to the New York Board of Health. Sixty-seven per cent. of these cases occurred in children under ten years of age, and fifteen per cent. in infants under one year of age. A study of the statistics of the New York Board of Health is very interesting. While a large number of cerebrospinal meningitis cases are reported to the Board of Health, very many cases of a milder or abortive type are not reported. We have no compulsory registration of cases. Frequently cases are reported as simple spinal meningitis or tuberculous meningitis, which may or may not have been abnormal types of cerebrospinal meningitis.

In 1906, at the height of the epidemic, there were reported 1,032 cases, with 812 deaths, in greater New York. In 1907 there were 828 cases reported with 624 deaths. The mortality in 1906 was 78.7 per cent.; in 1907 it was 77.5 per cent. During six months of 1908 there were 253 cases reported with 182 deaths; the mortality was 71.9 per cent. We therefore find that the mortality averages between seventy and eighty per cent.

Climatic Conditions. During the severe epidemic of the two winters described, we had unusually cold weather. The precipitation of snow and the amount of frost and ice were far more than the average in

our zone, for many years. With the exception of the two winters associated with this epidemic we had occasional spells of mild weather in the winter months, which permitted ventilation in the humblest homes. During such intense cold as characterized these winters, people will close windows and doors tightly, especially when fuel is expensive. The air in some of these houses is stifling, and especially among the ignorant it is impossible to persuade them to admit fresh air. Living in such unsanitary dwellings is certainly a factor in causing the general depression so commonly seen in the congested quarters of New York. A feature of dwellings in the tenement house district is the total absence of sunlight in the sleeping apartments. Direct sunlight never enters the sleeping apartments in many of the homes. I do not refer to an absence of light in some rooms, but I speak of the absence of sun rays. When an infectious disease such as cerebrospinal meningitis enters such congested homes, then the germ finds a favorable soil for its propagation and most especially for its dissemination.

Etiology. The presence of the diplococcus of Weichselbaum was usually the causative agent of this disease. In some cases a streptococcus, in others a pneumococcus has been found. Weichselbaum states that he believes the meningococcus is frequently present and lies dormant in the crypts of the tonsils and pharynx. For this reason he believes that when a lowered vitality exists due to subnormal conditions, then the meningococcus gains access through the lymph channels to the meninges and sets up an acute and sudden infection. In addition to the presence of the meningococcus in the tonsils, this pathogenic microbe is frequently found in the nose, from whence it probably gains access through the frontal sinuses and reaches the brain. The meningococcus can be transmitted and an infection disseminated by direct contact with infected secretions containing the diplococcus intracellularis. Weichselbaum does not believe that the sudden appearance of a case of cerebrospinal meningitis in an otherwise healthy location is extraordinary when the aetiological conditions such as the possibility of harboring this diplococcus in the nose and throat are remembered.

Symptoms. During the epidemic there were three classes of cases encountered, first, a mild type; second, a severe type; and third, an abortive type.

Mild Type. In this class of cases there was a slight rise of temperature, generally malaise, and perhaps vomiting.

Abortive Type. This type is usually seen in

*Read by invitation before the Section in Pediatrics at the International Medical Congress, Budapest, Hungary, August 30, 1909.

strong children who are able to withstand a severe infection. By reason of their health they are infected in a lesser degree, as shown by their symptoms and the rapidity of their convalescence. The onset is usually sudden, and I have seen meningeal symptoms subside within ten days with no sequelæ. This happened in a case of a child with undoubted cerebrospinal meningitis, in which the diagnosis was confirmed by the bacteriological examination of the spinal fluid. Rhinitis with catarrhal discharge from the nose is sometimes an early symptom in

tism. There is also a distinct petechial eruption in some cases. Out of a series of twenty-two cases seen by me, six had distinct petechiæ. In six others the skin had a distinct eruption resembling scarlet fever. Owing to the spots present in this condition, the disease was frequently termed "spotted fever." The pupils are usually dilated, they are sometimes irregular. I have seen cases during the epidemic of 1905 in which one pupil showed marked dilatation, while the other pupil was contracted to almost a pinpoint. Strabismus is a frequent symp-

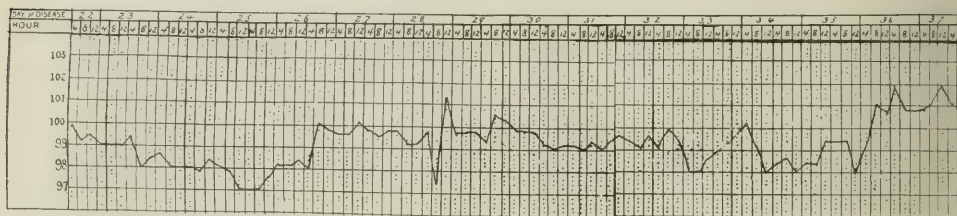


CHART 1.—Temperature chart of Case I.

this disease. Rhinitis is frequently found in the abortive type of the disease. The danger of having the meningococcus in the nose consists in the ease with which this pathogenic bacterium can enter the frontal sinus and thus give rise to encephalitis. In the abortive type of this disease there frequently is a nasal discharge in which the meningococcus intracellularis can be found long after the rhinitis has disappeared. The ambulatory cases are the ones which disseminate this infection because they carry the pathogenic bacteria from house to house.

Severe Type. In the severe type there is a sudden onset of symptoms. In older children a distinct chill is usually the first symptom noted. The skin feels hot. The temperature rises anywhere between 102-105° F. (38.8 and 40.6° C.), in the rectum. The pulse varies, it may be slow or very rapid. The respiration is irregular in character, sometimes sighing, and labored, but most frequently Cheyne-Stokes in character. Later on there is vomiting, pain in the head, in the frontal or occipital regions, and pain at the back of the neck. There is moaning and frequently delirium. Vasomotor disturbances, such as the flushing of one ear or one cheek, are occasionally seen. The *tache cérébrale* is usually noted when stroking the breast with the finger nail, as a distinct hyperæmia follows and remains for several minutes. The tendons are very sensitive to the slightest pressure. The patellar reflexes are usually absent. When the thigh is flexed on the abdomen and we try to extend the leg there is considerable latent contraction, the so called Kernig's sign. This symptom alone should not be depended upon. Hyperextension of the big toe produced by stroking the sole of the foot, the so called Babinski reflex, is not always present. It is also frequently noted in perfectly healthy children. In a series of fifty children examined by me, the Babinski reflex was found in forty.

Either constipation or diarrhœa may be present. The bladder acts well, although enuresis may exist. In some cases there is a marked retention of urine. The joints are usually swollen, simulating rheuma-

tom. Occasionally we note nystagmus. Photophobia is a frequent symptom. In one of my cases the child cried whenever a lighted candle was brought near the eyes. Opisthotonos is usually present. The severe rigidity of the sternocleidomastoid muscle in addition to the marked rigidity of the arms and legs forms a very prominent symptom during the course of the disease. Owing to these severe contractures we usually note constant moaning, most likely induced by the pain caused by the said contractures.

Diagnosis. The diagnosis as a rule is easily made. The sudden onset of meningeal symptoms associated with vomiting suggests scarlet fever. The examination of the throat shows an absence of patches, the so called scarlatinal diphtheria or scarlatinal necrosis. The tongue is usually coated, but has not the strawberry appearance so common in scarlet fever.

A positive diagnosis of this disease can be made by examining the fluid drawn by lumbar puncture. As a rule the spinal fluid is turbid or opaque. We do not find the spinal fluid clear and transparent, as it is seen in tuberculous meningitis. The presence of the characteristic diplococcus intracellularis described by Weichselbaum is always present. In rare cases the streptococcus and the pneumococcus have been found, but these latter are the exception. The bacteriological diagnosis according to Weichselbaum depends on the diplococcus being Gram negative, or decolorized by Gram. It is important to remember that the *Micrococcus catarrhalis* is frequently found in the nasal passage, hence great care must be exercised to differentiate the same, both in its relation to Gram staining and also in its morphological characters.

In order to judge of the type and severity of cases seen in New York city, I shall describe three cases which were admitted to my service at the babies' wards of the Sydenham Hospital. All three cases occurred during the past winter, 1908-1909, and all of the patients were under one year of age, seven weeks, four months, and eleven months respectively.

CASE I.—Rubin G., seven weeks old, was admitted to my service at the Sydenham Hospital, November, 1908.

Family history. Grandmother on paternal side died of tuberculosis. The father had had a cough for the last four years, but no history of tuberculosis obtained. Mother living and well. Another child six years of age, living and well.

Personal history. Normally delivered infant; seven weeks old. Breast fed and nursed well. Past three weeks bowels were constipated, but stools were of yellowish color. Mother gave rectal injections daily. With the exception of an occasional vomit after feeding, the infant was perfectly well until the present illness.

Present history. Illness began three weeks ago (October 10th) when infant was four weeks old. Mother noticed the infant became feverish and began to vomit after feeding. A few days later noticed retraction of the head and rigidity of the limbs. Infant was taken to Mt. Sinai dispensary and there, according to mother, was treated for stomach trouble. On the seventh day after onset, mother stated that fever subsided, but the retraction of head and vomiting persisted. The bowels were constipated since onset (three weeks). There was no cough. A few days before admission mother noticed a profuse discharge from one ear, and at the dispensary a paracentesis was done on the other ear. No history of malarial infection, no history of umbilical infection or nasopharyngeal trouble, and no instrumentation at birth. One day previous to admission infant had several convulsions.

Physical examination. General appearance.—Infant appeared well nourished, had good color, was very quiet when left alone; but cried lustily when palpated. Assumed an opisthotonos position. Head appeared normal in shape, veins were distended. There was marked bulging of anterior fontanelle. Examination of mouth and tongue was negative. Throat was clear, no evidence of retropharyngeal abscess. There was a purulent discharge from both ears. Neck, there was a marked rigidity of both sternocleidomastoid and trapezius muscles. The head was markedly retracted. Chest was normal in contour, symmetrical, good expansion, free respiratory movements on both sides. No sign of rickets. Heart was normal in size, no enlargement, good action, regular, rapid, no murmurs. Pulse regular, good quality, and not intermittent. Examination of the lungs was negative. Abdomen showed no rigidity, no masses, but presented hyperesthesia on touch. The back was arched and its relation to head was that of opisthotonos. Spleen and liver were not palpable. The upper extremities were slightly rigid, lower ones markedly so. Ker-

line to Gram. General condition of infant worse than that on admission. Opisthotonos increased.

November 6th. Lumbar puncture resulted in dry tap. Opisthotonos and retraction of head still marked. Projectile vomiting after feeding. Lost one pound in weight since admission. Slight external strabismus of right eye present. Temperature to-day ranged between 99.6° and 100.2° F. (37.8° C.). Pulse regular, rapid, and of fairly good force. Respirations rapid and somewhat irregular. Forty-five c.c. turbid fluid withdrawn through anterior fontanel, and 30 c.c. serum injected.

Dr. Flexner saw this case with me at the hospital and suggested washing the purulent discharge through the anterior fontanelle. This was done by using a long aspirating needle, the calibre of which was somewhat larger than the needle ordinarily employed to do lumbar puncture. The intracranial cavity was aspirated and as much fluid as possible drained off (from 30 to 50 c.c.). The cavity was then washed with normal salt solution, and lastly from 30 to 50 c.c. Flexner serum was injected.

November 7th. Twenty c.c. fluid withdrawn through anterior fontanelle, and 30 c.c. serum injected.

November 9th.—Lumbar puncture resulted in turbid fluid mixed with blood. About 10 c.c. of the serum was injected into the spinal canal, and 20 c.c. into the anterior fontanelle, the latter injection was preceded by the aspiration of 40 c.c. turbid fluid somewhat reddish in character, and containing heavy deposit of pus cells. Smear showed typical meningococcus.

November 10th. Lumbar puncture resulted in dry tap. Fontanel aspirated, 10 c.c. purulent fluid withdrawn. Twenty c.c. serum injected through anterior fontanelle. Smear showed typical meningococcus.

November 11th. Forty c.c. fluid withdrawn through anterior fontanelle. Fluid was turbid, and somewhat bloody. Contained much pus. Typical meningococcus found in smear. Twenty-five c.c. serum injected through anterior fontanelle.

The child showed renewed strength after each injection of serum, so that it appeared to exert a decided benefit. The rapidity with which these cases terminate fatally, and the fact that this infant was sick, in all, thirty-seven days gave me hope for his recovery. The case terminated fatally.

CASE II.—Emilio G., four months old, was admitted to the Sydenham Hospital, January 6, 1909. Family history negative.

Personal history. Normal delivery. Full term. Fed since birth on Straus's milk.

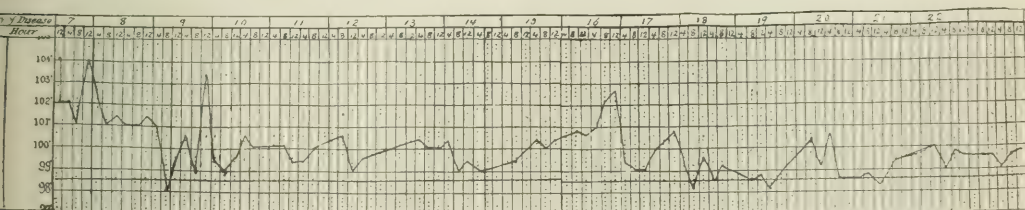


FIG. 2.—Temperature chart of Case II.

nig's sign was present on both sides. Knee jerks both exaggerated. No ankle clonus. Cremasteric reflex obtained. Genitals normal. There was no eruption on the skin, no ecchymosis. Tache cérébrale was marked. No enlargement of the glands. The eyes reacted sluggishly to light. Slight internal strabismus present in left eye.

Clinical Notes.—November 5th. Since day of admission infant had a temperature which ranged between 97° and 99.6° F. (36.2 and 37.6° C.), the highest being 100° F. (37.80° C.). The pulse was intermittent for the last three days. Opisthotonos more marked. There was projectile vomiting after feeding, and infant showed signs of emaciation.

November 3rd. Lumbar puncture resulted in dry tap.

November 4th. Lumbar puncture resulted in dry tap. November 5th. Anterior fontanelle aspirated, 45 c.c. turbid fluid drawn off. Microscopical examination revealed many pus cells and meningococci (intracellular diplococci) nega-

Present illness began two weeks ago with twitchings of the muscles. One week ago mother noticed retraction of the head. There had been no vomiting. The baby had moaned almost constantly.

Physical examination. Head showed bald occiput. The anterior fontanelle was open and slightly bulging. The pupils were equal and slightly contracted. There was marked retraction of the head, amounting to opisthotonos. The chest showed poor expansion. There was a systolic murmur heard at the apex of the heart. The lungs over left base, posteriorly, showed small areas of dullness, bronchial voice, and breathing. The abdomen was retracted. The liver and spleen were not palpable. There was marked rigidity of both arms and legs. The reflexes were exaggerated. Kernig's sign was not elicited. Lumbar puncture showed turbid fluid in which the *Diplococcus intracellularis* was found.

The duration of the disease was thirty-six days. By

means of ten lumbar punctures, I aspirated 146 c.c. spinal fluid, and in nine intraspinal injections, I injected 245 c.c. Flexner serum. The average injection was about 30 c.c. The child made a complete recovery without any sequelæ.

BLOOD COUNT IN CASE II.

	White blood corpuscles	Polynuclear leucocytes	Lymphocytes		White blood corpuscles	Polynuclear leucocytes	Lymphocytes
	Before injection				After injection		
Jan. 7	15,800	68%	34%	Jan. 7	17,200	74%	26%
Jan. 8	12,500	66%	34%	Jan. 8	13,400	64%	36%
Jan. 9	12,500	66%	34%	Jan. 9	14,200	70%	30%
Jan. 11	12,300	56%	44%	Jan. 10	15,400	68%	32%
Jan. 13	13,600	66%	34%	Jan. 11	14,100	70%	30%
Jan. 15	17,800	75%	25%	Jan. 12	12,800	68%	32%
Jan. 16	11,500	70%	30%	Jan. 13	13,400	73%	27%
Jan. 18	11,500	72%	28%	Jan. 14	13,400	73%	27%
Jan. 21	17,800	79%	21%	Jan. 15	17,800	79%	21%
Jan. 22	17,800	74%	26%	Jan. 16	17,800	79%	21%

CASE III.—Hannah R., eleven months old, was admitted to the Sydenham Hospital, March 2, 1909. The father was insane, otherwise the family history was negative. She was a full term child. Normal birth. Breast fed, but supplemented by bottle feeding. Had no diseases of infancy. Present illness began one week ago with fever and chills. Vomited once four days ago. Had no convulsions nor twitchings, no rigidity noticed by mother. No coma, no diarrhoea. It seemed to mother that infant could not see. On admission to hospital the infant was in semistupor, and slight general rigidity.

Physical examination showed internal strabismus of the right eye, pupils did not react to light. Purulent discharge from both eyes. The tongue was coated, the pharynx congested and studded with granules. The neck was rigid, no glands palpable. The breathing was Cheyne-Stokes. The pulse was rapid and irregular, systolic murmur at apex not transmitted. Rhonchi were heard all over the chest, especially over right apex. The abdomen was not distended, nor were any masses felt. The liver and spleen were not palpable. Kernig's sign was absent. *Tache cérébrale* was present. The prognosis was bad.

Clinical notes. March 2d, at 7 p. m., on day of admission, 5 c.c. turbid fluid was withdrawn by lumbar puncture. At the same time 15 c.c. serum was injected into the spinal canal. Examination of the fluid withdrawn showed the presence of meningococci, few in number, with very numerous pus cells. A film separated after the fluid stood for some time. The blood count that night showed: White blood corpuscles, 18,000; polynuclear leucocytes, sixty-four per cent.; lymphocytes, thirty-six per cent.

March 3d, at 4 p. m. ten c.c. of turbid fluid was withdrawn and 20 c.c. serum injected. Following this injection the child appeared to suffer from shock. Respiration became slow, deep, and labored. Pulse was slow and of high tension. One hour later twitchings of the right side of the face were noted. Between 6 and 11 p. m. there were twitchings of the right hand and foot. Examination of the fluid revealed a diminished number of pus cells, many of which were disintegrated. Meningococci were not found.

March 4th. Pupils were unequal, the right being larger. Slight facial palsy noted on right side. The blood count showed white blood corpuscles, 15,200; polynuclear leucocytes, sixty-eight per cent.; lymphocytes, thirty-two per cent.

March 5th. Pupils equal. Strabismus had disappeared. March 6th. Child looked better, very little rigidity present. Slight facial palsy, right side.

March 9th. Child had developed a spasmodic cough, resembling pertussis.

March 10th. No rigidity. No facial paralysis. Blood count showed: White blood corpuscles, 21,300; polynuclear leucocytes, thirty-eight per cent.; lymphocytes, sixty-two per cent.

March 14th. A lumbar puncture was made and 5 c.c. of clear fluid was withdrawn. No bacteria or pus cells found. The blood count showed: White blood corpuscles, 24,200; polynuclear leucocytes, forty-four per cent.; lymphocytes, fifty-six per cent. The infant showed evidence of deafness in both ears. The high white corpuscles count and the relative lymphocytosis were attributed to the cough.

March 21st. The infant was discharged cured.

A decided reaction followed each and every injection of the serum. The pulse rate was increased, the volume improved, and the tension much higher. The leucocytes were invariably increased, with but few exceptions, showing a marked hypoleucocytosis. The polynuclear leucocytes were also increased after each injection. As a rule the mononuclear leucocytes and the lymphocytes were reduced within six hours after the serum injection. The prognosis, although bad in all cases, seemed to improve because two of the infants received maternal feeding. The third patient received artificial feeding of cow's milk.

Special Symptoms noted during the epidemic. Convulsions.—The earliest symptom in many cases is convulsions. Muscular rigidity confined to the muscles of the neck; chiefly sternocleidomastoid, also marked opisthotonos.

Extreme extension muscle rigidity. This rigidity is confined to the lower extremities in some, to the upper extremities in others. In some cases it was found in both. The patella kneejerk while absent in some cases was greatly exaggerated in others. The fontanelle was bulging and associated therewith intracranial pressure existed. The patellar reflex was usually absent. The cremaster reflex was present in several cases. It was present in an infant less than one year old. The Kernig sign was present in all cases.

Muscular pains. Evidence of pain on the slightest handling was invariably present. The muscles, the joints, and the course of the sciatic nerve trunk elicited pain. Rotation of the arm, and general handling of the abdomen showed marked hyperæsthesia. The plantar reflex was present in all cases. I have observed this symptom in the hospital service, in normal children. No importance therefore should be attached to this reflex.

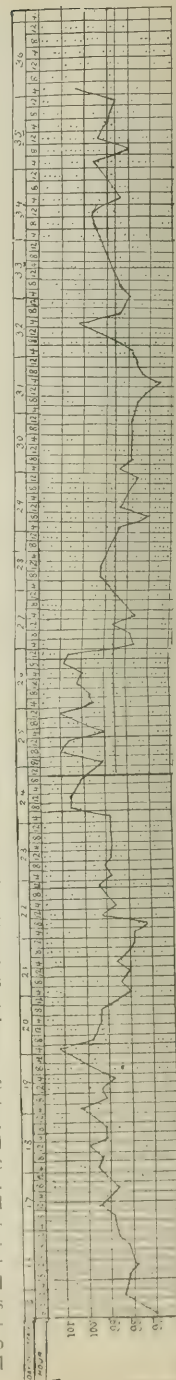


CHART 3.—Temperature chart of Case III.

The *tache cérébrale*. A strong *tache* appearing very slowly and lasting a long time, was present in all my cases. This *tache* differs markedly from the stroking of the skin in normal children.

Eruptions. An exanthematous eruption resembling herpes was found in ten per cent. of the cases. In seventy per cent., however, there was a petechial eruption resembling purpura. This rash was of a dark bluish color and might be seen as early as the second day of the disease. It lasted from one to two weeks in severe forms of the disease.

Delirium was noted in fifty per cent. of the cases.

High fever. As a rule most cases showed a tendency to high fever, though one exceptional case did not conform to this rule.

Vomiting. This is one of the earliest symptoms. Persistent vomiting with high fever and rigidity of the muscles in children wherein careful feeding methods were pursued, were invariably suspected of meningial disease, and lumbar puncture performed to aid in making the diagnosis.

The joints showed swelling in several cases, resembling polyarthritis.

Facial paralysis was noted in fifty per cent. of the cases. It was a unilateral palsy. Some cases showed lagophthalmus. Deafness and blindness were noted in forty per cent. of the cases. The eye symptoms vary. In a report of forty cases with special reference to the eye symptoms, Randolph, quoted by Leszynsky (*Johns Hopkins Hospital Bulletin*, IV, 32, 1893), states that "patients with enormously dilated pupils died." Among 111 cases of cerebrospinal meningitis reported by Councilman, Mallory, and Wright (*Massachusetts State Board of Health Report*, 1898, p. 143) "various abnormal conditions of the eyes were noted in sixty-seven cases." They state that no systematic examination of the eyes was made in all cases. In one case "bulging of the eyes" was noted.

After a review of the literature we must conclude that the eye symptoms vary with the epidemic and the degree of infection.

Differential Diagnosis. This disease is frequently confounded with mastoiditis. A purulent otitis extending to the mastoid cells may frequently give symptoms of sternocleidomastoid rigidity with fever, pain, and constant moaning, but a lumbar puncture will show the absence of the specific diplococcus.

Scarlet fever of a severe type will frequently give rise to gastric and meningial symptoms greatly resembling meningitis. In the septic form of scarlet fever there is stupor, somnolence, and moaning, but in scarlet fever we also have throat and tongue symptoms, in addition to the characteristic exanthem. In the atypical forms of scarlet fever in which there is no exanthem visible it may be very difficult to differentiate. The examination of the throat and the presence of necrotic pseudomembranous patches will establish the diagnosis.

Septic pneumonia when confined to the apex of the lung will frequently irritate the cervical ganglion and give rise to symptoms of stupor, delirium, and rigidity of the sternomastoids. The presence

of the pneumonia and the previous history of the case will aid in establishing the diagnosis of cerebral pneumonia and excluding cerebrospinal meningitis.

Since the diplococcus intracellularis has been isolated as the aetiological factor in cerebrospinal meningitis, many attempts have been made to produce a specific serum analogous to the healing serum of diphtheria. In Europe we have Jochmann, who has given us a serum for this purpose. Schöne, who tried Jochmann's serum in a series of cases, reports a mortality of twenty-eight per cent. In a series of cases treated without this serum, this same observer reports a mortality of fifty-three per cent. Wassermann in a series of fifty-seven cases reports a mortality of 47.3 per cent.

American Statistics.

Dr. Flexner was kind enough to give me the following statistics:

Cases of Epidemic Cerebrospinal Meningitis Treated with the Antimeningitis Serum.			
Total No. of cases.	Recovered.	Died.	Per cent. mortality.
712	486	224	31.4

Analyzed According to Period of First Injection.

First to third day		Fourth to seventh day		Later than seventh day	
Recov- ered	Died	Recov- ered	Died	Recov- ered	Died
180	61	174	10	129	94
	25.3	5.7	27.8	42.6	42.6

Specific Treatment with Flexner's Serum. The mortality of from sixty-nine to ninety per cent. in New York city, during the height of the epidemic in 1906, clearly shows that some better method of treatment than the one in vogue would be welcome. A large number of infants who died were treated by lumbar puncture and intraspinal injections of various drugs; cupping and antispasmodic and sedative treatment; locally, hot baths, in addition to leeches over the spine and mastoid, and icebags have been used with poor result. It remained for Simon Flexner to introduce the antimeningitis serum which has proved of excellent value, and in some instances acted like a specific healing serum in the treatment of this dreaded disease.

The literature both in America and in England has reported a series of several hundred cases treated by this antimeningitis serum. A very striking instance of improvement is described by Dunn, who reports that in the Boston Children's Hospital, from 1899 to 1907, before the serum was used, the mortality ranged from sixty-nine to eighty per cent. Since the spring of 1907, by the use of the serum the mortality sank below twenty per cent.

The greatest mortality has usually been noted in infants during the first year of life. Holt¹ describes a series of twenty cases under one year, treated in his wards, not one infant of which recovered. He further quotes a series of sixty-one cases, under two years of age, with fifty-five deaths, a mortality of ninety per cent. Koplik² states that of twenty-seven cases observed by him, twenty-three either died or were discharged unimproved.

In a series of seven cases treated at the New York

¹Holt. *Am. J. Dis. Child.* 1907, vol. 1, p. 375.

²Koplik. *Osler's Med. Jour.* 1907, vol. 1, p. 375.

Foundling Hospital during 1905, the mortality was 100 per cent.

Flexner reports a series of twenty-two cases treated with antimenigitis serum: there were eleven recoveries and eleven deaths. When it is noted that it is very rare for an infant to recover, then the striking benefits of the serum will be apparent. Another series of nineteen cases between the first and second year were treated with Flexner serum. Eleven infants recovered and eight died, mortality 42.1 per cent. In sixty-eight cases ranging between two and five years there were fifty-two recoveries and sixteen deaths, mortality 23.5 per cent. Flexner states that out of 393 cases, 295 children, or seventy-five per cent., recovered, and 98 children, or twenty-five per cent., died.

In a series of twenty-one cases reported by me there were fourteen deaths, without serum treatment. In one case death occurred twelve hours after the first symptom was noted. Other patients were comatose and lasted as long as fourteen days. A mortality of 66⅔ per cent.

In a series of ten cases treated with the antimenigitis serum there were seven recoveries and three deaths.

Holt, in a paper read before the Medical Society of the State of New York, January 26, 1909, describes the action of the serum as follows: "The serum acts chiefly upon the meningococci, diminishing their viability and increasing their capacity for phagocytosis. By its effect upon the microorganisms it arrests the inflammatory process. To accomplish this result the serum must be injected in considerable quantity; it must be brought directly into contact with these organisms, and in a certain degree of concentration. This enables one to understand why it is practically without effect when given subcutaneously or intravenously, also to appreciate the advantage of withdrawing by puncture as much cerebrospinal fluid as possible before the injections are made, and finally the necessity for full doses early, before important lesions have occurred."

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162 WEST EIGHTY-SEVENTH STREET.

THE WASSERMANN REACTION (NOGUCHI MODIFICATION) IN PELLAGRA.

Report of Thirty Cases.*

By HOWARD FOX, M. D.
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In a recent communication (*Journal of the American Medical Association*, 1909, p. 1187) Dr. C. C. Bass, of Tulane University, reports that he has obtained six positive Wassermann reactions in six cases of pellagra, using lecithin as antigen. He suggests that these results if confirmed may "tend to strengthen the idea that the disease is of protozoan origin." He further states that it would add another disease to be considered in interpreting a positive Wassermann reaction. It is with the purpose of continuing these researches that the writer has come to the State where so many cases of pellagra have been recognized. Owing to the kindness of Dr. J. W. Babcock and Surgeon-General Wyman, free access to a most unusual material has been obtained.

Thirty cases of pellagra have been tested by the Noguchi modification of the Wassermann reaction. The writer would have preferred, as has been his custom, to have performed both the regular Wassermann and Noguchi tests simultaneously. Owing to the limited amount of time available, it was only possible to employ the more convenient modification of Noguchi. The writer feels convinced, however, that the Noguchi test is fully as accurate as the original method of Wassermann.

The cases examined included eight white and twenty colored women, one white man and one colored boy. All of the patients were from South Carolina, and with the exception of Case 1, were inmates of the State Hospital for the Insane at Columbia. All of the patients with perhaps one exception have shown unmistakable symptoms of pellagra, though at the time of examination some did not present very active symptoms of the disease. The patients who were chosen for examination were those which apparently showed no evidence of syphilis. To have excluded syphilis from the patients' history would have been difficult or impossible from the nature of the cases.

The technique was that described by Noguchi and by the writer in previous communications (*Medical Record*, March 13, 1909, and *Journal of Cutaneous Diseases*, August, 1909). The materials used included 0.04 c.c. of fresh guinea pig serum, a weak suspension of human corpuscles (preferably washed) in the proportion of one drop to 4 c.c. of physiological salt solution, one capillary drop of patient's serum (active) and the antigen and amboceptor in paper form. The tubes were incubated for one half hour for the first, and two hours for the second period, after which the results were read. Two different antigens were used in testing every case. One of these consisted of an extract of syphilitic liver; the other (especially prepared by Dr. Noguchi for the present investigation) was a composite extract of syphilitic liver and normal hearts and kidneys. Both had previously been tested by Dr. Noguchi and found to be entirely satisfactory.

*Read at the National Conference on Pellagra, held at Columbia, S. C., November 12, 1909.

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In performing the reaction, a known negative serum and one or more known positive sera were always used for comparison. The positive sera included five cases of syphilis and two of leprosy which the writer had previously tested and found to be strongly positive. The entire series of thirty cases was tested four times. With the exception of one case, no strongly marked positive reactions were obtained. In this case it was later found that a previous syphilitic infection was quite probable. In two other cases there was a positive reaction of moderate intensity and in five cases the reaction was only weakly positive. Even in the cases giving a moderate positive reaction the inhibition of hæmolysis was far from being complete and was very easy to distinguish from the marked reaction given by the syphilitic and leprosy sera.

While positive reactions are at times given in apparently nonsyphilitic cases, there appears to be only one disease, namely, leprosy, in which a strong positive reaction is a frequent occurrence. In an examination of fifteen cases of leprosy during the past few months in New York the writer found twelve positive reactions, many of them being very intense. Somewhat similar results have previously been obtained by other observers. The writer feels confident that pellagra will not prove to be a disease in which a positive Wassermann reaction will be frequently found. If such a sensitive test as that of Noguchi (and the objection is sometimes made that it is too sensitive) fails to show many positive reactions, it does not seem probable that they will be obtained by the regular Wassermann method.

The writer desires to express his heartfelt thanks to Dr. J. W. Babcock, superintendent of the State Hospital for the Insane, and to Dr. Walter Wyman, surgeon general, United States Public Health and Marine Hospital Service, for permission to examine the cases. He is also indebted for laboratory facilities to Dr. C. F. Williams, secretary of the State Board of Health, and Dr. F. A. Coward, director of the Laboratory. For Case I, the writer wishes to thank Dr. J. J. Watson, of Columbia.

CASES.

CASE I.—C. S., boy, colored, twelve years old; not insane; symptoms of pellagra first noticed five years ago. At present there is an extensive eruption of face, neck, and back of hands, wrists, elbows, and legs. There was constant salivation, distressing thirst, red tongue, severe uncontrollable diarrhoea, spastic gait, greatly increased reflexes, unequal pupils. There were frequent tonic, muscular spasms drawing the body to the left side. Patient was greatly emaciated. Mental condition was not markedly affected. Reaction, weakly positive.

CASE II.—H. M., woman, colored, about fifty years old; manic depressive insanity. First attack of pellagra four years ago. Fairly well till one month ago, when symptoms recurred. At present eruption on face and hands. Diarrhoea. Knee jerk absent. Reaction, negative.

CASE III.—F. W., woman, colored, about twenty-eight years old; manic depressive insanity with pellagra. Symptoms of pellagra first noticed three weeks ago. At present red tongue, diarrhoea, erythema of backs of hands. Knee jerk increased. Reaction, negative.

CASE IV.—H. J., woman, colored, about twenty-eight years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed ten months ago. At present characteristic eruption of hands, feet, and neck; salivation. Reaction, negative.

CASE V.—M. H., woman, colored, about forty-five years old; epilepsy.—First symptoms of pellagra developed six weeks ago. At present marked characteristic eruption of

hands and neck, diarrhoea, exaggerated knee jerk. Reaction, moderately positive.

CASE VI.—M. L., woman, colored, about fifty years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed six weeks ago. Characteristic eruption of hands and neck, diarrhoea. Knee jerk abolished. Reaction, negative.

CASE VII.—M. H., woman, colored, about thirty-five years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed three weeks ago. At present characteristic eruption of hands and neck, diarrhoea, red tongue. Knee jerk abolished. Reaction, moderately positive.

CASE VIII.—L. L., woman, colored, eighteen years old; pellagrous insanity. Admitted with symptoms of pellagra three months ago. At present eruption of hands, elbows and legs. Had had attacks of rigidity of dorsal muscles in which she fell backward. Tongue rough, with elevated papillæ, diarrhoea. Knee jerk much exaggerated. Reaction, negative.

CASE IX.—M. P., woman, colored, about twenty-five years old; paresis with pellagra. First symptoms of pellagra six weeks ago, tongue slightly checker board. Knee jerk abolished. Reaction, weakly positive.

CASE X.—R. A., woman, colored, forty-three years old; pellagrous insanity suggesting alliance with paresis. Patient admitted one month ago with characteristic eruption on hands and feet, diarrhoea. Tongue fissured (checker board). Knee jerk abolished. Reaction, negative.

CASE XI.—J. B., woman, colored, about sixty years old; pellagrous insanity. First symptoms of pellagra one year ago. At present nearly well. Exaggerated knee jerk. Bronzing of exposed surfaces of hands. Reaction, negative.

CASE XII.—S. K., woman, colored, about twenty-five years old; pellagrous insanity. Admitted to hospital eight months ago. Hands bronzed, marked salivation. Knee jerk abolished. Reaction, negative.

CASE XIII.—M. W., woman, colored, about thirty years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed one month ago. Characteristic eruption on hands and neck. Reflexes exaggerated. Reaction, negative.

CASE XIV.—C. M. B., woman, colored, about forty years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed one month ago. Characteristic eruption on hands and neck. Reflexes exaggerated. Reaction, negative.

CASE XV.—H. C., woman, colored, thirty-five years old; pellagrous insanity. Admitted to hospital two months ago with symptoms of insanity. Tongue fissured and slimy. Nails slightly clubbed, elbows slightly pigmented. Knee jerks normal. Reaction, negative.

CASE XVI.—J. C., woman, colored, about forty-five years old; pellagrous insanity; melancholia one year ago. Eruption first noticed during past summer. At present typical eruption on hands and neck, pigmented tongue. Knee jerk abolished. Reaction, negative.

CASE XVII.—J. T., woman, colored, about thirty-five years old; pellagrous insanity. First symptoms noticed one year ago. At present eruption on hands. Lips exfoliated. Knee jerk brisk. Reaction, negative.

CASE XVIII.—L. M., woman, colored, twenty-eight years old; pellagrous insanity. History of attack one year ago. Present attack began one month ago. Eruption on face, hands, and feet. Severe diarrhoea, red tongue. Knee jerk slightly exaggerated. Confined to bed. Reaction, weakly positive.

CASE XIX.—M. P., woman, colored, about fifty years old; clinical diagnosis of paresis on admission nine months ago. Symptoms of pellagra first noticed two months ago. At present eruption of hands and feet, broad slimy tongue. Some typhalism. Diarrhoea. Confined to bed recently. Reaction, negative.

CASE XX.—T. W., woman, colored, about thirty years old; manic depressive insanity with pellagra. First symptoms of pellagra noticed one year ago. Depression, diarrhoea, pigmented tongue. Knee jerk abolished. Reaction, negative.

CASE XXI.—D. H., woman, colored, thirty years old, married; pellagrous insanity. History of attack one year ago. At present few symptoms. Reflexes exaggerated. Reaction, negative.

CASE XXII.—L. B., woman, white, thirty-two years old,

married; pellagrous insanity of manic depressive type. Had had a typical attack with eruption, stomatitis, and diarrhoea. Duration of disease two years. At present mental instability, erythema of back of hands. Reaction, weakly positive.

CASE XXIII.—M. H., woman, white, twenty-eight years old, married; pellagrous insanity with suicidal tendency. Had had a typical attack of pellagra with predominance of mental symptoms. Disease associated with pregnancy. Duration less than one year. At present no eruption. Reaction, negative.

CASE XXIV.—M. O., woman, white, thirty-six years old, single; pellagrous insanity. Had had a typical attack with marked anaemia. Repeated attacks of pellagra several times a year. Duration of pellagra about two years. At present diarrhoea, anaemia, erythema of backs of hands. Reaction, weakly positive.

CASE XXV.—M. W., woman, white, about fifty years old, married; manic depressive insanity of long duration. Pellagra had developed within the last year and had run typical course. At present marked diarrhoea, eruption, stomatitis, depression. Reaction, negative.

CASE XXVI.—B. G., woman, white, thirty-five years old, married; pellagrous insanity. Duration of disease four months. At present marked emaciation, very slight eruption, anaemia, diarrhoea. Reaction, negative.

CASE XXVII.—F. R., woman, white, thirty-six years old, single; pellagrous insanity. Duration one year. At present anaemia, depression, diarrhoea, eruption. Patient emaciated. Reaction, negative.

CASE XXVIII.—L. B., woman, white, forty-five years old, single; moral imbecility with pellagra. Duration of pellagra two years. At present tongue swollen and indented by teeth. Stomatitis, diarrhoea, marked emaciation, eruption on back of hands. Reaction, negative.

CASE XXIX.—M. B., woman, white, about forty years old, married; pellagrous insanity. Duration of disease six months. At present anaemia, diarrhoea, marked emaciation, very slight eruption on back of hands. Reaction, moderately positive.

CASE XXX.—S. C. L., man, white, about thirty-five years old; pellagrous insanity. Duration of disease two years. At present delusions (suicidal), stomatitis, uncontrollable diarrhoea. Reaction, negative.

CONCLUSIONS.

1. Cases of pellagra do not often give a positive Wassermann reaction.

2. A positive reaction, when obtained, is generally weak and is easily distinguished from the strong reactions found in syphilis and in many cases of leprosy.

3. The value of the Wassermann test is not affected by the findings in pellagra.

Discussion by Dr. C. C. Bass, of New Orleans, La.: I wish to speak with reference to the paper of Dr. Fox, and to further emphasize the fact that his experiments with complement fixation in pellagra differ naturally from mine, in that he used as antigen extract of syphilitic liver and normal hearts and kidneys. Those do not yield a strong solution of lecithin.

My paper^{*} referred only to results with lecithin as antigen. When using the same sort of antigen as Dr. Fox, I got about the same results as Dr. Fox did. Complement fixation experiments that I have done, using many different antigens including various extracts from different organs and tissues from pellagrins as well as cultures isolated from patients and also from corn meal, have all been reserved for future reports and not considered worth while to include in the paper here read.

The only explanation so far suggested to me for the fact that lecithin serves better for antigen in pellagra than organ extract is that because of the destructive process in the nervous system a large amount of lecithin is set free and there may be formed in response to this increased lecithin content of the blood much antilecithin amboceptor.

616 MADISON AVENUE.

THE QUESTION OF THE ÆTIOLOGY OF PELLAGRA.*

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It is not my purpose nor would I presume for a moment to belittle the remarkable contributions of Lombroso and his school to the study of this disease, but, throughout it all, there is not, to my mind, a satisfying and convincing proof, either that corn is the sole factor in its production, nor has it yet been shown that a protozoan element does not play a part.

So dominated has the Italian thought been by the zeitoxic theory of Lombroso, that it comes as a surprise to hear even scientists of that country question the truth of the sole influence of spoiled corn as an ætiological factor. Yet such is the case, and we note that at the Third Pellagrological Congress held at Milan in September, 1906 (1), "Palidino pertinently suggests that in Mantua, though good maize is used, yet pellagra does not diminish. Mangieri asserts to have seen in twelve years but two pellagrins at Constantinople, where much maize is used. Terni holds that ætiology is doubtful and the real cause is unknown. Moreover, he asserts, that in Egypt pellagra is not related to the use of molded corn, nor does the acme of the epidemic correspond to the Nile flood, which might cause the humidity needed by mold. Ceni described pellagra among people who eat no maize and emphasized its disappearance upon improving sanitary conditions, the food remaining the same. Meschinelli remarked that in spite of all efforts, pellagra seems to diminish little. Here and there is some respite in the advance of the disease, but in general we cannot say that the disease is giving way, or that the number of the infected regularly diminishes, so long as in some places it increases. At best, the struggle against pellagra but holds it in check, if indeed that. The results and the measures taken are disappointing."

On the other hand, in France, England, and Spain, where the Lombrosian influence is not so strong, we find a widely spread dissatisfaction with the zeitoxic claim and a casting about for more convincing proof, or else the seeking of another cause. Notably is this the case with Sambon and Manson in England, and Nicholay and Jambon in France, though Sandwith, in the former country, ascribes a failure to accept the corn theory in *toto* as evidence of insufficient study of the subject (2).

Following the incrimination of corn by Marzari in 1810, every possible shortcoming has been laid at the door of this splendid cereal, and every bacterium and fungus found growing upon it has come in for its share of the odium. First, it was a lack of animalizing substance; then the *Sporosorium maidis*, and one thing after another, each, strange to say, being stated by its particular champion capable of producing the symptoms in animals. Finally, in 1870, Lombroso put forward the zeitoxic theory, based upon experimental evidence, by no means convincing, which deems the cause toxic

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products analogous to alkaloids, developed during the growth of certain molds upon spoiled corn. Neither of itself is capable of producing the disease; in fact, the mold is harmless when grown on barley, rye, grapes, jam, etc.; yet let it but grow on spoiled corn, and there is developed an intense poison, capable of producing, it is asserted, the symptoms of a distinct pathological entity, differing in every detail from all other known fungoid diseases. This very uniqueness, as compared with diseases of a like origin, is calculated to make us sceptical, for in the past our greatest assistance in forecasting the nature of individual diseases has been by analogy. A moment's thought brings to mind examples of this.

The lights of the past can but reflect on the present, and it would be well to bear in mind that from *Sporosorium maidis* Ballardini produced in man gastritis and diarrhœa, while with chickens it caused loss of weight, droopiness, and a falling of the feathers. This he called pellagra. Neusser and De Glaxa accused the colon bacillus of decomposing corn, even sound corn, after ingestion, with the production of a poison which caused pellagra. The latter scientist reports obtaining the characteristic anatomical lesions in dogs fed on sound corn porridge and moreover the proper symptoms and lesions in animals inoculated with a toxine produced by the colon bacillus cultivated on a maize medium.

In 1894, Pelezzi and Tirelli injected dogs and rabbits and fed by mouth toxic substances from cultures of the bacteria of maize, and obtained spastic paresis of the posterial limbs and other symptoms, which they likewise deemed characteristic of pellagra.

Similarly, Carrarioli, Di Pietro, Ceni, and Besta each finds a different specific cause for pellagra and obtain in animals the desired symptoms.

Can we have any clearer demonstration of the powerful influence mental attitude exerts over our interpretations of physical phenomena, notoriously inaccurate at best, and does it not tend to make us very cautious about accepting as final the statements of any one man or set of men about so fundamental a thing as the cause of a disease?

In order to prove beyond a reasonable doubt the causative relationship existing between pellagra and spoiled corn, experimental evidence has been sought for, through animals, and continues its rôle of deceit, made possible by false interpretations, through misdirected enthusiasm. Lombroso, especially, has invaded this field and presents to us certain results that he considers final. Indeed, I am told that he has asserted to have said the last word on the subject twenty years ago.

Experiments (3).

First, ten dogs and a large number of chickens were fed for six or eight weeks up to the natural end of life on corn spoiled with *aspergillus* and the following symptoms developed in the dogs:

Weight.—All the dogs lost weight except one.

Temperature.—There was nearly always an elevation of temperature coincident with the diminution of weight.

Muscular spasm.—A symptom frequent but not constant was a tonic muscular spasm and the increase of tendinous reflexes. In seven cases out of the ten, a complete torpor of the muscles was produced. In six cases, cerebral torpor; in three, loss of sensibility; and in four cases out of the ten, muscular tremors.

Diarrhœa.—The most frequent complication was diarrhœa preceded by a refusal of food and dysphagia. In seven cases, the latter symptom was most often due to muscular spasm.

Skin.—The erythema of the skin was manifested once only, completely and certainly, and then in a dog which remained free from anæmia, torpor, and spasmodic phenomena, and in which the sitophobia and paresis disappeared with the appearance of the erythema. The microscopical examination of the skin in this case did not, however, exclude all idea of a parasitic cause.

In twelve chickens fed on spoiled corn convulsive phenomena were exceptionally noted and there were produced only atrophy of the feather follicles with changes of the skin and horny appendages.

Finally, the experiments that in the opinion of the Lombrosians goes farthest toward definitely proving their contention was that made in the case of human beings. The tincture of corn spoiled by *Penicillium glaucum* was given for a length of time to twelve sound and healthy individuals, soldiers and laborers at work in the city, and at the time of the experiment, well fed. The following results were obtained

Symptoms.	No. of cases.
Bulimia,	9
Pruritus of back and face,	8
Loss of weight,	8
Urine diminished and of high specific gravity,	8
Diarrhœa,	6
Diurnal somnolence,	5
Erections,	5
Persistent muscular weakness,	5
Desquamations,	5
Headaches,	4
Anorexia,	3
Burning of the eyelids,	3
Repugnance for water,	3
Hyperidrosis,	3
Ephelides on the arms and hands,	3
Palpitation of the heart,	3
Syncope,	3
Variation of the pulse,	3
Increase in weight,	2
Intense thirst,	2
Increase of muscular force,	2
Sensation of heat in head,	2
Sensation of warm water on the back,	2
Irritability and emotionalism,	2
Restlessness at night,	2
Erythema,	2
Tinnitus aurium,	2
Redness and burning of the skin,	2
Burning of scrotum,	1
Mydriasis,	1
Prosis,	1
Prickling sensation,	1
Oppression and precordial pains,	1
Vertigo,	1
Furunculosis,	1
Enteralgia,	1
Sensation of foreign body in the head,	1
Salty taste,	1
Burning in the throat,	1
No symptoms,	2

In these experiments we note at once an utter lack of uniformity in the symptoms presented by the different individuals, and, indeed, in some there were no symptoms at all. Now, can one accept these phenomena of acute intoxication as definite proof that corn spoiled by penicillium and aspergillus produces pellagra, a disease characteristic only in its entire symptom complex? One of the most striking elements of the disease, a symmetrical skin lesion, is entirely wanting and, moreover, would it not be desirable, if we are to accept it as positive evidence, that the eruptions really occurring should tend to show some slight periodicity, a glaring characteristic of the true disease?

Pellagrosine, the essential poison of Lombroso, will produce in dogs and chickens both droopiness and diarrhoea and in man torpor, anorexia, nausea, and diarrhoea. Would it not be reasonable to expect something more classic than this?

We would not pretend to deny that these experiments show the development of a powerful toxine, that affects most unhappily the victims subjected to its influence, but, on the other hand, diarrhoea can be made to develop in animals who succumb by being fed on any kind of mold, and the symptoms produced in Lombroso's experiments can be reproduced with extracts from spoiled and moldy wheat and barley (4). Ciotto has even succeeded in demonstrating the presence of alkaloid substances both in unaltered corn and in other cereals. Furthermore, Babes and Sion state that amygdalin causes appearances similar to pellagra in plant eating animals, yet it is inert in carnivora and, moreover, they state that the following symptoms have been produced in mice, rabbits, and dogs by other toxins than that of spoiled maize, viz.: Loss of appetite; diarrhoea; inflammation of the bowels with hæmorrhage and general weakness; paralysis, beginning at the hind extremities; tetanus and clonuslike cramps; opisthotonos; skin affections and particularly, also, desquamations and falling of the hair.

We admit it is not possible to deny the overwhelming evidence of the frequent and very suggestive association of pellagra with the ingestion of corn, and especially of spoiled corn. Indeed, these may contain very essential elements in the production of the disease, but this is far from naming them as the ultimate and essential element in its production.

Aside from the bare experimental phase of the question, certain discrepancies in the maize theory are worthy of our close scrutiny. The cultivation and extensive use of maize antedates by about 200 years the appearance of pellagra in Italy (5), and zeists explain the long period of freedom from symptoms in the individual by asserting that the poison acts very slowly, taking years to produce the disease in man, yet, when a guinea pig or other animal is killed within a few short days by the identical poison, so stated, it is still accused of dying of pellagra.

There are extensive regions to-day where pellagra is widely spread but where corn is neither grown nor eaten. This is notably the case as cited by Pons Sanj in the province of Vojoz, Spain, where pellagra is endemic, though the inhabitants

eat no maize; and, again, the province of Oviedo was once ravaged by pellagra, but in 1900 it suffered least, though no changes had taken place in the culture, storage, preparation, or quantity eaten of maize, while the province of Madrid, where maize is only seldom used as food, suffered severely.

Now, what are we to say about those cases of pseudopellagra, so called, and sporadic pellagra, reported as far back as 1852 and more recently in France as developing in persons who had never eaten the products of corn? Most of the French cases are admittedly alcoholic, but we cannot ascribe their origin to alcohol alone, and we find ourselves still face to face with an unknown causative agent, just as we are, in the ultimate analysis, in cases of true pellagra.

In 1903, Garbini identified several cases of undoubted pellagra as the Messina asylum, in natives of Sicily, where maize is not cultivated, and, what is more to the point, they had been inmates of the institution for a long time and had certainly eaten no maize for several years prior to the appearance of their erythema.

In Jamaica, it is reported that pellagra had developed in insane patients who had been shut off absolutely from a corn ration for the period of a year. Can these instances be satisfactorily accounted for by the Lombrosians?

Again, is there adequate explanation for over 20,000 cases of pellagra among five million Roumanian peasants in 1898, as reported by Babes and Sion, and for the few hundreds at present among our own millions? Certainly, in Roumania the status of corn culture and preparation has not changed in a great many years as is held up against our country, or, if change has taken place in Roumania, it has been for the better in the light of the zeists' propaganda. The zeist explains this by predisposition in the individual, yet it seems hardly probable that neighboring peoples would show such marked variations in susceptibility. Of course, we still have that indefinite and uncertain factor, hereditary pellagra—atavistic pellagra, as Lombroso would have it—found developing in grandchildren of recognized pellagrins, but here it seems to me we are again facing our unknown ætiological factor. Is this, indeed, transmitted susceptibility to the poison of spoiled corn? Why should certain individuals of the same inheritances, the same household and living under identical food conditions, be attacked and the others remain free of symptoms? And, again, why should persons of the rural districts, and rarely those in towns, be attacked, though both use maize as a staple article of diet? The zeists explain this last contention by stating that the best corn is sent to the city and the poorer quality eaten by the country peasants; but this seems not to explain the phenomena entirely to our satisfaction, for surely much corn must spoil in storing. Again we face an unknown element.

In considering the glaring incongruities of the maize theory of pellagra, the striking and distinct periodical appearance of the skin symptoms in this disease, a phenomenon incompatible with a toxine poison of the maize type, and its striking similarity to certain diseases of a protozoan origin, Sambon

has mentioned as possible a similar ætiology for it (5). This suggestiveness runs throughout the entire symptomatology, pathology, and treatment of both syphilis and sleeping sickness, or trypanosomiasis, both protozoan diseases, and the Wassermann reaction justifying us in considering general paresis and tabes dorsalis as syphilitic manifestations, we include these under this head:

Type: They are all essentially slow progressive toxæmias, the duration of pellagra being from a few weeks to twenty or more years; that of sleeping sickness from three months to three years; and syphilis from a few months in the malignant type to an indefinite period.

Remissions: In each we may have definite and distinct remissions, lasting from a few weeks to months or years in syphilis; from one spring to the next in pellagra; and in sleeping sickness before the final stage, we have short but distinct exacerbations and remissions.

Symptomatic similarity: In all we have the prodromes of general malaise, headache, languor, and mild digestive disturbances, which clinical symptoms are exhibited by all diseases of a microbic nature, and are readily explained by the theory of intoxications by ptomaines engendered by the organisms which, as they become more generalized, will produce more pronounced symptoms. A rise in temperature is constant in sleeping sickness, usual in syphilis, and occasional in pellagra.

Skin: A salient feature of each is a striking skin eruption, characteristic and practically constant, due in all probability to a localized deposit of virus, with resulting changes in the texture and appearance of the involved areas. In pellagra and syphilis, this lesion is symmetrical, while in sleeping sickness there is no definite arrangement. In pellagra it appears on exposed surfaces; in sleeping sickness and syphilis it may be general over the body and limbs; in pellagra it appears first as an erythema, later taking on a pigmented, scaly character, as usually seen, and is often pruritic. In sleeping sickness a peculiar itchy eruption is an early manifestation, and appears as an ill defined erythema in patches distinctly ringed, in some cases seven to eight inches in diameter. Again, it may appear as rubelloid spots of congestion, shading off gradually into normal skin, and finally it may present as measly patches with the skin appearing slightly thickened and swollen. The skin manifestations of syphilis are, of course, legion, and the appearances of both sleeping sickness and pellagra may be simulated exactly.

General symptoms: In the three there is common to each that gradual tendency to weakness, emphasized especially in the lower limbs in pellagra and general paresis, accompanied by progressive anæmia and emaciation.

Nervous symptoms: We come now to possibly the most remarkable of all the similarities; namely, that of the nervous symptoms in pellagra and general paresis. In that type of pellagra where the spinal and mental symptoms stand forth prominently we have the picture of general paresis so closely simulated in every respect that it is extremely difficult to differentiate the two with the nervous symptoms alone considered. The one point of difference that has been called attention to is

the absence of motor speech derangements in pellagra, which is a constant symptom of general paresis. Tuzcek, indeed, asserts that the conditions undoubtedly do coalesce, beginning with pellagroid symptoms and finally becoming true general paresis. As a rule, the nervous symptoms in pellagra are not progressive, while in general paresis they are essentially so. In sleeping sickness we have the same headache and mental hebétude, the patient appearing apathetic, with cerebration retarded; muscular spasm, epileptic seizures, and tremors often appear, paretic symptoms in general gradually supervening. The deeper reflexes are primarily exaggerated, followed by a total loss; later, contractions of the flexors of the arms and legs appear, and rigidity of certain groups of muscles is usual. The mental state, according to Jackson, is not usually that of general paresis, mania and the delirium of exaltation rarely being observed, while on the contrary despondence and a consciousness of wretchedness is the rule. In other respects it resembles general paresis.

Pathology: Here we have further verification of the relationship between syphilis and pellagra in the spinal cord changes. Lombroso states that in the most typical cases they suggest that in incipient tabes, with this difference, while in pellagra few changes are found below the dorsal region, in tabes the lumbar region is chiefly affected, though the cervical may be most involved. Both show degenerative changes in definite portions of the spinal cord, tabes attacking the posterior columns especially and pellagra the lateral or both posterior and lateral. Both diseases show a combination sclerosis. Marie considers that this sclerosis of pellagra resembles more closely that of general paresis than tabes—both you will observe being syphilitic lesions. (Edema of the central nervous system and a chronic leptomeningitis is common to general paresis and pellagra while in sleeping sickness we have a universal meningoencephalitis in the form of a small round cell infiltration.

Treatment: Professor Neisser, of Breslau, has reported his experiments with syphilis on apes in Java, where he demonstrated the extraordinary influence of an arsenical preparation, atoxyl, on affected animals. It acts as a true specific and prevents the development of the spirochæta, so that when given early the disease is stopped completely, and the animal can later be reinfected. From this drug alone has benefit been received in the case of sleeping sickness. While this particular form of arsenic has proved a disappointment with us in pellagra, yet Fowler's solution of arsenic seems to hold out the greatest amount of relief in cases taken in the early stages. On the other hand, Lombroso himself has spoken of splendid results from atoxyl, while Babes and others report brilliant results from a combination of it with arsenic trioxide (6). Thus we see arsenic alone giving relief in two of the three diseases and acting as a specific in the third. In this connection, while pointing out the similarities between pellagra and other protozoan diseases, there is food for thought in the striking influences of light on the skin lesions of pellagra and smallpox—an other protozoan disease—as also is the fact that there has been noted in the past, and Lavinder finds it in the cases examined here, a constant relative in-

crease in the mononuclear cells of the blood, a phenomenon likewise characteristic of syphilis, sleeping sickness, and smallpox.

Finally, regarding the pathogenic protozoa in man, we have but little more than lifted the edge of the veil, but even that opens to us a boundless horizon. With the exception of the malarial organism, the complete life history of not one protozoan causing disease in man is known. Of the others, we know only disconnected portions of life cycles that may, and probably have, many varying forms. We do know, however, that the majority of identified forms are restricted to a particular organ or tissue, as the malarial parasite and the trypanosome and others to the blood, the organisms of scarlet fever and smallpox to the skin, some to epithelial cells, some to cell nuclei, and others to muscle cells. Because we find nothing suggestive of protozoan life in the blood and other organs, so far examined, of pellagrins, it does not argue that we shall not eventually find, with fuller knowledge of this form of life, the real organism tucked away in some obscure recess of the body. However, it is an interesting fact that in some forms of protozoa there are formed under certain conditions protective cysts within which the living cells lie quiescent for varying periods, until environmental conditions are favorable to liberation and renewed activity. We note especially this quiescence in the malarial organisms, which may remain latent for many years in the body and finally by changes in the density of the surrounding medium or through some minute change in the composition of the host's blood, be stimulated to renewed activity. We are all familiar with the latent periods which are characteristic of syphilis. In the case of pellagra, there is irresistibly borne in upon us some as yet intangible relationship between corn, especially spoiled corn, and the development of the disease. Now, knowing what we do of the quiescent phases of certain protozoa and the stimuli necessary to their renewed activity, is it not possible, that, either one cycle of an organism causing pellagra, if there is such, finds its habitat in corn, or else may it not lie in the tissues somewhere, possibly the intestinal tract, and the ingestion of corn, producing the chemical stimulus necessary to its development, there results an invasion of the host with a development of the usual symptoms? It seems to me this would account for the recrudescences following the eating of corn products and also we might reasonably stretch the analogy to include those cases in which sporadic or pseudopellagra develop, accounting for these by the ingestion of some other product than corn, producing a like stimulus, but much more seldom eaten than corn.

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AMEBÆ IN THE STOOLS OF PELLAGRINS.

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Amoebiasis is endemic in Mecklenburg County, North Carolina, and I believe it is very widespread throughout the south. In Charlotte, our death rate from amoebiasis constantly exceeds that from typhoid fever. Hence in a series of cases of any disease we should expect to find amoebiasis as a complication in a certain percentage of it. That this is true of pellagra is shown by the following case (1):

CASE.—Mr. S. O., white, male, age sixty-nine, was reported in February, 1909, as a case of amoebiasis. Two weeks' rest in bed, with liquid diet, large doses of ipecac, and colonic irrigations, reduced the number of stools from twelve to six daily. During this time the occurrence of blood in the stools became rare and amoebæ entirely disappeared. But the patient still averaged six stools a day. Some three weeks later skin lesions, pathognomonic of pellagra, appeared and explained the disappointing results obtained by our previous treatment.

The high percentage (five out of seven examined by us) of pellagrins who show monads in their stools would indicate that these patients are unusually liable to intestinal parasitic infection.

The finding of amoebæ in the stools is variously interpreted by different observers. Probably pathogenic amoebæ at times inhabit the lumen of the bowel without attacking the mucous membrane; and there are probably species of amoebæ inhabiting the lumen of the bowel which are unable to attack the mucous membrane, although Musgrave and Clegg (3) deny this. Quincke and Roos (2) describe three species inhabiting the human intestine, two of which they consider pathogenic. Celli and Fiocca (2) describe five species, all presumably pathogenic. But Calkins (4) very clearly points out that a species of amoeba can be identified only by following out its entire life cycle. This, the average practitioner is not qualified to do. However, two species occurring in the human intestine have been thus carefully studied by Schaudinn (5) and named by him *Entamoeba coli* and *Entamoeba histolytica*.

In examining stools containing amoebæ we should expect to see all shapes and sizes of amoebæ from budding youth to encysted old age. Hence it is impossible, particularly in the case of small amoebæ, to assign them to any given species or to say whether or not they are pathogenic, without tedious experimental work. However, the writer wishes to record, merely as a matter of interest, the finding of small amoeboid organisms in the stools of four out of five cases of pellagra that have been carefully studied. These organisms measure 0.010 to 0.015 mm. in diameter, or a little larger than a red blood corpuscle. Their size necessitated a magnification of 600 diameters or more for satisfactory observation. There were no larger amoebæ present; no nucleus, vacuoles, or included particles could be made out. The cytoplasm was semitransparent, finely granular, and lighter than that of a red blood corpuscle. The pseudopodia consisted of ectosarc of clearer material than the cell cytoplasm. Whether or not these organisms belong to the

*Read at the National Pellagra Conference, Columbia, S. C., November 3 and 4, 1909.

amoeba family or are monads in the perfusion (6) stage or are amoeboid cells from some other source, I cannot say.

The danger of mistaking amœbiasis for pellagra and vice versa is considerable. For example, a few weeks ago I studied an epidemic (8) of amœbiasis in which all the patients showed sore mouths and most of them diarrhoea. When the first patient was seen a tentative diagnosis of pellagra was made. As soon as it became evident that the trouble was epidemic, the stools were examined and *Entamoeba histolitica* demonstrated. Conversely a few days ago a case was brought to me to confirm the diagnosis of pellagra. There was a slimy fissured tongue and rough thickened skin over the ankles, moderate diarrhoea, and neurasthenia. On closer examination the skin lesion was found to be nonpigmented and itched as distinguished from the burning or tingling of pellagra. This was considered a dry eczema. A differential blood count showed eosinophilia, eight per cent., which is almost invariably pathognomonic of parasites in this latitude. (Since this report was written the embryos of *Strongyloides intestinalis* have been found in this man's faeces.)

The symptoms of pellagra and amœbiasis are at times so much alike that it is often very difficult to tell with which disease we are dealing. I have before (1) called attention to the fact that in both of these conditions the appearance of the mouth and tongue is similar. In both there are all grades of diarrhoea; in amœbiasis depression and neurasthenia often entirely overshadow the symptoms of intestinal parasitism (7); in both there may be marked emaciation. As long as the aetiology of pellagra is unknown, the treatment must necessarily be largely symptomatic. Therefore we are not justified in diagnosing and treating as pellagra cases that show only sore mouth, diarrhoea, emaciation, and melancholia, until amœbiasis has first been excluded. This is readily accomplished by a differential blood count and an examination of the faeces.

SUMMARY.

First. Pellagra is often complicated by amœbiasis.

Second. Many varieties of amœbæ may be found in the faeces of pellagrins.

Third. Pellagra is liable to be mistaken for amœbiasis and vice versa.

Fourth. In diagnosing and treating pellagra in the absence of pathognomonic skin lesions or grave mental symptoms, it is first necessary to exclude amœbiasis.

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WHAT CAN WE DO TO PREVENT, ARREST, AND CURE GENERALIZED FIBROSIS?

(Thesis, 1909, Medico-Chirurgical College, Philadelphia.)

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While old age brings with it more or less generalized sclerosis, few reach this period of life without abnormal proliferation of connective tissue from the use and abuse of functions and more especially errors of diet.

Before considering this question from the standpoint of diet, prophylaxis, and treatment, a brief review of the aetiology and pathology of localized or generalized fibrosis is necessary for a proper understanding of the subject.

ÆTIOLOGY AND PATHOLOGY.

The underlying cause of so many chronic affections is so bound up in the resolution and prevention of fibroconnective tissue proliferation, that it is one of the most important problems in medicine. Nature's response to irritation, whether mechanical or by toxins, is the walling off of inflammatory areas by productive organization, and this takes place in proportion to the inflammatory reaction occasioned by the irritant. We have examples of this acute cicatrization in the formation of granulation tissue following traumatism; in the pleural, pericardial, and peritoneal adhesions caused by bacterial irritation; in connective tissue infiltration arising from the mechanical irritation by urates, oxalates, etc., within the bloodvessels, nerve sheaths, the synovial and other serous membranes, and in the effects produced by endogenous toxins due to secondary fermentations in the gastrointestinal tract or from the toxins of infectious diseases and the effects of the absorption of such metallic poisons as lead.

When newly formed fibroconnective tissue results from traumatism, there appears to be more of the fibrin element in the exudate thrown out locally, for there is no general increase in the coagulability of the blood unless the hæmorrhage is considerable. Serum and leucocytes are soon poured out on the exposed surface and form a film which rapidly coagulates. A microscopical examination of the granules which begin to form, shows a fine or coarse partially hyaline stroma, entangling the leucocytes and overlying a serous portion in which flocculi of swollen fibrin float.

When healthy granulation commences after traumatism, some resorption takes place by the phagocytes, but there is always more or less proliferation of young connective tissue cells which by contraction later obliterates the newly formed capillary loops and dense cicatricial tissue is the result. This acute process may be compared to the chronic sclerotic infiltration of generalized fibrosis.

We are, however, concerned in the slow chronic infiltration, and reference is made to the acute forms only on account of the analogy of the general pathology. When the infiltration is brought about slowly by toxins and mechanical irritants, the obstruction to function is often increased by a secondary calcification of localized areas as in atheroma

of the arteries, which again gives rise to necrotic processes from shutting off the blood supply. We can therefore understand how such manifestations interfere with life processes for the gradual thickening must, of necessity, affect the capillary circulation, the vasa vasorum, and in fact the lumen of all the bloodvessels, especially affecting the sympathetic nervous system with concomitant diminution in vasomotor activity. This demands constantly increasing myocardial hypertrophy to compensate in order that the body nutrition may be maintained.

There is a growing opinion that the comparative coagulability of the blood in various individuals has a direct bearing on the question of generalized fibrosis.

The limits of this paper will not allow of consideration of the direct and indirect influence of the parathyroids on the calcium salts and their intimate connection with the production of fibrin element and its ferment. New light, however, will shortly be thrown on the question by the numerous workers who are now engaged in the study of this very important and still obscure question, which may give us a working hypothesis, and which will explain among other things, why in such chronic diseases as tuberculosis, fibrosis is rarely a prominent feature.

Fibrosis is summed up by Professor Anders in his admirable work on *Practice* as "an overgrowth of the connective tissues." This applies very generally to arteriosclerosis and interstitial infiltrations in the glandular, nervous, and muscular tissues, more especially manifesting itself by changes in the heart, liver, kidneys, gastrointestinal tract, etc., from pathological degenerative sequences due to the impaired vascular nutrition as expressed by atrophy of neurons and peripheral nerve terminals, senile gangrene, myocardial degeneration, etc. In such cases we have to deal with portal plethora, intercellular infiltration of serum, oedema, pulmonary congestion, hæmorrhoids, valvular lesions, aneurysms, and finally failing compensation. The diffuse or circumscribed forms of fibrosis need not be differentiated here, for the whole train of symptoms are so intimately connected that the impairment of one set of tissues can only occur in variable intensity and rarely without reacting on the body as a whole.

Nervous strain, muscular hypertrophy from undue exercise, some intercurrent disease, and the toxæmias of such acute infectious diseases as endocarditis, typhoid, scarlatina, diphtheria, etc., are predisposing causes, so are such chronic affections as syphilis, gout, and irritants such as lead, the insidious and continual intestinal autointoxication, but, most of all, the constant absorption of such stimulants as alcohol, coffee, tea, and tobacco which bring about a sclerosed condition of the gastric mucosa, the hepatic cells, and the renal parenchyma.

Long continued constipation alone will account, not only for the irritating indicanuria resulting from intestinal fermentation of the retained food products, but will increase the difficulty of repair by mechanical pressure of hard fæces on the villi and muscularis, and increase the atony of the intestinal walls and neurasthenic symptoms from interference with sympathetic nerves.

When once the arteriosclerosis has become severe, the thickening of the lumen of the vessels lessens the blood supply and the vasomotor activity which must be compensated for by cardiac hypertrophy, increased arterial tension with portal and pulmonary congestion.

The insidious onset may be unnoticed by the patient for years until some acute and distressing symptoms oblige him to call for relief, by which time palliative measures alone can be instituted. From this picture we can see that before any remedial measures can be applied to overcome prominent subjective symptoms, we must first consider the conditions as a whole.

PROPHYLAXIS AND DIET.

Once a generalized fibrosis is established, complete restoration of health cannot be hoped for, but much may be done if the patient will be guided by his medical adviser in following out the precautions laid down on dietetic and prophylactic principles.

The irritating causes such as alcoholism, abuse of tobacco, coffee, and tea, excesses of the table, violent physical exercises, sexual indulgences, exposure to lead poisoning, and attention to the correction of faulty metabolism and gouty symptoms or any cause of gastrointestinal irritation and autointoxication are all important. A change of occupation, climate, and care to avoid exposure to wet or cold are also important in arresting the progress of the disease. Where the fibrosis of the kidneys is so far advanced that the endogenous toxins of metabolism are eliminated with difficulty and uræmic symptoms are impending, a reduction in the proteid diet is indicated. The neurotic element of the disease must be considered and undue excitement prevented; regular examination of the urine for casts, albumin, and deposits should be allowed in order to guide us in our treatment. Good hygienic surroundings, proper clothing, and strict attention to the skin which has to take on so much of the work that other organs are able to perform only in a perfunctory manner, have an important place in keeping the patient comfortable and preventing an abnormal increase in the existing obstructions to function, healthy metabolism, and elimination.

MEDICAL TREATMENT.

There is, I think, some hope that not only can generalized fibrosis be arrested if taken in time, but that newly formed connective tissue may be redissolved by modern methods on which future pathologists and therapeutists will improve. Before taking up this somewhat optimistic view, a review of the classical treatment is desirable.

The diet should be simple, easy of digestion, nonstimulating, and where the renal symptoms are marked, milk is recommended. In the early stages iodides are said to be useful, probably acting by dilating the vessels and stimulating the glandular system to carry off effete products of metabolism and diminishing the viscosity of the blood.

To relieve the acute symptoms of visceral plethora and increase the peripheral circulation by vasodilatation, thus relieving the cardiac muscles, the nitrites have undoubted value and in persistent arterial hypertension, aconite may be of service, but

should not be used if the myocardium is much impaired and dilatation has commenced. Rest is always desirable, counterirritation may be of service, and frequent use of calomel and saline purgatives relieve portal congestion. Cardiac weakness must be supported by the timely administration of digitalis, strophanthus, sparteine, convallaria, etc., especially where there is impending uræmia, and Basham's mixture or ammonium acetate can be given to promote diuresis and increase the filtering capacity of the renal parenchyma. Strontium lactate (P. J.) is useful sometimes and where nervous symptoms are prominent, the bromide may be added. The dyspnoea, cardiac and renal asthma, and pulmonary congestion will require appropriate treatment, always remembering the underlying causes which bring about these distressing symptoms.

Where the coronary arteries are affected, and angina pectoris is to be feared, the patient should never be without amyl nitrite. Finally, in those cases where syphilis is partially responsible for the fibrosis, specific treatment may improve the patient's condition and prolong life, but should be continued (especially the iodides in small doses), for a certain period every year.

The activity of the skin is especially important; Turkish or Russian hydropathic treatment; massage and friction should be a great part of any treatment.

En résumé, elimination should be our guide in the treatment whatever organ or organs are most affected; easily digested diet, and rest. All habits which tend to promote an increased irritation of the tissues and a continuation of the fibrotic processes must of course be discontinued. It is, however, in the mild commencing cases rather than in the terminal stages that hygienic, dietetic, and therapeutic measures offer hope to this class of patients.

Buttermilk has been recommended as a diet for such cases, and since the value of the lactic ferments, which bring about the curdling of milk, has been brought so prominently before the profession by European authorities, considerable experience has been gained.

None of the commercial lactic ferments can be called "pure cultures" of any one lactic bacillus or coccus contained in these ferments, but practically all produce a good buttermilk without hard curds.

While it can hardly be expected that they can have fibrolytic action on the already formed connective tissue, they certainly control the proliferation of the colon bacillus, reduce indicanuria, and diminish intestinal autointoxication.

In support of the prophylactic value of lactic ferments, the following interesting case may be quoted.

CASE.—Mr. C. C., American birth, forty-eight years old, unmarried, traveling salesman, of plethoric habit but with a magnificent inherited physical development. The patient, whom I had known more than twenty years, had been a high liver from adolescence. He had a negative family and personal history, apart from the ordinary diseases of childhood. At eighteen he contracted gonorrhoea, but since then, in spite of continual venereal excesses, late hours, and continuous alcoholism, his magnificent constitution enabled him to resist these inroads on his general health.

At forty-five he became somewhat obese; the general muscular development remained unimpaired, however, and he was still able to indulge in contests of strength (boxing), in which he had few equals. At forty-six he

began to have symptoms of vertigo, a bad taste in the mouth on rising, coated tongue, and a catarrhal condition of the gastrointestinal tract, with nausea and vomiting of mucus on rising. These symptoms, however, were relieved by a course of calomel (1/10th grain every quarter of an hour until 1 grain had been taken), followed by purgative mineral waters, attention to diet, rest, and a brief period of respite from alcoholic stimulants. It was his habit to drink whiskey on rising and to take from ten to fifteen cocktails, as well as other alcoholic stimulants daily, and to smoke incessantly. At forty-seven he complained of more severe symptoms of vomiting mucus in the morning, with abdominal pain, and occasional oedema at the ankles, but he continued his deplorable habits, and his condition gradually became worse. He had frequent spells of muscular pain and dizziness. The urine showed few casts and no albumin or sugar. The heart showed some hypertrophy but no valvular lesions, the arteries were sclerosed only in a moderate degree with increased arterial tension, but there were no symptoms of incompetency or of myocardial degeneration in spite of the increasing oedema of the ankles after a long day's work.

The cirrhotic condition of the liver, therefore, appeared to be the most prominent symptom, causing backward pressure on the hæmorrhoidal veins with bleeding piles and physiological diarrhoea. There was also some pulmonary congestion, dyspnoea, and cough in the morning. As he would not abandon his alcoholic debauches, treatment was only palliative and ineffective for permanent relief. I then persuaded him to eat tablets of pure cultures of the Bulgarian lactic ferments (*Streptococcus* and *Streptobacillus lebinis*), from six to eight tablets of thirty centigrammes daily after meals. Within a few days, all severe symptoms disappeared. The cough, dyspnoea, gastric symptoms, and vomiting of mucus, tinnitus aurium and the hæmorrhoids were no longer troublesome and he felt much better, and as he expressed it, "like a fighting cock." He kept up the use of the lactic ferments for a month and in spite of the fact that his alcoholic habits were persisted in, as long as he continued eating the lactic ferments, and for some days afterward, the severe symptoms of hepatic obstruction were diminished and did not interfere with his occupation. Being away from New York, he was without the ferments for a month and relapsed into his old condition, but on recommencing them he again recovered his health, and is now taking them regularly, feels comfortable, and is free from vertigo, nausea, or vomiting. In such an aggravating and advanced case of liver cirrhosis with probable kidney involvement, and in view of the fact that the alcoholic stimulation is continued, I consider this quite remarkable and worthy of note.

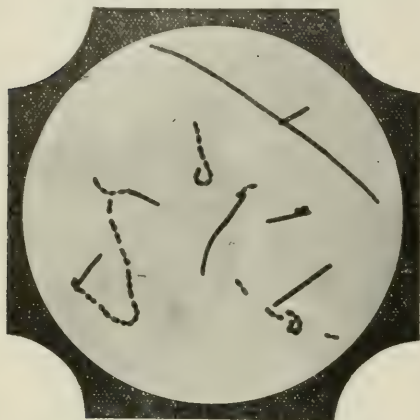
In an article which I published in the *Lancet* of the 24th of September, 1908, I endeavored to explain the use of lactic ferments. The profession appear to have ill understood the underlying principle of their action and it may be interesting to recapitulate some of my arguments.

Some hundred or more ferments have been found capable of producing lactic fermentation in the presence of saccharin and proteid matter. Lactic ferments, however, vary in their resistance to heat and lactic acid. The so called Bulgarian bacillus (*Streptococcus* and *Streptobacillus lebinis*), the long rod shaped forms shown in the plates which accompany this thesis, continue to proliferate until the acidity (lactic) reaches 1.2 to 1.35 per cent.

Cohendy and others have shown that when cholera and typhoid microorganisms are cultivated in conjunction with the Bulgarian bacilli, the latter only continued to proliferate after forty-eight hours, and that if the acidity was neutralized from time to time, they continued to grow as long as any saccharin elements remained in the culture medium. The experiment was confirmed in the laboratory of the Medico-Chirurgical College.

Lactic ferments, isolated from the Bulgarian sour milk, owe their superiority to the fact that they continue to proliferate at a temperature of $50^{\circ}\text{C}.$, and grow until the lactic acid produced reaches 1.30 to 1.50 per cent. At such temperatures, and in the presence of such an amount of lactic acid, other

pothesis. I think we may take it that when established as a part of the intestinal flora, they inhibit to a considerable extent the growth of the colon bacillus by increasing continuously the amount of acid (locally) and preventing secondary decomposition of unabsorbed proteids. The proteid molecule we know



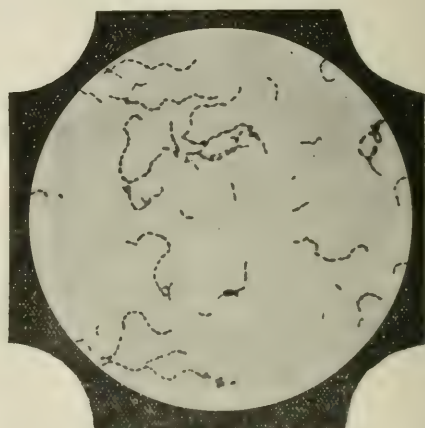
Streptobacillus lebanis or *Bacillus bulgaricus*.



Bacillus subtilis which renders casein partially soluble.



Mixture of *Streptococcus* and *Streptobacillus lebanis*.



Streptococcus lebanis.

TYPES OF THE COMMERCIAL LACTIC FERMENTS.

(By courtesy of the Paris Pasteur Institute.)

microorganisms cease to grow in any culture medium. (Paris report.)

The most active and resistant ferment is the *Streptococcus lebanis* which multiplies more quickly than the *Streptobacillus lebanis*. These two ferments are the most desirable cultures to use and the accidental presence of other microorganisms is of little importance, since as soon as the temperature reaches $50^{\circ}\text{C}.$ the undesirable bacteria cease to aid in acidifying the milk.

While the question of how ferments producing lactic acid within the intestinal tract give good results is still in the empirical stage, as a working hy-

pothesis. I think we may take it that when established as a part of the intestinal flora, they inhibit to a considerable extent the growth of the colon bacillus by increasing continuously the amount of acid (locally) and preventing secondary decomposition of unabsorbed proteids. The proteid molecule we know

contains a carbohydrate group, which can be separated in the laboratory from its association with the acids, phenols and sulpho groups and lactic ferments appear to have the faculty, when faecal retention occurs, of preventing to a great extent the formation of indican and other toxins which increase the work of the liver and the eliminating organs of the body.

It might be thought that the administration of lactic acid by the mouth or per rectum would have a similar inhibitory effect, but we must remember that lactic acid, like citric, tartaric, and other organic acids, is converted rapidly into water and car-

bonic acid and in order to be effective in controlling the colon bacillus and pathogenic organism inhabiting the intestine, its production must be *in situ* and continuous. Lactic ferments flourish best in aerobic conditions, but adapt themselves gradually to their new environment and persist for some time after their administration as a part of the intestinal flora, but in generalized fibrosis, their use should be continuous, although the amount ingested may be gradually reduced once they become established within the intestine. The prevention of indican formation seems to be an essential part of the treatment of all fibrotic changes, for as W. H. Porter, of the Post-graduate Medical School of New York, says in the April, 1908, number of the *Archives of Diagnosis*: "Indoxyl potassium sulphate or indican in the urine positively indicates that there is fermentation of the proteid constituents either in the intrinsic structures of the body or in their passage through the alimentary canal."

Lithamic states, resulting from long continued gastrointestinal intoxication, being a prolific cause of fibrosis, the correction of this condition is all important.

To combat this condition therefore and establish a comparatively aseptic state in the alimentary tube, the lactic ferments are certainly of great value, whether they are administered in the form of buttermilk or in their state of latent activity, as compressed tablets. Experience shows that few patients will take the trouble to observe the proper technique in making the so called Bulgarian sour milk, and the ordinary dairy buttermilk is not made with sufficient care, so that for all practical purposes, dry ferments are more convenient and equally good results follow their regular administration.

The importance of maintaining a relatively low alkalinity of the blood is just becoming appreciated, for it is evident that a long continued hyperalkalinity of the blood, in exaggerating the oxidations of the economy, brings about an accumulation of calcium oxalates and basic phosphates of magnesium and calcium, which, being insoluble, are deposited in the articulations, and especially around the nerves and nerve endings, producing, by their irritation and resultant inflammation, painful forms of neuritis, while, after an attack of rheumatism or any infectious disease affecting the heart valves or resulting in a general arteriosclerosis, there is always danger of accentuating these conditions by friction in the intima of the vessels carrying minute precipitates in the blood stream.

Diminished alkalinity increases the viscosity of the blood and diminishes the rapidity of the circulation as established by Professor Bouchard. Increased alkalinity increases the fluidity of blood, accelerates the circulation, and increases the quantity of oxygen taken in by the lungs.

The mechanical effects of irritants on the intima of the bloodvessels in lithamic patients requires consideration and in this connection the findings of Joulie, of Paris, are worthy of note.

Joulie's experiments on herbivora show that these animals always have alkaline urine and their articulations, after a certain age, become encumbered by concretions of calcium phosphate which can be removed by administering mineral acids.

The comparative analysis of the urine of some 12,000 patients suffering from various chronic affections, and Joulie's method of the estimation of the phosphatic acidity with calcium saccharate has attracted much attention since he showed that in the great majority of such cases the urine was super-alkaline.

The clinical studies of such authorities as Cantru, Morel-Lavallee, Alfred Martinet, Launois, and other French authorities based on Joulie's reasoning, have shown that there is much to be said in favor of the superiority of mineral acid medication over the alkaline, since excessive alkalinity of the urine is an indication of oxidation and diminished organic exchanges which modify nutrition and is especially noticeable in arthritic or herpetic cases.

In the urines examined by Joulie, it was shown that he very rarely found patients with mineral excessive alkalinity, and of 400 analyses of urine made by Bardet only fifteen were of diminished alkalinity. This French authority concludes that a great number of diseases due to faulty metabolism show excessive alkalinity. A series of analyses of the urine of patients in the Hôtel Dieu, Paris, suffering from chronic diseases such as tuberculosis, showed almost all to be alkaline. Cantru found that out of eighty neurasthenics (dyspeptic or otherwise) the urine of seven only was of defective alkalinity, while five were normal, sixty-five of increased alkalinity, and three alkaline.

The most common cause of excessive alkalinity is failure of the liver to convert the ammonium carbamide (the end product of proteids) into urea $\text{CO}(\text{NH}_2)_2$, and this may occur when the liver functions are impaired. The carbamide of ammonium, being carried along in the blood stream, soon determines a general excessive alkalinity, which is a condition favorable to the growth of the tubercle bacillus and pathological microorganisms which thrive in a distinctly alkaline medium, such as that found in individuals with an increased alkalinity of blood and urine. Charrin, Hugoncq and Levaditi found that animals treated by the mineral acids were not affected by inoculations of the pyocyanic bacillus, whereas those not so treated succumbed. This explains the comparative immunity of some arthritics to infectious diseases.

All inflammatory diseases with febrile reaction bring on increased alkalinity since it increases the oxidations. The alkaline dyspepsias, gouty cachexia, rhachitis, nephritis, gravels of phosphates and urates, varicose veins, hemorrhoids, some skin affections, e. g., eczemas, all show an excessive alkaline urine. We know that the relative alkalinity of the blood varies with the diet and is, moreover, modified continually by the physiological secretion of hydrochloric acid in the pyloric glands of the stomach. This is thought to be brought about by the so called "mass law"; carbonic acid, and sodium chloride of the blood reacting on each other through an enzyme contained in the cytoplasm of the epithelial cells, the organic acid (carbonic) displacing an inorganic acid (chlorine). This chemical phenomenon must, of necessity, render the blood more alkaline and constitutes the so called "alkaline tide" which occurs after a meal, the amount being variable with the amount of proteid food ingested.

It is quite possible that a somewhat similar process takes place in the glomeruli and uriniferous tubules of the kidneys, since, while the blood's alkalinity is due to sodium bicarbonate and phosphate (Na_2HPO_4), we find sodium acid phosphate (NaH_2PO_4) in normal urine because this salt passes by osmosis more easily through the parenchyma of the kidneys than disodium phosphate (Na_2HPO_4).

This again would increase the blood alkalinity and maintain it, even when the gastric secretions are suspended by fasting.

Muscular exercise also modifies the blood alkalinity by formation of sarcolactic acid.

We can conceive therefore that a disturbance of the alkaline equilibrium of the blood may easily lead to formation of calculi and calcifying infiltrations into the various tissues by precipitation of basic calcium and magnesium salts; also how pathological changes in the relative blood alkalinity may give rise to mechanical obstructions, producing painful inflammatory conditions and sclerosis.

Nicholaidi (*Leçon faite à l'hôpital Tenon, Paris, 1904*) asserts that by diminishing the excessive alkalinity of the blood, we prevent arteriosclerotic changes, the tonus of the myocardium is increased and the pulse becomes more ample.

With the mineral acids or the acid glycerophosphates (in glycerin solution) or preferably in the dry form of the triturates (the so called nascent glycerophosphates) we can combat excessive alkalinity, since the acidity of these salts, unlike that of the organic citric or tartaric acid salts, is permanent, and therefore, after absorption, able to neutralize excessive alkalinity of the blood.

Where there is a tendency to nephrolithiasis, the use of large doses of sodium bicarbonate or other alkali is bad practice for the reason chiefly that this favors the secondary deposit of phosphate concretions upon the stony urates, and in this way really leads to the formation of renal calculi.

In dyspeptic autointoxications and uric acidity, a nuclein enzyme acts on the nucleins, forming purin bases, which are again acted on by an oxydase, giving rise in turn to uric acid.

Urates are normally derived from proteid food, but under certain obscure conditions which appear to be dependent on the amount of sodium chloride and increased alkalinity of the blood, an excess is produced which cannot be accounted for by the proteid intake. This suggests that there is an autolysis of some of the body tissues from which the increased amount of uric acid is derived.

The normal quadriurate of sodium of the blood is soluble in 500 parts of serum, whereas when the blood becomes excessively alkaline from pathological changes, or, when we endeavor to relieve arthritic conditions by the administration of organic salts (citrates, tartrates, lactates, etc.), by sodium bicarbonate, lithium benzoate, or alkaline mineral waters, we do so at the risk of creating, in the circulation, the very insoluble biurate. The fallacy (with rare exceptions), of the alkaline treatment of dyspeptics, therefore, is apparent, for while temporary relief of arthritic cases may follow, there is liability of the sodium biurate being deposited in foci such as the articular cartilages, which sooner or later may give rise to inflammatory changes, causing painful symp-

toms of gout or even causing formation of interstitial fibroconnective tissue in the kidneys and other important organs.

The urates are retained in solution by the disodium phosphate (Na_2HPO_4) of the serum, so that there appears to be a constant relation of the various salts of blood, and from this we can understand the importance of maintaining their proportions.

Having considered the prophylactic and possible slight eliminating methods of relieving and arresting the irritating causes leading up to generalized fibrosis, we will now consider the possibilities of bringing about a direct fibrolysis. It has occurred to me that the following method might be serviceable, and while the clinical findings are not yet sufficiently positive to allow of definite statements, a number of carefully controlled investigations are being made which I hope may be utilized. We are all familiar with the local effects of allylsulphocarbamide (so called thiosinamine), which, when injected into keloids or dense cicatricial tissue gives rise to hyaline degeneration with final absorption and the relief of dense cicatricial bands.

This method has been utilized to some extent with favorable results in strictures of the urethra, in cicatrices from burns, and on keloids, with a fair amount of success, and while it is somewhat painful and requires great patience on the part of the medical attendant and the patient, there can be no doubt that it does produce a hyaline degeneration of connective tissue.

Microscopical examination of scar tissue injected with thiosinamine shows the fibrous tissue to be swollen and the nuclei become more distinct: it appears therefore to act endosmodically and somewhat after the manner of the passive hyperæmia advocated by Bier.

Sidney Gardnier, of Brooklyn (Brooklyn Medical Society, March 17, 1907), reports favorably on it in uterine fibromata, and George Herschell, of London, senior physician to the Kensington General Hospital, advocates its use for gastric adhesions in place of surgical treatment and reports favorably on three cases (*Folia Therapeutica*, July 1907). Kaufmann has found it useful in old gastric ulcers with tumorlike proliferations. Luth, of Thorn, used it successfully in sclerotic forms of gonorrhœal prostatitis (*Medizinische Klinik*, No. 10, 1907). Armstrong has used it in epithelioma; Suker in corneal opacities.

Regarding its local action, Hebra says that two hours after its injection in lupus the diseased part becomes red and swollen, the amount of reaction depending on the extent and intensity of the disease. The normal color returns in twenty-four hours. Teleky reports the histological examination of a piece of tissue from a patient suffering from rhinoscleroma, who had been using this drug. It showed numerous round cells and Mickulicz cells, with the epithelial cells in a state of hyaline degeneration. The connective tissue between the different granulations appeared loosened. The connective tissue nuclei were very indistinct, and their separate contour was lost. In other places the nuclei had been extruded, and the whole strand of connective tissue had a strikingly swollen aspect, the nuclei being distended and having a puffy appearance.

Lewandowski, who refers to this in his article, suggests that, being a derivative of the mustard group, with its active, irritating, hyperæmia causing action, it acts as a lymphagogue by some microchemical action.

Richter finds that after its administration there is a primary leucocytosis from 14,000 to 40,000 followed by a secondary leucocytosis. Lowitt thinks the leucocytosis is due to the leucolysis since it calls into the circulation new blood elements from the bloodmaking organs and so must necessarily stimulate the activity of these organs.

Renon has reported favorably on the use of thiosinamine in aortic affections. This was injected hypodermically. He says, however, that it was of no benefit in mitral affections, but there was considerable improvement in adherent pericarditis with mediastinal inflammation. This authority was less positive of its effects in arteriosclerosis, although he used it from three to five weeks.

Thiosinamine has been used internally by some investigators with the idea of producing this hyaline degeneration systemically.

McCullagh, assistant surgeon to the Manhattan Eye, Ear, and Throat Hospital, in the Medical News of December 30, 1905, says he has used thiosinamine in tinnitus aurium, internally. He asserts to have obtained good results and believes it has a direct, selective, and absorptive action on all tissues, especially on new connective tissues, but with no action on the general organism beyond a slightly atonic one.

My attention was drawn to this by an eminent professor of one of the medical colleges of Philadelphia, who conceived the idea that a nonirritating form of allylsulphocarbamide could be made which would be better tolerated internally than the drug itself, for there are many objections to the internal administration of allylsulphocarbamide, among others, it is not well tolerated by all patients and is rapidly decomposed in the presence of water and alkalis.

After a series of experiments, I was able to produce a neutral, nonirritating allylsulphocarbamide-bismuth-iodide having the formula $(\text{C}_2\text{H}_5)_3\text{N} \cdot \text{H}_2\text{CS}_2 \cdot \text{BiI}_3$, which is insoluble in water, and organic and mineral acids, which can be administered as a powder (ten per cent. strength) mixed with sugar of milk. This is a red, resinous material, soluble in alcohol, chloroform, ether, and acetone. It is best administered in the pure state as a triturate. It is not affected by the gastric contents, but in the presence of alkaline intestinal liquids, it is gradually resolved into its constituent compounds, namely, bismuth oxide, sodium iodide, and allylsulphocarbamide, and is perfectly tolerated by the intestinal canal. It has been used for some six months in a variety of cases such as interstitial nephritis, tabes dorsalis, scleroderma, arteriosclerosis, valvular excrescences, tinnitus aurium with high arterial tension, and in cirrhosis of the liver; and while the physicians who have used this drug all agree that it produces no untoward effects, they very naturally refrain from making positive assertions as to its value as a fibrolytic agent. Professor Randall, however, of Philadelphia, has reported fairly uniform, and in some

cases very good results in tinnitus aurium. Professor Potts tells me that an obstinate case of scleroderma has cleared up since administration, and a number of physicians have reported a reduction of arterial tension in arteriosclerosis and nephritis of the aged. In one old man with orthopnea, commencing uræmic symptoms, and an arterial tension of 220 (systolic), it was reduced to 135, and the patient, who was seventy-two years old, was able to get about and is now fairly comfortable, whereas he had heretofore been confined to his bed for several months.

I am not at liberty to quote my authorities at present, because these improved conditions may have been accidental and independent of the administration of allylsulphocarbamide-bismuth-iodide, but I trust that further evidence will enable me to publish a series of clinical reports.

CONCLUSION.

In conclusion, I believe that we are on the eve of a better understanding of the whole subject and that we may look for some developments connected with the influence of internal secretions of the parathyroids in connection with generalized fibrosis. Some light may also be thrown on the subject as connected with the injection of certain sera, for I have been much impressed, during my frequent travels in India, by the remarks of some of the physicians there with regard to the effects following the injection of prophylactic serum against the bubonic plague. Such patients appeared to possess a diminished resistance toward other infectious diseases which invariably ended fatally and especially those with an underlying gouty diathesis. In this connection, I recall particularly the case of a personal friend who was gouty and had a long history of alcoholism. He was subject to frequently recurring attacks of true gout and after two injections of the prophylactic plague serum, almost immediately developed pulmonary phthisis. Prior to the injection he had pipstem arteries and a much hypertrophied left ventricle, while after the injections, the arteries became soft and he has never had another attack of gout. Of course, this may have been due to failure of compensation and subsequent dilatation of the heart, but I mention this case because I have seen so many similar cases where the injection of this serum has led to patients being carried off by some infectious disease. Is not this change connected with a fibrolytic action of the injected sera?

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HOTEL BREVOORT.

A CASE OF MALIGNANT PRECOCIOUS SYPHILIS.

By H. B. EPSTEIN, M. D.,
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The subject of these pictures is C. H., æt. thirty-six, who, at the time of infection, was a prosperous and healthy proprietor of a café and restaurant.

His father died twenty-five years ago of pulmonary tuberculosis; occupation, stone cutter. Mother died at sixty-three of cerebral hæmorrhage. Patient had two living brothers, three died, one of laryngeal diphtheria, one of tu-

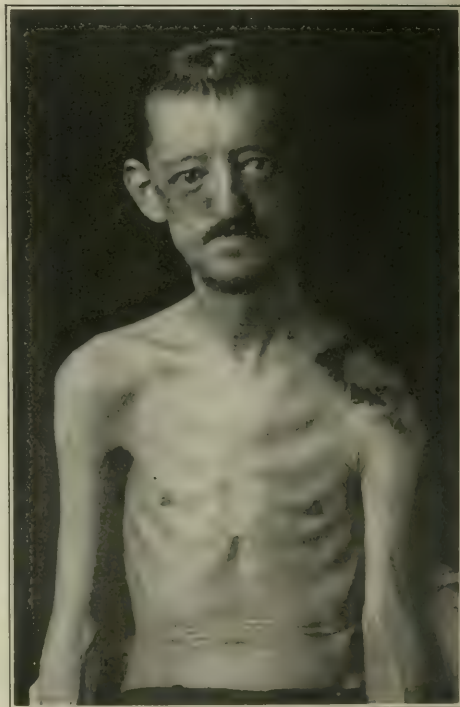


FIG. 2.—Gumma over right malar bone and one involving left shoulder and clavicle.

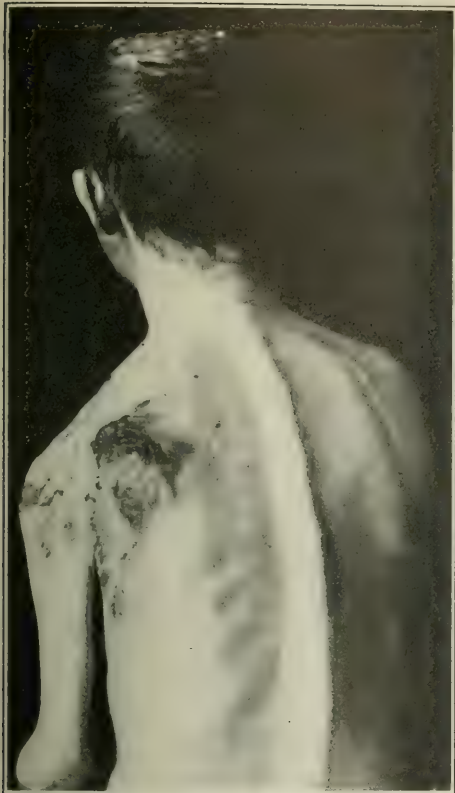


FIG. 3.—Showing gumma of left scapula.

berculosis (pulmonary), one of throat diphtheria, ages unknown. Had one living sister, thirty-eight years of age, operated upon for mammary carcinoma, one and a half years ago, now well.

Ten years ago he noticed the initial lesion and in the usual time, the secondary manifestations made themselves evident. Treatment with protoiodid of mercury acting slowly, he was advised to visit the Springs, Arkansas, where he underwent the inunction treatment plus the administration of iodides until the physiological effects became apparent.

Upon his return from this resort, he was troubled with cephalalgia, a progressive anaemia, and pains over his entire osseous system. Five years ago a sequestrum was removed from his nose, one year after the palatal process of the superior maxilla. Three years ago there developed an osteomyelitis of the lower third of the left humerus which necessitated its resection the wound healed per primam. Two years ago a gumma presented itself at the vertex of the skull which ulcerated down to the meninges, then an other anterior to the first. In the last year he had had a necrosis of the right malar bone, the left spine of the scapula, and one over the great trochanter of the left femur.

In spite of inunctions, vaporization, hypodermoclysis, (intramuscular) internal administrations of hydrargyrum and iodides the conditions have progressed and tonic treatment has been exhibited throughout the course of his illness. He has had no business responsibilities and has sought benefit at our popular resorts and exhausted the therapeutic resources of ten medical men.

A CASE OF MODERN "POINT TYING."

By W. H. LUCKETT, B. S., M. D.,
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Nouer Paiguillette (point tying) was common in France as late as the end of the seventeenth century and consisted for the most part of some form of witchery or demonology and cabalistic signs.

In olden times, before the invention of buttons, the lower parts of a man's habiliments, or hose, called then, were fastened up by means of tags or points-*aiguilletes*. For instance Falstaff says—"Their points being cut, down fell their hose."

From this French word, *aiguillette*, was derived the term *nouer aiguillette*—(to tie up the points)—the same as button up the flap, to express the rendering, by enchantment, a husband incapable of performing the conjugal rite. The whole secret of this charm consisted in the charlatan, choosing as his victim, an individual whose youth, inexperience, or superstition fitted him a good subject to work upon. The imagination of the party being already predisposed for the trick, a look, a suggestive sign, a menace, either of the voice or hand, accompanied by some extraordinary gesture, was sufficient to produce the effect, and as the mere apprehension of the evil frequently occasions its occurrence, it followed that superstition having prepared the event, the latter in its turn, fortified the superstition.

Bodin, a writer upon this subject, alleges that there are no less than fifty different ways of performing it; of all, the most efficacious one is to take a small strip or thong of leather or silken or worsted thread, or cotton cord, and to make on it three knots successively, each knot when made being accompanied by the sign of the cross, the word *Ribald* being pronounced upon making the first knot;



FIG. 4.—Gumma of frontal and parietal bones involving cerebrum and meninges.

Nebal, the second; and *Vanarbi* upon making the third; all this must be done during the celebration of the marriage ceremony.

For the sake of change, one of the verses of the *Miserere Mei, Deus!* may be repeated backwards, the names of the bride and bridegroom being thrice spoken. The first knot must be drawn rather tight; the second still more so, and the third is tied very close.

Further details can be found in the works of the



Fig. 1. Lateral view of a young man, showing the position of the head and neck during the operation.

Inquisitor Sprenger, Crespet of Sans, Debris, Bodin, Wier, De Lancre, and other writers learned in demonology.

This form of witchery and enchantment was known to the ancients, according to Herodotus (1), Amasis was prevented enjoying his wife Ladice by a sorcery of this description, not until the queen had vowed a statue to Venus, was the king able to gratify his wishes. Plato (2) warns married folks against such sorceries. Vergil (3) speaks also of magic spells, and of ligatures. Ovid (4) admits

the power of such charms. John Davenport collected numerous reports of such cases and published them in a book on the Powers of Reproduction, privately printed in London in 1869. I am quoting him quite freely. The fables of Apuleius (5) are full of the enchantments of Pamphilus. Numantina (6), the first wife of Plautius Sylvanus, was accused of having rendered her husband impotent by means of sorcery. Paulus of Tyre (7) states that the law of the Twelve Tables contained an express prohibition against the employment of ligatures. Gregory of Tours (8) relates that Eulatus, having taken a young woman from a monastery and married her, his concubines, actuated by jealousy, put such a spell upon him, that he could by no means consummate his nuptials. Paulus Æmilius, in his life of king Clovis says that Theodoric sent back his wife Herméberge to her father, the king of Spain, as he had received her, a pure virgin, the force of witchcraft having incapacitated him from taking her maidenhead; which sorcery Aimoinus Monachus (9) asserts to have been effected by queen Brunchante.

Davenport says that practice of point tying was formerly so general that princes and princesses made it one of their most amusing pastimes. Louis Sforza having seen the princess Isabella, daughter of Alphonso, king of Arragon, and who was betrothed to Galeas, duke of Milan, was so enamored of her beauty that he point tied Galeas for several months. Marie de Padille, concubine of Don Pedro, king of Castille and Leon, point tied him so effectually that he could not give the least marks of his fondness to his consort, queen Blanche.

That the church acknowledged the power of these point tiers is proved by the fact of their having been publicly anathematized by the provincial councils of Milan and Tours, the synods of Mont Cassin and Ferriere, and by the clergy of France assembled in Méulun in 1579.

A great many rituals specify the means to be employed as counter charms to the sorceries of the point tiers: and the Cardinal Du Perron, nominated to the bishopric of Evreux by Henry IV. of France, a very able and experienced prelate, inserted in the ritual of Evreux very sage directions for this purpose.

Similar precautions are to be found in the synodal statutes of Lyons, Tours, Sens, Narbonne, Bourges, Troyes, Orléans and many of the celebrated churches.

St. Augustin, St. Thomas, and Peter Lombard positively recognize the power of point tying and of "disturbing, in this manner, married persons in the enjoyment of their dearest privilege."

James I. (10), who prided himself so much upon his skill in demonology, declares positively that sorcerers and witches possess the power of point tying, "or else staying married folks, to have naturally adoe with each other, by knitting knotles upon a point at the time of their marriage." The old parliaments of France have generally admitted the power of these sorcerers. In 1582, the parliament of Paris condemned one Abel de la Rue to be hung and afterward burnt for having wickedly and wilfully point tied Jean Moreau de Contommiers.

The most singular instance of the kind upon record is that of "R. F. Vidal de la Porte, who was

condemned by the judges of Siom to make the amende honorable, and afterward to be hung and his body burnt until reduced to ashes for having by sorceries and wicked and sacrilegious words, point tied not only the young men of his town, but also the dogs, cats, and other domestic animals, so that propagation of these species so useful to man was upon the point of being wholly stopped."

In 1718 the parliament of Bordeaux ordered a famous point tier to be burnt. This pretended sorcerer had been accused and convicted of having point tied a nobleman of high family, his wife, and all the men and women servants in his establishment.

Of course there were numerous counter charms, amulets, cabalistic coins, etc., to prevent the sorcerers from point tying one. The Curate of Thiers, who has written largely upon this subject, enumerates no less than twenty-two different preventives, all of more or less potency.

The two cases that are reported below are modern ones and being modern are more realistic.

CASE I.—A negro in the backwoods of one of our southern States, where darky voodooism is rampant, hired a voodoo or hoodoo doctor to conjure his enemy, another



FIG. 1.—Illustrating conjuring.

darky who had stolen his paramour. The conjury took the form of an unusually brutal procedure, inasmuch as the voodoo doctor got his patient beastly intoxicated and tied a horse hair from the tail of a horse, around his penis just back of the corona glandis, with the result that before the cause was discovered the glands had become gangrenous. This case is reported to me by a personal acquaintance who was personally acquainted with all the parties concerned and vouches for its truthfulness.

CASE II.—Male child, two years old, was presented to me with the following history: Eight days ago the mother noticed that the infant for the first time began pulling and tugging at its penis. There was some swelling of the glands and remains of prepuce. She consulted her family doctor who prescribed some soothing lotion. The swelling continued and the child became more and more restless and sleepless, peevish and crying out frequently. This continued up to the time that I saw the child, when upon examination, I found the conditions as presented in the photograph. Glans penis swollen, shiny, skin behind glans greatly swollen and oedematous. About one fourth of an inch behind the corona glandis was a circular depression or crease which when pulled apart and examined revealed at its depth, nearly the thickness of the skin through which it had cut, a strand of human hair about nine inches long, making six complete turns around the penis and knotted.

This groove was distinctly visible in the figure. The strands were cut and a simple dressing of liquor Burrowi applied. The swelling, inflammation, and pain disappeared in a few days, and recovery was complete.

A further investigation revealed the following, which is given to the case. This child and another, a child of parents living one flight up in the same apartment had a quarrel and the mother of my patient settled the same by slapping and sending up stairs to its mother, crying, the other child. A few days later, she carried her own child to the doctor. The strand of hairs were wrapped around the penis and tied in such a manner that none but an adult could have accomplished.

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112 WEST ONE HUNDRED AND NINETEENTH STREET.

THE OPEN METHOD OF TREATMENT IN SIMPLE FRACTURES.*

BY MILES F. PORTER, A. M., M. D.,
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The open method of treating simple fractures is not popular and is especially unpopular in this country. Among the chief advocates of the method I would name Fritz König, Lane, Tuffer, Martin, and Pfeil-Schneider. So far as my knowledge goes this country has no champion of the method. In looking over the indexes of three recent American works on the treatment of fractures from my shelves, reference to the "open method" was not found.

Since Lane, of London, has personally advocated the method in this country it will, no doubt, be more often employed here. That the method has for its advocates surgeons of wide experience, sound judgment, and great skill, is proof positive that there are reasons for its existence. Broadly speaking the open method was born of the bad results achieved by the old methods. According to Lane, by the old methods, "anything approaching accurate apposition of displaced fragments in a fracture is obtained only in very rare cases" and the treatment of fractures by those methods is a disgrace to surgical practice.

Perhaps these statements of Lane are a little too sweeping, but very few surgeons of experience will doubt that they come all too near the exact truth for the credit of this branch of surgery. It by no means follows, however, that because the results obtained by the usual methods are bad, that the fault lies in the methods themselves. We must reckon with men as well as methods if we arrive at a just judgment in this matter. According to Lane the operative measures offer the following advan-

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Surgeons, Gynecologists, and Obstetricians, April, 1909.

tages to the patient:—1. "They at once relieve the patient from the pain of any movement of the fragments upon one another. 2. They free him from the tension and discomfort due to the extravasation of blood between and into the tissues. 3. They shorten the duration of the period during which he is incapacitated for work, since union is practically by first intention, and, consequently very rapid and perfect. 4. Lastly, and by far the most important, they leave his skeletal mechanics in the condition in which they were before he sustained the injury."

Let us discuss these alleged advantages seriatim:

1. The pain due to the movement of the fragments. My own experience, which has been considerable, and which is I think in accord with that of most American surgeons, is to the effect that pain due to this cause can be effectually overcome, except in rare cases, by proper fixation without resort to the open method.

2. The discomfort produced by the extravasation of blood. When extravasation of blood produces much discomfort or endangers the integrity of the limb, both of which events are rare, it may usually be relieved by puncture and bandaging.

3. That the open method shortens the period of incapacity. Provided infection does not occur, and a second operation is not necessary for the removal of the fixation device, this is probably true. I am not aware of any data from which a reliable conclusion could be reached on this point, but my knowledge of the matter does not permit me to attach great weight to the time element in favor of the open method.

4. That by the open method the skeletal mechanics may be perfectly restored. This is granted, but that this is by "far the most important" matter to the patient in so far as the term mechanics as employed by Mr. Lane is understood to mean form, is not supported by the facts. The point I wish to make is that a perfect restoration of function is the all important matter, and that this is possible without a perfect restoration of form, and that therefore the perfect restoration of form is a matter of secondary importance. What surgeon of experience can not recall case after case in which there coexists practically perfect function and considerable deformity.

What are the objections that may be urged against the open method of treating fractures? 1. The danger of infection. 2. The remote danger from a foreign body buried in the tissues. 3. The results which may be achieved by methods not involving an open wound render the open method unnecessary in all but exceptional cases.

1. That the danger of infection is a real one will be admitted by all who have had much experience in this class of surgery. The natural resisting power of the tissues involved in the work is not high, the trauma inflicted is relatively great, and in addition there is left in the wound a foreign body. To avoid infection in this work requires much greater aseptic precaution than is necessary in other work. Should infection occur the patient's life is endangered, and if he escapes with his life there is danger of nonunion from rarefying osteitis.

2. No time need be spent in marshalling proof of the statement that a foreign body left in the tis-

suess is a source of some danger, and this aside from the immediate danger. But two days prior to the present writing I removed some buried silkworm gut stitches from the perineum where they had been placed five years before. They had caused no trouble for over four years when without assignable additional cause sinusses formed which necessitated their removal. Two weeks prior to this experience I did a laparotomy on a young woman, which operation was necessitated by some buried silk sutures which had caused no trouble for some months after they had been placed. It is admitted by those who advocate the open method of treating fractures that the material or device used to secure the fixation of the fragments must be removed in some cases. What has been said concerning the remote dangers of foreign bodies buried in the tissues does not apply of course where catgut or other absorbable material is used to secure fixation.

3. We come now to a consideration of the third objection offered to the open method, viz.;—that the results which it is possible to achieve by what may be termed the closed method are so satisfactory as to render a resort to the "open method" unnecessary, save in exceptional cases. The successful treatment of fractures depends upon—a, a correct diagnosis; b, practically perfect reposition of the fragments; and, c, retention of the fragments in proper position. With the aid of an anæsthetic and the x rays a correct diagnosis can be made in all but very rare cases, and with these aids satisfactory reposition of the fragments can be obtained. Retention of the fragments in proper position after a correct diagnosis has been made and a perfect reduction or reposition has been achieved is, in the majority of cases, not difficult. In some cases however, for instance in oblique fractures of the femur in muscular subjects, it will be found impossible to maintain the fragments in satisfactory position by any of the usual methods. In our inability to retain the fragments in proper position there lies the chief necessity for resort to the open method, save in fractures of the patella and olecranon, in which cases the interposition of soft tissues is the common cause of unsatisfactory union. I would conclude this part of my paper by saying, that the development of aseptic surgery has made the open method of treating fractures feasible, but that the x ray, coupled with anæsthesia, has rendered a resort to this method unnecessary save in exceptional cases.

We are still left with the exceptional cases in which we must resort to the open method of treatment if we do our whole duty. What particular method or means shall we adopt in these cases? Time will not permit, nor would your patience allow, me to discuss the multitudinous materials and devices, together with the more multitudinous methods of using them, which have been advocated. Generally it may be said that we should seek to achieve our ends by inflicting the least possible trauma; that when these ends can be achieved without the use of nonabsorbable material none should be used; that when nonabsorbable material is a necessity its bulk and quantity should be reduced to the minimum consistent with security, and when feasible it should be so used as to permit of its removal

without additional trauma as soon as it has performed its mission; that nonabsorbable material is prone to produce remote trouble in proportion as it is located close to the surface or in a position likely to be subjected to trauma. In illustration of these points: A single long wire nail which may be introduced through a trifling wound in the soft parts will secure the fragments in an intertrochanteric fracture better than any other device I know of. In fractures of the olecranon and patella, catgut serves all necessary purposes, a nonabsorbable material is unnecessary. One or two slender screws or nails will often suffice quite as well as screws or nails and plates combined. In fractures of the tibia it is usually better to use long screws or nails which are left protruding, that they may be removed when no longer needed, and if additional support is required plates or wires may be used extracutaneously. If it seems necessary to leave permanently a bar of metal on a subcutaneous bone surface the bone should be mortised so that the bar will not project above the surface of the bone.

In conclusion permit me to say again what I have already said in other words, that the skilled surgeon can, with the aid of anaesthesia and the x ray, secure satisfactory results in the treatment of simple fractures without resorting to the open method save in exceptional cases. In the cases demanding the open method of treatment, the best results will be obtained not by the routine use of any one method but by the selection of that method best adapted to the particular case, and if needs be, the invention of a method suited to the case in hand.

207 WEST WAYNE STREET.

PALLIATIVE TREATMENT FOR EXTERNAL HÆMORRHOIDS.

BY GEORGE EDWARD BARNES, B. A., M. D.,
Herkimer, N. Y.

The usual medical treatment of external hæmorrhoids by various ointments is often beneficial but is not satisfactory. Although it is the vehicle for drugs that may have some slight desirable effect and although it mechanically separates the folds and protects them from the air, the grease makes the tissues unduly soft and vulnerable, increases the retention of moisture, and is altogether nasty.

The following detailed treatment keeps the tissues in as natural a condition as possible. After every defæcation the patient uses only the finest tissue paper and completes the cleaning with a piece of absorbent cotton or a wad of soft cotton cloth or a bunch of crumpled tissue paper thoroughly soaked with water. Soap also should occasionally be used. The tufts and the intervening grooves should be patted and wiped with this mop gently but quite thoroughly. Then a piece of soft cloth or crumpled tissue paper in two or three thicknesses should be repeatedly placed over the anus and pressed with a finger against every part of the surface until it is dried. Next, a dusting powder made up of talcum and about ten per cent. of boric acid is thickly dredged on the end of the finger covered with dry cloth or tissue paper and is then applied

to the hæmorrhoidal area. By this method the surfaces are cleaned and putrefaction avoided, softening of the tissue by retained moisture is prevented, itching is made impossible, and any slight abrasion is healed. After this treatment has been practised for a certain period the delicate mucous membrane becomes more and more like skin.

Many a tormented patient can be rendered happy by this treatment when the condition does not require an operation. The patient's general condition, especially the circulatory system, should also be investigated.

Correspondence.

LETTER FROM LONDON.

Professor Jonnesco's Demonstration of Spinal Anæsthesization.—Reciprocity with Canada.—The Medical Curriculum.—The Modes of Division of Spirochetes.—The Question of Carbon Monoxide in the Blood.—The Treatment of Trigeminal Neuralgia.

LONDON, November 30, 1909.

Professor Thomas Jonnesco, of Bucharest, recently gave a very interesting demonstration at the Seamen's Hospital, Greenwich, of his method of applying spinal analgesia to operative procedures on the head, neck, and upper abdomen. A large number of medical men were present to witness his methods. Three patients were anesthetized in this way. The first was a man, about thirty years of age, suffering from tuberculous glands in the neck. An intraspinal injection consisting of three centigrammes of stovaine and half a milligramme of strychnine sulphate was made between the second and third dorsal spines in the median line, the patient being in a sitting position with the head bent forward. At the end of two minutes he was placed gently on his back and the head and shoulders were lowered. Analgesia was completed in about one minute to the level of the forehead, and the operation was begun. The glands were removed without any pain whatever, but deep tactile sensibility was retained. Both costal and diaphragmatic respiration were carried on perfectly normally. The analgesia extended to the region of the umbilicus and lasted about an hour. He walked without difficulty from the operating theatre to the ward. With the exception of some headache, there were no subsequent phenomena. The second patient was a man, aged sixty-two, suffering from carcinoma of the stomach, rather feeble and wasted. The injection was made through the dorsolumbar interspace, and consisted of ten centigrammes of stovaine and a milligramme of strychnine. The patient was then placed on his back in the Trendelenburg position. Analgesia was complete in five minutes to the level of the zygoma above and to the middle of the thighs below. Respiration, both costal and diaphragmatic, was perfect. There was slight retching before the operation was begun. The skin incision was quite unfelt, as was the division of the epigastric aponeurosis, but as soon as an attempt was made to withdraw the omentum and stomach the patient groaned and said he felt "as if his insides were being pulled out." As the cardiac end of the stomach was found to be converted into a mass of growth, nothing could be

dose and the abdomen was closed. The analgesia lasted about an hour and a quarter, and the patient was none the worse. The third patient was a boy of fourteen with chronic suppuration in the mastoid antrum. The injection was made as in the first case, the dose being two centigrammes of stovaine and half a milligramme of strychnine. On the head and shoulders being lowered the analgesia rose almost immediately to the level of the eyes and extended to about the costal margin below. Respiration was perfect. Upon incising the periosteum some pain was complained of, and, as this persisted at each attempt, a second injection was given. This, however, failed to have the desired effect and the operation had to be completed under general anesthesia.

Although the third case was a failure, it was sufficiently proved that it was possible by the addition of a respiratory stimulant to the spinal analgetic to push the analgesia far above the level of the respiratory centres without interfering with respiration, and this is certainly a great advance on our present methods of spinal analgesia. Professor Jonnesco later on gave a demonstration before the Royal Society of Medicine and a very interesting discussion resulted. Sir Watson Cheyne, in thanking Professor Jonnesco for his demonstration, said he had undoubtedly given an impulse to the method of stovainization in this country.

A fresh complication has arisen with regard to reciprocity with Canada. It was hoped that the difficulty due to the fact that the several provinces of the Dominion had not been able to agree upon a common qualification had been met by dealing separately with each, and reciprocity has actually been concluded with Nova Scotia and Quebec, and a similar proposition has been received from the province of Prince Edward's Island. It appears, however, that the provincial legislature of Quebec has recently made an alteration in the law which may adversely affect some of the qualifications recognized for registration in this country.

At the ninetieth session of the General Medical Council Sir Henry Morris stated that the statistics showed that the average length of the medical course in the British Isles was seven years and one month, and only 13.8 per cent. qualified in the minimum of five years. This showed that the curriculum was overcharged and should be relieved of some of its subjects instead of being added to from year to year.

At a meeting of the Royal Society Dr. Fantham and Miss Annie Porter communicated a very interesting paper on the modes of division of spirochaetæ observed in the living organisms. The examinations previously made on stained material were not always reliable. Both longitudinal and transverse division occurred in spirochaetæ. At the onset of infection longitudinal division occurred. This was followed by transverse division of the spirochaetes when the infection was at its height. As the infection drew to an end, and there was a diminution in numbers of the parasites, there was a reappearance of longitudinal division. The actual processes of division and the movements of the parasites were described fully.

Dr. G. A. Buckmaster and Mr. J. A. Gardner

read a paper on the supposed presence of carbon monoxide in normal blood and in the blood of animals anesthetized with chloroform. The authors had carefully investigated the question, but found that in the case of cats neither normal blood nor the blood taken from animals anesthetized with chloroform contained any trace of carbon monoxide.

At a meeting of the Medical Society of London Mr. Jonathan Hutchinson, Jr., read a paper on the operative treatment of Epileptoid Trigeminal Neuralgia. He summarized his experience of thirty operations on the Gasserian ganglion for epileptoid neuralgia of the fifth nerve. The mortality of the operation was at first (1896) about twenty per cent. It was now about five per cent. As to deformity resulting from the operation, he pointed out that this entirely depended on the method adopted. If the modification of the operation which Mr. Hutchinson had described was practised, namely, leaving the ophthalmic trunk intact, all danger to the eye was avoided.

Out of the thirty cases, this modification was carried out successfully in twenty-six. In the four others in which the eye and forehead had been left anaesthetic some ocular complication had happened in all, but in only one had it proved serious. As regarded the objection raised to the operation that it was not a radical or permanent cure, the evidence was steadily accumulating that in nearly all cases no return was to be feared. There were no deaths in this series of thirty cases. Dr. Wilfred Harris read a paper on the treatment of trigeminal neuralgia by injections of alcohol into the nerves at their exit from the foramina. Out of twenty-four cases treated in this way, twenty were so far completely successful as regarded the entire disappearance of pain. Sir Victor Horsley said he had removed the Gasserian ganglion in 149 cases in patients of varying ages. The death rate was seven per cent., but that really applied to patients over fifty. Below that age he had had no deaths. As a general procedure, he would recommend first the injection of alcohol, and if this failed the operation could be performed.

Therapeutical Notes.

The Indications for Lavage of the Stomach.—Lavage is made use of, therapeutically, in slight cases of stenosis, in gastroptosis with motor insufficiency, and in chronic catarrh with excessive fermentation, with the object of introducing certain drugs into the stomach (*Münchener medizinische Wochenschrift*, through *The Practitioner*, for November, 1909). It is useless and even harmful to wash out the stomach too often. The presence in the stomach of masses of food only causes symptoms when the emptying of the stomach is not carried out in a normal time. Then are formed the fatty acids which act upon the mucous membrane, and the gas which distends the abdominal wall. In such conditions lavage can bring about great relief, but the symptoms can be much diminished by observing certain physical and mechanical laws, by giving alkalies, drugs which stop fermentation, and by electric treatment. Daily lavage is only allowed

in the severe form of dilatation of the stomach, and in cicatricial contractions of the pylorus or in its neighborhood when the patient does not wish to have an operation performed. In such cases the lavage should be done immediately after rising. In addition, in cases of abundant fermentation there will be prescribed salicylic preparations, menthol dissolved in chloroform, cocaine, or oil of sweet almonds. Iodized solutions of potassium iodide suit the stenotic forms of chronic gastritis and cases of total gastric achylia. Lavage should only be used when precise indications are present and should not be left for the patient's discretion, any more than massage or galvanism.

Treatment for Hæmorrhage in Typhoid Fever.

—A. Robin (*Journal de médecine de Paris*, October 16, 1909) prescribes the following mixtures to be given alternately in tablespoonful doses every half hour:

I.

R	Ergotine, Bonjean,	℥i;
	Gallie acid,	gr. viiss;
	Syrup of turpentine,	℥i;
	Decoction of bramble leaves,	℥iv.

M. Sig.: Dose, one tablespoonful.

II.

R	Calcium chloride,	℥i;
	Syrup of opium,	℥i;
	Distilled water,	℥iv.

M. Sig.: Dose, one tablespoonful.

Continuous Hæmoptysis.—*The Therapeutic Gazette* for October, 1909, cites Squire (*Clinical Journal*, June 16, 1909) on the treatment of hæmoptysis. In continuous hæmoptysis the following prescriptions have been found useful, according to the author:

R	Tincture of digitalis,	℥iv;
	Tincture of hamamelis,	℥xx;
	Ammoniated tincture of ergot,	℥xx;
	Calcium chloride,	gr. x;
	Peppermint water,	℥i.

M. Sig.: One ounce a day.

R	Solution of nitroglycerin,	℥i;
	Spirit of nitrous ether,	℥xx;
	Spirit of chloroform,	℥v;
	Water, q. s.,	ad. ℥i.

M. One ounce a day.

R	Calcium hypophosphite,	gr. x;
	Diluted phosphoric acid,	℥xx;
	Compound tincture of cinchona,	℥xxx;
	Water, q. s.,	ad. ℥i.

M. One ounce a day.

Purgative Medication in Amœbic Dysentery.

—In the course of a somewhat lengthy article on The Treatment of Amœbic Dysentery contributed to *Le Progrès médical* for October 30, 1909, Dopfer first reviews the use of purgatives. The saline purgatives usually employed are sodium sulphate, magnesium sulphate, and Rochelle salt. He advocates giving such purgatives in fractional doses. Thus in the case of sodium sulphate he would give on the first day of treatment five drachms of the salt in divided doses several times a day. On the second day the total daily dose is reduced to three and one half drachms, on the third two and one half drachms are given, and on the fourth, fifth, and sixth days, the daily amount is reduced to seventy-five grains. Each day fifteen drops of wine of opium may be given to overcome the abdominal pains and the peristalsis caused by the action of the salt. It is re-

marked that the total daily dose administered at one time has a less beneficial effect than the fractional doses. Calomel, it is noted, gives the best results, and is well tolerated. Adults readily support doses of from twelve to fifteen grains of calomel a day, but these doses may not be continued for any length of time on account of the gingivitis and stomatitis, with other signs of mercurial poisoning that may manifest themselves. These, of course, may be kept down by using a mouth wash of potassium chlorate. It is advisable, the author says, to use calomel in the form of Segond's pills, in which it is combined with ipecac, as shown in the following formula:

R	Pulverized ipecac,	gr. vi;
	Calomel,	gr. iii;
	Aqueous extract of opium,	gr. ¾;
	Syrup of buckthorn, q. s.	

M. ut fiant pilulæ No. vi.

Sig.: One pill every two hours.

Risni's Ointment for Coryza.—The following is cited by the *Journal de médecine de Paris* as the formula for Risni's ointment for use in coryza:

R	Eucalyptol,	℥. viii;
	Menthol,	gr. ii;
	Anæsthesine,	gr. viiss;
	Adrenalin solution (1 in 1,000),	gtt. v;
	Anhydrous wool fat,	℥ii;
	Boric acid ointment,	℥iv.

The first five ingredients should be incorporated skillfully with the wool fat, and the whole then be blended intimately with the boric acid ointment, which has been prepared with white petrolatum. The beneficial effect is said to be felt immediately.

Zedoary in Rheumatism.—In a communication to *The Prescriber* for December, 1909, Sir James Sawyer points out that formerly zedoary had a reputation as a remedy for rheumatism. He uses a compound tincture of zedoary made from a formula in Beasley's *Pocket Formulary*, eighth edition, 1866, which reads:

Tinctura Zedoariæ Composita. (Wedel's Essentia Carminativa.)

R	Zedoary,	℥iv;
	Calamus, galangal, of each,	℥ii;
	Chamomile, aniseed, of each,	℥i;
	Caraway seeds,	
	Bay berries, cloves, of each,	℥vi;
	Orange peel, mace, of each,	℥iv;
	Peppermint water,	℥xxiv;
	Alcohol,	

In six days strain, and add

Muriatic ether [spirit of chloroform],

Sir James suggests that others essay and assay the therapeutics of zedoary, so that some latter day opinion of its value may be matured.

[The zedoary used in this instance is the rhizome of an East Indian plant, *Curcuma zedoaria* Rose., and not the *Curcuma longa* L., of the French *Codex*, the latter being the well known curcuma, or turmeric, of commerce. A compound tincture of zedoary is occasionally prescribed and a formula for it is official in the National Formulary. This formula differs from the one cited by Sir James Sawyer, as it contains aloes, rhubarb, gentian, white agaric, and saffron. It also differs from the compound tincture formerly official in European pharmacopœias, but in minor particulars only. In therapeutics the tinctures have been chiefly used as carminatives and stomachics.]

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THE FUNCTIONS OF THE KIDNEY.

Despite the years of study devoted to the kidney, it is curious to note the uncertainty which still attaches to our knowledge regarding the nature of that organ's functions. A great deal of valuable work on the subject has been done by Professor Brodie, of the University of Toronto, and to him is due credit for pointing out many fallacies regarding accepted views. In his lecture before the Harvey Society recently Brodie suggested that the function of the kidney was to maintain the constitution of the blood at a normal standard. In doing this it eliminates some substances completely, *e. g.*, urea in man, and others down to a certain fixed point only, *e. g.*, chlorides. In some animals, like the shark, urea also falls in the second class. The structure of the kidney is peculiar, and at once suggests that the various parts have entirely different functions. According to Ludwig, the glomeruli are to be regarded as a filter, while the tubules are secretory organs. Heidenhain regards all the parts as secretory. The structure of the glomeruli certainly appears to be designed to favor filtration. However, in order to accomplish this most effectively it would seem that the walls of the glomeruli should be rigid. But from the researches of Nussbaum this appears not to be the case, for the glomeruli increase in size with an increase in the blood pressure.

The pressure in the glomeruli minus the pressure in Bowman's capsule has been regarded as the driving force which effects filtration in the glomeruli. The pressure in the capsule can be affected indirectly

by making the kidney secrete against resistance, *e. g.*, up a vertical tube. This causes the pressure in the capsule to rise and the kidney to secrete more and more slowly until finally the flow of urine ceases. Furthermore, if the blood pressure rises, *i. e.*, if the pressure within the glomeruli is increased, a greater flow of urine is produced. These results appear to accord with Ludwig's filtration theory. Furthermore, if the filtration theory were correct, we should expect to find the rate of filtration varying with the viscosity of the fluid. This apparently is the case in the kidney, for the production of hydræmia in an animal always brings about a flow of urine. We know that the fluid coming through the glomeruli is not the same in composition as the blood. The urine, for example, is normally free from protein. This indicates a peculiar physical property of the membrane, in that protein is held back while urea, salts, etc., are passed through. From the researches of Martin, we know that such membranes can be made artificially from gelatin. If Ludwig's theory is correct, we must assume that the glomeruli possess such a membrane, namely, one that will hold back large molecules and allow smaller ones to pass through.

On critically examining the evidence which appears to favor the filtration theory, it is found that it does not hold. Thus, so far as the volume changes of the kidney are concerned, it is found that the maximum volume generally precedes the maximum diuresis. In fact, the kidney may already have returned to its original volume several hours before diuresis ceases. In like manner, the researches of Gottlieb and Magnus have shown that there is no absolute correspondence between hydræmia and diuresis. These investigations show that ordinarily hydræmia disappears hours before diuresis ceases. If the filtration theory were correct we should expect filtration to cease when the pressure in the glomeruli reached about 35 mm. Hg. pressure, for then there would no longer be any driving force. But it has been found that secretion of urine may occur even with a blood pressure as low as 27 mm. The greatest objection to the filtration theory, however, lies in the magnitude of the process which it would involve and in the fact that, if we accept the filtration theory, we must assume the reabsorption of much of the filtered material. The evidence which has been advanced as indicating reabsorption is anatomical and experimental. Anatomically, it has been shown that there is a general correspondence between the character of the urine and the length of the kidney tubules in different animals. Animals excreting a concentrated urine have the loops of Henle long. Those secreting very little water have small glomeruli. Experimentally, it was shown by Cushny that obstruction of the flow of

urine from the kidney of one side caused a diminished flow on that side, and this, together with the character of the urine, led Cushny to believe that reabsorption had occurred. Other experimenters, however, obtained quite opposite results, so that under certain circumstances the obstructed side produced more urine and even a greater amount of salts than the opposite side. According to Brodie, the reason for Cushny's findings lies in the use of an anæsthetic, so far as the magnitude of the process which the filtration theory demands is concerned. Heidenhain showed that the kidney would ordinarily have to filter seventy litres of fluid daily, and, of these, sixty-eight would have to be reabsorbed. In no other way can the composition of the urine be obtained. In fact, if the potassium figures are analyzed, the absurdity of this view becomes still more evident.

But there is direct evidence also that the glomeruli cannot possibly be a filter. It is conceded that the watery part of the urine comes from the glomeruli. In diuresis, when a big flow of water comes through the glomeruli quickly, this would represent the filtrate of the glomeruli. But just in these instances we find that the urine is very low in salts, so that it cannot possibly be a filtrate. We must conclude, therefore, that the process in the glomeruli surface is secretory, but this, of course, is really equivalent to saying we are still ignorant of its real nature. If the kidney is a secreting organ, it is important that the fact be recognized, for then the organ is doing an enormous amount of work. That this is actually the case is borne out by studies on the gaseous metabolism of the kidney. In favor of the secretory character of the renal function also is the fact that substances belonging to the purin group, caffeine, etc., produce diuresis by direct stimulation of the glomeruli. We are, however, still uncertain as to the excretion of salt and sodium sulphate. The same is true of urea, though probably this is mainly excreted by the tubules. While, therefore, these newer investigations leave us still ignorant of the mechanism of the kidney's action, they actually represent a great step forward, for not only do they constitute a sure foundation on which to build, but, by exposing the defects in our knowledge, they also provoke renewed investigations of the subject along different lines.

LACERATIONS OF THE BIRTH CANAL.

It is a fact, rather astonishing in itself, that, despite the universal teaching in our medical schools and notwithstanding the number of able articles calling the attention of physicians to the importance of lacerations of the pelvic floor in women, these conditions should still form the large majority of the

troubles for which women seek the aid of the gynaecologist. In a recent study of some two thousand consecutive cases in a gynaecological dispensary, it was found that by far the greater number of complaints were due directly to the traumatism incident to childbirth. Contrary to the generally accepted textbook teaching, that the specific infections are responsible for four fifths of the diseases affecting the female genitalia, such infections were enormously outnumbered by the cases of neglected lacerations of the birth canal.

It has been urged that such conditions are rapidly diminishing, that the education of the physician as to the necessity for immediate repair of the perinæum and, in addition, the decreasing number of deliveries by midwives have tended to minimize the number of these cases. An analysis of the two thousand cases in question showed that most of the patients were young women, under thirty years of age, who had therefore been delivered since the development of modern teaching as regards the treatment of puerperal traumatisms. Again, but few of these patients had been delivered by midwives, the attendant being usually a fully qualified physician.

In view of the vigorous campaign of education started some twenty years ago upon this subject, it is of interest to find a cause for its lack of application. First, there is the much greater tendency to use the forceps. Instrumental deliveries to save time and worry are too frequently practised, often without allowing proper time for spontaneous birth to occur. The second great cause of neglected lacerations is the failure to examine the patient properly immediately after labor, with the result that such examination is delayed until primary repair is no longer possible, but an unsatisfactory intermediate or secondary operation must be resorted to. The effects of such injuries upon the patient are too well known for comment. The backache and headache, lassitude and nervous symptoms, not to mention the possible sequelæ of prolapse or malignant invasion of the scar tissue are of sufficient importance to warrant a movement to improve this condition of affairs.

The repair of the perinæum should of course be a routine practice, well within the skill and knowledge of every one who delivers a woman, but the question of immediate repair of the cervix is still open. Some operators have reported excellent results from this operation, but it is not practised by most physicians, as the procedure seems scarcely feasible in the hands of the general practitioner. To attempt apposition and healing by first intention of structures so oedematous and distorted as those of the parturient cervix seems of doubtful utility to say the least. In such cases, even when the pelvic floor has been well built up, the gaping, eroded cervical

opening may give rise to a serious train of symptoms and complications, the most serious being the tendency of carcinoma to develop in the tissues constantly irritated by old, unhealed lacerations. When all these immediate and remote consequences are taken into consideration, it is clear that lacerations of the birth canal are to be regarded as serious injuries, and that by their neglect the lives of many women are rendered of little value or may even be brought to a premature close.

THE CHEMISTRY OF DAILY LIFE.

An excellent course of popular lectures upon matters of interest to the people at large, hinging more or less completely on chemistry, has been prepared by Professor Charles Baskerville, director of the Department of Chemistry of the College of the City of New York, who will himself give the introductory lecture on February 4th. The lectures, thirty in number, will be given at frequent intervals, ending on the 27th of May. Fourteen lecturers, all men of eminence, will follow Professor Baskerville. Facilities for laboratory practice will be furnished to such senior students of the college as have complied with the requirements of the department and to such employees of the city as have studied chemistry sufficiently to turn such facilities to account. A limited number of citizens who may lack these qualifications will be admitted to the lectures, but not to the laboratory part of the course, on application to Professor Baskerville.

IODINE FOR DISINFECTING THE VAGINA.

The crudity and frequent insufficiency of the procedures ordinarily made use of for disinfecting the vagina prior to an operation involving that canal are rather elaborately set forth by a Paris hospital surgeon, M. Chevrier (*Gazette des hôpitaux*, November 23d; *Presse médicale*, November 27th). A strong point made by M. Chevrier is that of the harmful action of brushing by the excoriation which it is apt to produce, whereby artificial avenues are created for the access of pathogenic germs to the circulation.

Instead of employing these methods, he prefers to paint the entire surface of the vagina and the vaginal portion of the cervix uteri with tincture of iodine. A bivalve speculum is inserted for the purposes of smoothing out the wrinkles of the vagina and exposing the cervix, and all the parts brought into view are painted with the iodine. As the speculum is withdrawn, the drug is applied to those portions of the vaginal wall which had been covered by its blades. Care must be taken not to leave any

pools of the tincture in the vagina. All this is done while the patient is in a state of anæsthesia, and the celerity of the process adds materially to her safety. M. Chevrier reports that he has performed many major operations after employing this method of disinfection, and that the results have been good.

THE MUSCLE BUNDLE OF THOREL.

Recent discoveries concerning the morphology of the mammalian heart have thrown a great deal of light on the normal and pathological physiology of the circulation. The physiological studies of Gaskell, followed by the investigations of Stanley Kent and His, Keith and Flack, Tawara, and others have been the basis for a new conception of much that was formerly misunderstood. These studies have demonstrated the persistence of parts of the primitive cardiac tube which differ both morphologically and functionally from the rest of the cardiac muscle of extrauterine life, particularly in their ability to originate stimuli, in their irritability, and in their conductivity.

It is now generally accepted that under normal conditions the wave of muscular contraction starts in or near the sinoauricular node (Keith and Flack's node), and it is further recognized that the impulse is conducted from Tawara's node, near the coronary sinus in the right auricle, to the ventricles by way of the muscle bundle of His, all of these structures being remains of the primitive cardiac tube. In a recent note in the *Münchener medizinische Wochenschrift* (1909, No. 42) Thorel states that he has succeeded in isolating an analogous structure connecting the sinoauricular and the auriculoventricular nodes, thus completing the chain. This muscle bundle takes a devious route from the node of Keith and Flack around the anterior margin of the mouth of the inferior vena cava and thence over the coronary sinus to Tawara's node. Should Thorel's assertion be substantiated by further investigation his discovery will constitute an important contribution to our knowledge of the heart.

THE PHYSICIAN'S ALTER EGO.

We observe to-day an interesting reversal of the relation of men to "physic." At one time, as in the days of the Medici or of Francis Bacon, the acute intellect amused itself with problems of medicine. There were "practitioners," but the noble amateurs as often as not surpassed them in skill and certainly in originality. The employment of "simples" was every old woman's privilege. Questions of supreme moment, such as the phase of the moon in which mandragora should be cut, the hour of the night

proper to the maceration of herbs, and the effect of wind and tide upon decoctions, occupied the elegant.

To-day the rationalization of medical study has turned the tables. The physician is *obverse*; the *littérateur*, the musician, the academician, and the "elegant" are *reverse*. Medical men discuss the variations of major and minor chords, the technique of Tintoretto, or the art of Gorky, and return *quoad amorem primum* to science fixed and determinable. Does this indicate a genuine psychological era? Have we declared "Down art, up science" and "Away with sentiment, on with system"? Not so far. There is a finer, more sincere regard for life, and there is an exaltation of earnestness in its regulation. It is encouraging to know that the relations of spirit still concern medical men, and many of them are keenly alive to the higher need of art, music, poetry, and the drama, competing themselves in the worship of the Muses.

"THE COLUMNS OF GALL."

In the *Journal of the American Medical Association* for December 11th there is an editorial article, entitled *The Vindication of Gall*, which opens as follows: "Most physicians know the name of Gall because they have heard of the columns of Gall and Burdach; but few realize that the Dr. Gall who is thus commemorated is the father of so called phrenology—that is, the attempt to determine intellectual capacity and mental characteristics from the appearance of the skull—and also the pioneer discoverer of the physiology of the brain."

We fear that the writer has here fallen into the error of confounding Francis Joseph Gall, who died nearly a hundred years ago, with that Goll whose columns in the spinal cord some of us have heard of and think we know to be in close relation with the columns of Burdach. The mistake might easily arise in consequence of our common mispronunciation of Gall's name in this country—as if it were spelled Gaul. Such confusion is one of the occasional disadvantages of eponymic nomenclature, from which, however, it seems impracticable to rid ourselves altogether for many years to come, if we ever do accomplish it.

Obituary.

FERDINAND C. VALENTINE, M. D.,
of New York.

Dr. Valentine died on Monday, December 13th, at his home, on Long Island, of arteriosclerosis and cardiac dilatation, after an illness of several weeks. He was in the fifty-ninth year of his age. He was

a graduate of the Missouri Medical College, of the class of 1876. For many years he was a prominent practitioner in New York, giving special attention to genitourinary diseases. He had occupied several teaching positions and been active in various national and local societies and as a contributor to medical literature.

News Items.

The East Side Physicians' Association, of New York, will hold its annual meeting at Scheffel Hall, 194 Third Avenue, on the evening of Thursday, December 23d. Officers for 1920 will be elected.

The Clinical Society of the Elizabeth, N. J., General Hospital will hold its next meeting on Tuesday evening, December 21st. The paper of the evening will be read by Dr. F. R. Bailey on Epidemic Infantile Paralysis.

Rochester, N. Y., Academy of Medicine.—At a regular meeting of Section III of this academy, which includes obstetrics, gynecology, and pediatrics, a paper entitled *Toxines and the Liver* was read by Dr. William M. Brown.

The Fourth Harvey Society Lecture will be delivered at the New York Academy of Medicine on Saturday evening, December 18th, by Professor Carl G. Huber, of the University of Michigan. The subject will be *Renal Structure*.

The Skene Memorial Amphitheatre.—Announcement is made by the Board of Regents of the Long Island College Hospital that the south wing of the hospital containing the Skene Memorial Amphitheatre has been completed and will be open for inspection on Monday afternoon, December 20th, from three to seven o'clock.

A New Building for the Cleveland State Hospital.—The board of trustees of the Cleveland State Hospital has asked for an appropriation of \$150,000 with which to erect a new building which will have accommodations for about two hundred additional patients. The present buildings of the institution are much overcrowded.

The Triprofessional Medical Society of New York.—The thirtieth stated meeting of this society will be held at the Hotel Astor on Tuesday evening, December 21st. The paper of the evening will be read by Dr. S. J. Kopetzky on *Observations on Mastoid Surgery of Interest to General Practitioners*. Among those who will discuss the subject are Dr. E. Prince Fowler, Dr. R. Johnson Held, Dr. R. N. Disbrow, Dr. E. L. Bull, and Dr. Alfred Wiener.

The Society of Medical Jurisprudence, of New York, held its two hundred and twenty-fifth annual meeting on Monday evening, December 13th, at the New York Academy of Medicine. The paper of the evening was read by Dr. L. Duncan Bulkley on the *Medicolegal Aspects of the Case of John Early, the Suspected Leper, long Quarantined in Washington*. The annual dinner of this society will be held at the Hotel Savoy, New York, on the evening of January 22d.

A Tropical Medicine Department at the Postgraduate.—The New York Postgraduate Medical School is establishing in its new buildings a full equipment of wards and laboratories for the teaching of tropical medicine. The department will be conducted under the cooperation of the United States Army, Navy, and Public Health and Marine Hospital Services, who will detail officers from their respective medical corps to assist in the conduct of the laboratory and clinical courses.

The Seaboard Medical Association of Virginia and North Carolina.—At the fourteenth annual meeting of this organization, which was held in Norfolk, Va., on December 7th, 8th, and 9th, the following officers were elected: Dr. W. T. Parrott, of Kingston, N. C., president; Dr. Joseph Grice, of Portsmouth, Va., vice-president; Dr. B. F. Halsey, of Roper, N. C., second vice-president; Dr. J. E. Rawls, of Suffolk, Va., third vice-president; Dr. H. D. Walker, of Elizabeth City, N. C., fourth vice-president; Dr. Israel Brown, of Norfolk, Va., treasurer (re-elected); Dr. J. R. Parker, of Goldsboro, N. C., secretary; Dr. J. H. Ilden, of Pungoteague, Va., orator.

Hookworm Disease in New York is the subject chosen for discussion at a meeting of the Section in Medicine of the New York Academy of Medicine, to be held on Tuesday evening, December 21st. Dr. Francis Carter Wood will deal with the parasitology of the disease; Dr. H. S. Patterson will deal with the symptomatology, and Dr. Harlow Brooks will report a case of endemic hookworm disease, exhibiting a specimen.

American Guild of St. Luke.—This is the name of a society which was recently organized in New York. It is composed of physicians, and it will become affiliated with similar societies in other countries, especially those of France and England. The special field of work of these societies is the cultivation of the ethical, moral, and historical principles upon which the practice of medicine is founded and the collection of historical data relating to medicine. Dr. Charles A. Nammack was chosen as the first president of the new organization; Dr. Thomas Addis Emmet and Dr. José M. Ferrer as vice-presidents; and Dr. Thomas F. Reilly and Dr. James J. Walsh as secretaries. At the first meeting of the organization Dr. Walsh read a paper on St. Luke as a Physician.

Medical Society of the County of Ulster, N. Y.—At the annual meeting of this society, held in Kingston, on Tuesday, December 7th, the following officers were elected: President, Dr. Thomas O. Keator, of Accord; vice-president, Dr. Daniel Connelly, of Kingston; secretary, Dr. Mary Gage-Day, of Kingston; treasurer, Dr. Aden C. Gates, of Kingston; censors, Dr. Adelbert H. Mambert, of Kingston; Dr. Mark O'Meara, of Kingston; Dr. Elbert D. B. Loughran, of Kingston; Dr. Luther Emerick, of Saugerties; Dr. Frederick Snyder, of Rosendale; delegate to the Medical Society of the State of New York, Dr. Henry Van Hovenberg, of Kingston; alternate, Dr. Albert H. Palmer, of Marlborough; delegate to the Third District Branch, Dr. Frank Keator, of Kingston; alternate, Dr. L. K. Stelle, of Kingston; committee on legislation, Dr. E. E. Norwood, Dr. A. S. Vroman, Dr. John Robinson; committee on public health, Dr. George H. Van Gaasbeek, Dr. W. D. Hasbrouck, Dr. W. J. O'Leary. Dr. O. A. Druce and Dr. Joseph Davis, both of New Paltz, were elected to membership in the society.

Municipal Chemistry.—The Department of Chemistry of the College of the City of New York has arranged a course of thirty lectures on the chemistry of daily life, which will be open to senior students of the college who have complied with the requirements of the department; to employees of the city who have studied sufficient chemistry to pursue the laboratory work; and to a limited number of auditors who will be admitted to the lectures on applying to the director of the department, but will not be admitted to the laboratory part of the course. The lectures will be given in the Doremus Lecture Theatre, Chemistry Building, One Hundred and Fortieth Street and Convent Avenue, Plaza entrance. The introductory lecture of the course will be delivered on February 4th by Professor Charles Baskerville, director of the Department of Chemistry of the College of the City of New York. His subject will be Sanitation. For further information regarding the lectures address Professor Charles Baskerville, director of the department of chemistry of the College of the City of New York.

Ulster County, N. Y., to Have a Tuberculosis Hospital.—Ulster County is the latest to get in line under the Hamilton-Whitney bill and establish a hospital for the care of its consumptives. Similar action was taken recently by the counties of Monroe, Ontario and Schenectady. Like action is expected soon by the boards of supervisors in several other counties, now seriously considering the matter. Among those most likely to act soon are the counties of Onondaga, Broome, St. Lawrence, Chautauqua, and Saratoga. With this action just taken by the board of supervisors of Ulster County, if the plans of this board are carried out, Ulster will doubtless be the first county to have a hospital in actual operation under the provisions of the act passed at the last session of the legislature, authorizing boards of supervisors to establish hospitals for the care and treatment of tuberculosis, known as the Hamilton-Whitney law. The Ulster County plan is to take over the day and night camp for consumptives, established last summer by the local committee on tuberculosis of the State Charities Aid Association, converting it into a permanent hospital.

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday, December 20th, at 8:30 p. m. The programme will consist of a "symposium" on the throat symptoms of general diseases, with therapeutic suggestions. The subject will be introduced by Dr. Henry L. Swain, clinical professor of laryngology and otology in Yale University. Throat symptoms in syphilis and allied conditions will be discussed by Dr. Swain, Dr. Frank C. Raynor, and Dr. Hubert Arrowsmith; in tuberculosis by Dr. Wolff Freudenthal and Dr. Bryan de F. Sheedy; in the exanthemata, by Dr. Francis J. Quinlan and Dr. Charles Gilmore Kerley; and in typhoid fever by Dr. Lewis A. Coffin and Dr. Nathan B. Van Etten. A general discussion will follow, which will be participated in by Dr. Joseph E. Winters, Dr. Frank E. Miller, Dr. James Pedersen, and Dr. Le Grand Kerr.

Personal.—Dr. Harry Hudson, of 3228 North Fifteenth Street, Philadelphia, announces the opening of an additional office at 1633 Spruce Street.

Dr. William Campbell Posey, of Philadelphia, read a paper entitled Palsies of the Extraocular Muscles in Tables at a meeting of the Buffalo Ophthalmological Society on Saturday evening, December 11th.

Brigadier General George H. Torney, surgeon general of the United States Army, visited Philadelphia recently as the guest of Dr. Clarence P. Franklin. During his stay a dinner was given in his honor at the Union League Club by Dr. Franklin and Dr. Levi J. Hammond, followed by a reception at the Southern Club.

Dr. L. Emmett Holt, of New York, read a paper entitled Bacteriology of Acute Infections of the Respiratory Tract in Children at a meeting of the Section in Medicine of the Buffalo Academy of Medicine, held on Monday evening, December 13th.

Stated Meetings of the New York Academy of Medicine.—Pellagra was the subject discussed at a stated meeting of the New York Academy of Medicine, held on Thursday evening, December 16th. Papers on the subject were read by Dr. J. W. Babcock, superintendent of the South Carolina State Hospital for the Insane, and Dr. J. J. Watson, of Columbia, S. C. A stated meeting will be held on the evening of January 6th, under the auspices of the Section in Ophthalmology. Dr. George S. Derby, of Boston, will read a paper entitled The Best Methods for the Diagnosis and Treatment of Ocular Tuberculosis. Dr. Ervin Torok will read a paper on the Aetiology of Scleritis. On January 20th a stated meeting will be held under the auspices of the Section in Pediatrics. A paper entitled Experimental Poliomyelitis and its Bearing on Epidemic Poliomyelitis in Man will be presented by Dr. Simon Flexner and Dr. Paul A. Lewis. The discussion will be opened by Dr. L. Emmett Holt. Dr. Thomas Morgan Rotch, of Harvard University, will read a paper entitled The Conditions Pertaining to the Safeguarding of Early Life from a Pediatric Point of View, accompanying it with lantern slide illustrations.

Society Meetings for the Coming Week:

MONDAY, December 20th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, December 21st.—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Odgensburg, N. Y., Medical Association.

WEDNESDAY, December 22d.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, December 23d.—East Side Physicians' Association, of New York; New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Medical Society.

FRIDAY, December 24th.—Academy of Pathological Sciences, New York; New York Society of German Physicians; New York Clinical Society.

The Health of Pittsburgh.—During the week ending December 4, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 36 cases, 0 deaths; typhoid fever, 13 cases, 3 deaths; scarlet fever, 30 cases, 5 deaths; diphtheria, 23 cases, 2 deaths; measles, 63 cases, 1 death; whooping cough, 1 case, 0 deaths; pulmonary tuberculosis, 25 cases, 10 deaths. The total deaths for the week numbered 176, in an estimated population of 572,000, corresponding to an annual death rate of 16.00 in a thousand of population.

Vital Statistics of New Jersey.—During the month ending November 10, 1909, there were 2,993 deaths reported to the New Jersey State Board of Health. The average number of deaths for the preceding twelve months was 2,988. The principal causes of death were as follows: Typhoid fever, 36; measles, 12; scarlet fever, 13; whooping cough, 18; diphtheria, 63; malarial fever, 1; tuberculosis of lungs, 286; tuberculosis of other organs, 41; cancer, 149; cerebrospinal meningitis, 9; diseases of the nervous system, 367; diseases of the circulatory system, 326; diseases of the respiratory system, (pneumonia and tuberculosis excepted), 158; pneumonia, 196; infantile diarrhoea, 209; diseases of the digestive system (infantile diarrhoea excepted), 206; Bright's disease, 254; suicide, 34; all other diseases or causes of death, 615.

Scientific Society Meetings in Philadelphia for the Week Ending December 25, 1909:

MONDAY, December 20th.—Medical Jurisprudence Society; Medical Society of the Woman's Hospital; Ornithological Section, Academy of Natural Sciences.

TUESDAY, December 21st.—Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society.

WEDNESDAY, December 22d.—Philadelphia County Medical Society.

THURSDAY, December 23d.—Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute; Philadelphia Botanical Club; Lebanon Hospital Medical Society.

FRIDAY, December 24th.—Philadelphia Neurological Society; Northern Medical Association; South Branch, Philadelphia County Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 11, 1909:

	—December 2— Cases. Deaths.		—December 11— Cases. Deaths.	
Tuberculosis pulmonalis	576	173	564	177
Diphtheria	343	39	306	45
Measles	411	3	388	9
Scarlet fever	382	10	337	14
Smallpox .....	...	...	...	...
Varicella	178	...	111	...
Typhoid fever	82	14	59	11
Whooping cough	23	3	120	5
Cerebrospinal meningitis	5	8	1	4
Total	2,000	247	1,943	265

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending December 4, 1909, there were 1,370 deaths from all causes reported to the department, 157 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 15.66 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.29; the Bronx, 14.69; Brooklyn, 16.61; Queens, 12.78; and Richmond, 21.41. The total infant mortality was 367; 254 under one year of age, 52 between one and two years of age, and 61 between two and five years of age. Of the total number of deaths of children under five years of age, 33 were due to diarrheal diseases, and 87 to bronchopneumonia. The deaths from important causes were as follows: Contagious diseases, 63; pulmonary tuberculosis, 173; diarrheal diseases, over five years of age, 37; organic heart diseases, 141; Bright's disease, 105; cancer, 79; pneumonia, 104; bronchopneumonia, 107. There were 21 suicides, 58 deaths due to accidents, and 2 deaths from homicide, making a total of 81 deaths by violence. There were 137 stillbirths. One thousand two hundred and twenty-six marriages and 3,274 births were reported during the week.

The Health of Philadelphia.—During the week ending December 4, 1909, the following cases of and deaths from transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 29 cases, 2 deaths; scarlet fever, 59 cases, 2 deaths; chickenpox, 166 cases, 0 deaths; diphtheria, 114 cases, 14 deaths; measles, 20 cases, 0 deaths; whooping cough, 12 cases, 0 deaths; tuberculosis of the lungs, 65 cases, 62 deaths; pneumonia, 33 cases, 46 deaths; erysipelas, 11 cases, 0 deaths; mumps, 8 cases, 0 deaths; tetanus, 1 case, 1 death. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 6 deaths; diarrhoea and enteritis, under two years of age, 13 deaths; puerperal fever, 1 death. The total deaths numbered 424 in an estimated population of 1,565,509, corresponding to an annual death rate of 14.14 in a thousand of population. The total infant mortality was 66; 58 under one year of age, and 8 between one and two years of age. There were 39 stillbirths; 17 males and 22 females. There was only a trace of precipitation during the week.

The Health of Chicago.—During the week ending December 4, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 163 cases, 20 deaths; scarlet fever, 177 cases, 6 deaths; measles, 142 cases, 2 deaths; whooping cough, 43 cases, 4 deaths; typhoid fever, 30 cases, 9 deaths; pneumonia, 7 cases, 97 deaths; tuberculosis, 94 cases, 91 deaths; chickenpox, 55 cases, 0 deaths; erysipelas, 6 cases, 0 deaths; mumps, 43 cases, 0 deaths. The deaths from other important causes were: Cancer, 19 deaths; influenza, 2 deaths; nervous diseases, 23 deaths; heart diseases, 60 deaths; apoplexy, 15 deaths; Bright's disease, 32 deaths; diarrheal diseases, under two years of age, 23 deaths; diarrheal diseases, over two years of age, 4 deaths. There were 8 suicides, 34 deaths due to accidents, and 7 deaths from manslaughter, making a total of 49 deaths by violence. The infant mortality was 137; 89 under one year of age, and 48 between one and five years of age. The total number of deaths during the week was 570, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.36 in a thousand of population. The annual death rate for the corresponding period in 1908 was 12.52.

Assistant Surgeons in the Public Health and Marine Hospital Service.—A board of commissioned medical officers will be convened to meet at the Bureau of the Public Health and Marine Hospital Service, Washington, D. C., on Monday, January 24, 1910, at 10 a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the United States Public Health and Marine Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade. Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. Officers are entitled to furnished quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade. All grades above that of assistant surgeon receive longevity pay, ten per cent. in addition to the regular salary for every five years' service up to forty per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address Surgeon General, Public Health and Marine Hospital Service, Washington, D. C.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 2, 1909.

1. A Study of the First Series of One Hundred Cæsarean Sections Performed in the Boston Lying In Hospital,
 - (a) Introduction, By CHARLES M. GREEN.
 - (b) Indications, By FRANKLIN S. NEWELL.
 - (c) Types of Pelvic Deformity. Technique, By LEO V. FRIEDMAN.
 - (d) The Preparation of the Patient, By NATHANIEL R. MASON.
 - (e) The Convalescence, By JAMES R. TOBRERT.
 - (f) The Cæsarean Baby, By ROBERT L. DE NORMANDIE.
 - (g) The Repeated Sections, By CHARLES M. GREEN.
2. The Diagnosis of Ulcer of the Duodenum, By E. A. CODMAN.
3. Interstitial Pregnancy, By FREDERICK W. JOHNSON.

1. **Cæsarean Section.**—Green, in his introduction, remarks that the first Cæsarean section in the Boston Lying In Hospital was performed by the late Dr. George Haven, July 15, 1894; the one hundredth section by the present junior member of the staff, June 29, 1907. Altogether, ten former or present members of the staff have operated in this series of cases, the four former members performing fifteen, twelve, seven, and three sections respectively, and six of the present staff performing twenty-two, nineteen, fourteen, four, two, and two respectively. It is of interest to examine results in the several groups of twenty-five cases. In the first group, twenty-two sections were performed by two operators, eleven each, and three sections, one each by three operators, without previous experience with the operation; the two experienced operators, in twenty-two sections, lost one mother and two infants, while the three surgeons, each operating on his first case, lost one mother and one infant. In the second twenty-five cases seven operators were concerned, five of whom were gaining their early experience; the result was a loss of four mothers and two infants. In the third group there were four operators, of whom three had had a fair experience with the operation; in this group there was no maternal loss, and only one infant, with a congenital heart lesion, perished. The operations of the fourth group were performed by four surgeons, each with an experience of more than five cases, and by three surgeons, only one of whom had done the operation before; two mothers were lost by one of the more experienced surgeons, and two babies died of congenital heart disease and of inanition (on the seventeenth day) respectively. Altogether, in the one hundred cases, eight mothers and eight infants were lost.—Ten years ago, remarks Newell, Cæsarean section was considered an operation of doubtful expediency, only to be advocated in cases when the birth of a living child was at least improbable. The old statistics based on the operation, performed upon exhausted women under inadequate asepsis, were so uniformly bad that before the revised operation could win an established place in obstetrics it was necessary that a large

number of favorable cases be obtained in which the operation was absolutely indicated before its widespread application could be advocated. At first the question to be settled was, Can the patient be delivered in any other way? If that question was answered in the negative, Cæsarean section became the operation of choice, but no operator approached an abdominal delivery without great doubt as to what the outcome might be. With increased experience and improved asepsis the question has come to be, not, Is Cæsarean absolutely necessary? but, Is not Cæsarean safer than the other operative methods of delivery in doubtful cases? To-day this question can be answered so definitely in the affirmative that under proper conditions the patient can be subjected to operation at the time of election, not only with the feeling that all doubt as to the successful outcome both for her and the child have been removed, but also with the assurance that, far from either her life or after health being compromised by an abdominal delivery, an absolutely favorable prognosis can be given as in other simple abdominal operations, providing certain cardinal principles are followed out.—As to repeated sections, Green observes, that the only condition that can make a repeated section more difficult and dangerous than a primary section is the existence of adhesions, the separation of which may lengthen the time of operation, may result in subsequent oozing of blood, or possibly lead to more extensive adhesions, with a possibility of intestinal obstruction. Of the twenty-five repeated sections in only one or two women were no adhesions found; in most women there were adhesions varying from slight omental attachments or peritoneal bands to, in a few cases, dense adhesions of omentum and intestine. It is best not to evert the uterus as a rule, even in primary sections. Careful technique will protect the peritoneal cavity from invasion, the parietal incision is shorter without eventration, and adhesions, if present, need seldom be separated. There is also less shock in noneventration. In regard to the abdominal incision in repeated sections, practice has varied. In most cases incision has been made through, or near to, the earlier incision, and the old scar sometimes excised. In other cases the incision has been somewhat removed from former incisions. In one case three incisions were made through the primary scar and the uterus opened without entering the peritoneum. As far as can be learned, hernia has resulted in only one case, and that after a third section. In all cases the uterine incision has been longitudinal through the anterior wall. In a few instances the site of former uterine incision was visible. Occasionally small portions of silk or linen suture have been found in a repeated incision, and in one case the track of the earlier suture was resected. Generally, however, the site of former incisions has not been noticed. Of the twenty-five cases embraced in this series, twenty-three patients were discharged well and two have since delivered themselves of living children. There were two maternal deaths, both after a second section; one woman died of probable acute dilatation of the stomach after thirty-six hours, and one of pyæmia on the eighth day. There was no foetal mortality.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 11, 1909

1. Popular Education as a Stimulus in Public Health Work, By W. M. BRUMBY.
2. Medical Supervision of Athletics among Boys at Boarding School, By NATHANIEL BOWDITCH POTTER and JAMES TAYLOR HARRINGTON.
3. Uses and Limitations of Examinations of the Stomach Contents, By CHARLES G. STOCKTON.
4. X Ray Evidence in Gastric Cancer, By A. W. CRANE.
5. Determination of Trypsin in the Stomach Contents after Oil Test Meals, By CLIFFORD B. FARR.
6. Thoracic Surgery, By P. L. FRIEDRICH.
7. Experimental Intrathoracic Œsophageal Surgery, By HENRY H. JANEWAY and NATHAN W. GREEN.
8. Pneumectomy with Aid of Differential Pressure. An Experimental Study; the New Type of Apparatus Used, By WILLY MEYER.
9. Seventy-five Cases of Trifacial Neuralgia Treated by Deep Injections of Alcohol, By HUGH T. PATRICK.
10. Certain Hitherto Unpublished Data Concerning the Insane, By R. M. PHELPS.
11. Plague Eradicative Measures. Squirrel Campaign in Contra Costa County, California, By W. C. RUCKER.
12. Four Generations of American Gout, By ROBERT N. WILLSON.

3. Examination of Stomach Contents.—Stockton remarks that a conclusion should not be reached by a single examination. On one day there may be found the absence of gastric secretion and on the next an excess of it. On one day the food may be retained beyond the usual time and on another it may have passed onward too quickly. From this we conclude that the patient is the subject of nervous disturbance, perhaps excited by the very practice of lavage. When we find habitually an acidity above 60, depending on hydrochloric acid, free or combined, the presence of hyperchlorhydria is suggested. If we find a large quantity of the test meal present undergoing fermentation, having a "musty" odor, showing a large quantity of bacteria and sarcinae and full secretion of hydrochloric acid, with few lactic acid bacilli, it is indicative of benign obstruction at the pylorus. If we find stagnating food of foul odor, either with or without free hydrochloric acid, with lactic acid present, together with the Oppler-Boas bacilli and unchanged or occult blood, it suggests malignancy and obstruction. The presence of too little of the test meal at the usual time, with, however, the presence of gastric juice, suggests overmotor activity. When we find the stomach empty or find present too little of the test meal and no gastric juice, it indicates excessive motor activity, probably associated with achylia gastrica. The presence of occult blood, or blood cells having undergone change by digestion, is evidence that hæmorrhage has taken place in the stomach with active secretion such as occurs in ulcer. If the blood cells are found intact it speaks for recent hæmorrhage, or lack of digestive power, or both. The presence of blood with mucus and pus cells, apparently not coming from the respiratory passages, with fragments of tissue, suggests ulceration or degeneration of the gastric mucosa and probably malignancy. A slow return of the gastric contents through the tube, showing little pressure from below, is indicative of atony and probably of dilatation. Finding food remaining after washing for a considerable time is evidence of atony and probably dilatation. Finding that the stomach holds,

without inconvenience, a large quantity of fluid is indicative of dilatation; however, testing the capacity of the organ in this manner is a practice not recommended. On the other hand, if the stomach contents return through the tube with some force, it indicates a strong motor activity or a stomach greatly overdistended with contents—certainly a high pressure. When bile is found in the stomach contents it probably depends on relaxation of the pylorus with upward pressure of the duodenal contents through contraction of the abdominal muscles, or reverse peristalsis. The slow change of albumin, especially of meat fibres, shows that the gastric digestion is retarded.

5. Trypsin in the Stomach.—Farr wished to discover what, if any, clinical value was to be attached to the findings in the stomach contents after oil test meal. The oil meal, as given, consisted of 100 to 200 c.c. of olive oil or cottonseed oil; in most cases this was given through a tube; occasionally the patients preferred to drink the oil. While the tube was in the stomach, before the oil was administered, any contents present were aspirated or washed out. In the case of a large dog, in which repeated attempts to obtain duodenal contents had failed, lavage with sodium bicarbonate solution, as well as the administration of magnesia, was tried without effect. In one half to one hour, the oil was aspirated. In many cases a few cubic centimetres of whitish mucoid fluid, in addition to a small amount of oil, was all that could be recovered. In other cases a large amount of pale green or dark curdy green fluid, amounting in one case to as much as 250 c.c., was obtained. With this was a supernatant layer of unchanged oil and an intervening zone of soaplike emulsion. The tests were carried out in the separated white or green fluid without previous filtration. He found that the duodenal contents may frequently be obtained after the oil test meal, though sometimes there is doubt as to the character of the fluid aspirated. On this account it may be possible to exclude atrophy of the pancreas, but only under very unusual conditions can we demonstrate its presence. In a number of diseases the examination has yielded suggestive results. The observation of Boldireff is of more interest from the point of view of pathological physiology than of diagnosis, for example, in gastric ulcer and in achylia. The casein method of Volhard is a delicate qualitative test for trypsin, but for this purpose needs simplification. The regurgitation of the alkaline intestinal juice induced by oil may explain the therapeutic value of the latter in some cases of excessive acidity.

7. Experimental Intrathoracic Œsophageal Surgery.—Janeway and Green have operated on sixty-nine dogs under complete anaesthesia either by chloroform or ether. The technique was as follows: 1. Gastroœsophageal anastomosis without resection.—The eighth rib is first resected subperiosteally. The chest cavity is opened in the periosteal floor of the resected rib. The peritoneal cavity is opened through the diaphragm, and the anterior wall of the stomach is drawn into the thoracic cavity. The stomach is opened, the female half of the button is introduced, and the opening closed by a pursestring suture. The male half, which has been

previously passed down the œsophagus, is now separated from its carrier and supported for engaging the female half. This button, which has been designed by them especially for œsophageal anastomosis and depends for its union on penetrating needles, is then pressed together. The circle of anastomosis is reinforced by a running suture. The portion of tissue between the two halves of the button subsequently sloughs out and liberates the button. The opening through the diaphragm is closed by suturing this structure to the wall of the stomach. Closure of the chest completes the operation. 2. Gastroœsophageal anastomosis with resection of a portion of the œsophagus and stomach.—In this procedure they have found it an advantage to resect both the seventh and eighth ribs, and to open the thoracic cavity in the periosteal floor of the seventh rib. The peritoneal cavity is opened behind and in front of the stomach. The gastrosplenic and gastrophrenic ligaments are now divided between double ligatures. This permits of the delivery of a large portion of the stomach into the thoracic cavity. The cardia is divided with the cautery knife between two clamps. The œsophageal stump is protected by clamping over it a gauze pad. Interrupted Lembert sutures are passed from the posterior wall over the clamp to the anterior wall of the stomach. The clamp is now removed, all bleeding stopped, and the female half of the button dropped into the cavity of the stomach. The interrupted sutures are now tied and closure of the stomach completely by continuous Lembert sutures. The œsophagus is then amputated by the cautery between a pursestring suture, and a clamp which is applied to the upper end of the segment to be removed. The free end of the œsophagus is pushed into the cavity of the male half of the button, and the two halves are pushed together. The circle of union is reinforced by a running stitch. The stomach is then sewed to the opening in the diaphragm, and the chest wall closed. The authors remark that their work has demonstrated that speed, absolute asepsis, and scrupulous care in the minimizing of trauma are essential to success in intrathoracic surgery. Even the exposure of the raw mucous membrane, a procedure which is done with impunity in the abdomen, is not devoid of danger in the thorax. It is, therefore, for the sake of diminishing trauma, and preserving greater asepsis that they have utilized a button in making the anastomosis. Their results have been decidedly better than they were by the suture method, but still far from being satisfactory. They have successfully accomplished four resections of the cardia and œsophagus and six lateral anastomoses of the stomach and œsophagus without resection.

9. **Treatment of Trifacial Neuralgia with Deep Injections of Alcohol.**—Patrick makes his injections with a straight needle about 10 cm. long, 1.5 mm. thick, and fitted with a stylet or obturator, the blunt end of which is flush with the needle point. The sharp point is used to puncture the skin, after which the stylet is pushed home, making a blunt instrument for the remainder of the penetration. The needle is introduced at the lower border of the zygoma, the object being to reach the inferior maxillary division of the nerve at its emergence from the fora-

men ovale (about 4 cm. deep) and the superior maxillary as it leaves the foramen rotundum (about 5 cm. deep). Deep injections for the supraorbital branch he has abandoned as being too hazardous. When an injection of this branch is needed, which is not very often, he uses a peripheral injection at the supraorbital notch. In a few cases he has also used a peripheral injection at the infraorbital foramen. The solution used is about 85 per cent. alcohol (not absolute) with four grains of cocaine to the ounce. Of this, about 2 c.c. are introduced each time. Morphine and chloroform, formerly used in the solution, he has abandoned. He is positive that when the injection reaches the nerve the pain is stopped at once. The greatest drawback to the method is the uncertainty of reaching the nerve on any given trial. But if the patient is willing to persevere he is practically certain of relief. Of course, in many cases one succeeds the first time. The danger of the operation is as nearly nil as can well be. Disagreeable complications are exceedingly infrequent. In a few cases injection of the middle branch has caused a small hæmatoma which did no harm. In this connection it is worthy of note that in the seventy-five consecutive cases covered by this report thirty-six patients were between sixty and seventy years old, thirteen between seventy and eighty, and one over eighty. The procedure is not excessively painful; at least, patients do not often complain of it. An anæsthetic is very rarely necessary. There is no shock. Most of his injections have been done in the office, and in a few minutes the patients are ready to walk out. There is no reason to believe that these injections effect a radical cure, though occasionally this might be the result. The period of relief to be obtained is hard to estimate. A good injection, as shown by marked analgesia, may be expected to relieve for from one to three years, possibly more. Reinjections after recurrence and injection in cases in which patients have already undergone peripheral operations seem to be just as successful as primary injections.

MEDICAL RECORD

December 11, 1900.

1. The Present Status of the Tonsil Operation. A Collective Investigation, By GEORGE L. RICHARDS
2. Some Notes on the Last Epidemic of Yellow Fever in Cuba, By POWELL C. FAUNTLEROY.
3. Acute Gonorrhœal Prostatitis, By F. C. VALENTINE and TERRY M. TOWNSEND.
4. The Treatment of Diseases in Senility, By I. L. NASCHER.
5. Evidence, Controverting Rosenberger's Tuberculosis Bacteriemia Hypothesis, By BOND STOW.
6. A New Method of Applying Lactic Acid Bacilli in the Treatment of Suppurating Wounds, By W. B. McLAUGHLIN.
7. A Case of Total Ophthalmoplegia, By FRANCISCO M. FERNANDEZ.

x. **The Present Status of the Tonsil Operation.**—Richards remarks that further study of the physiology of the tonsil seems desirable, as it is still somewhat of a question as to how much importance the tonsil may be at certain periods of life, and if of value in the economy it ought not to be removed to as great an extent as at present. Under diseased conditions, the tonsil is one of the avenues of entrance for the tubercle bacillus and for the specific

organism of rheumatism, whatever that may be. There is a sufficient amount of undoubted clinical evidence to show that it is also the avenue from which the infection enters for many other constitutional diseases. The small submerged tonsil is quite as apt to be deleterious to the economy as the large one. Local measures in the treatment of tonsillar troubles have their place. The indications for removal are any condition in which it is evident that the tonsil is exerting an injurious influence upon the entire organism which cannot be averted by local treatment. Either is the safest general anæsthetic. According to the testimony of most observers, some form of horizontal position is the safest for general anæsthesia, though the writer believes that the upright position, properly safeguarded, is equally safe. Tonsillectomy should always be done in preference to tonsilotomy. Any method that removes the tonsil *in toto*, with its capsule, with the least traumatism, is satisfactory. The voice is improved rather than injured, provided the pillars of the fauces are uninjured in the operation.

3. **Acute Gonorrhœal Prostatitis.**—Valentine and Townsend say that when a gonorrhœa of the anterior urethra extends to the posterior division of the canal, acute gonorrhœal prostatitis invariably follows. The pathological varieties of acute gonorrhœal prostatitis may be divided into (1) simple catarrhal, incorrectly spoken of as follicular, and (2) diffuse or parenchymatous, which is not infrequently sooner or later complicated by areas of supuration. In the simple variety the gland is not enlarged or hardened. The acini and ducts are widened and their lumina filled with desquamated epithelium, leucocytes, and small round cells. The submucous fibrous tissue is infiltrated with leucocytes and inflammatory corpuscles. The orifices of the gland ducts emit a straw colored fluid containing epithelium, lecithin corpuscles, leucocytes, and a scant number of gonococci. This is the follicular prostatitis described by authors. In a further stage of the inflammation the gland ducts become obstructed by the periglandular infiltration; stagnation of the secretion takes place, and a small follicular abscess may result. This has been termed by Jadassohn pseudoabscess because of its being a collection of pus in a preformed space of lumen. These small abscesses may break through the duct into the ejaculatory duct or through the urethral mucosa directly. In the second or diffuse or parenchymatous variety of the inflammation, the usual inflammatory changes occur in the whole structure; congestion, serous exudation into the tissues, epithelial desquamation, and disintegration. If the inflammation cannot be arrested at this point, the continued bacterial irritation may cause small abscesses to form in the interstitial connective and muscular tissue and in the alveoli. These small pus formations tend to rupture into the ducts, or if in proximity, may coalesce. Many instances are observed after recovery, where a large depression in a lobe is felt, due to this destruction of tissue with its subsequent cicatrization. Although the tendency of the abscesses is to rupture through the ejaculatory duct and discharge themselves into the urethra, yet they are as prone to follow the plane of least resistance as abscesses into other parts of the body.

6. **A New Method of Applying Lactic Acid Bacilli in the Treatment of Suppurating Wounds.**—McLaughlin observed from the perusal of the literature that in order to get the fullest action of lactic acid bacilli, they must be applied in a medium suitable to their growth and development in the wound and that this medium must be capable of undergoing lactic fermentation. Acting on this idea he prepared a powder consisting of the sterilized and dried solids of skim milk which he incorporated with a dried culture of Metchnikoff's Bulgarian bacilli, care having been exercised in the drying of the culture not to carry the temperature above 101° F. This powder was then used as an ordinary dusting powder on cases of carcinoma, chancre, purulent ulcers, and ordinary septic wounds. The results have been such as to justify him in his belief.

BRITISH MEDICAL JOURNAL

November 27, 1909.

1. Syphilis and Aneurysm, By WILLIAM OSLER.
2. Greek Medicine in Rome, By Sir T. CLIFFORD ALLBUTT.
3. An Oxygen Generator and Inhaler: Its Use in Mountain Sickness, By LEONARD HILL.
4. A Case of Fracture of the Radius Treated by Early Massage and Movement, By J. P. HASTINGS.
5. The Employment of Silver Wire to Bridge the Gap After Resection of a Portion of the Lower Jaw, By SINCLAIR WHITE.
6. A Case of "Giant Feet," By HOWARD STEVENSON.
7. The Science Committee of the British Medical Association:
 - (a) Some Observations on a Twenty-four Hours' Walking Race, By F. COOK, E. G. SCHLEISINGER and A. H. TODD.
 - (b) Auricular Fibrillation: A Common Clinical Condition, By THOMAS LEWIS.

1. **Syphilis and Aneurysm.**—Osler, in the Schorstein lecture, states that at a low estimate, we may place the mortality at between 6,000 and 7,000 annually, about one in eighty of the deaths, not taking into account the unestimated and very large number of stillbirths. In about one seventh of the cases the deaths are due to what we regard as the more direct effects of the disease; aneurysm and the enormous group of affections of the nervous system represent later, but none the less definite, effects of the poison. The Wassermann reaction and the detection of the spirochæta give an entirely new aspect to the disease, and obliterate in great measure old distinctions and divisions. There is only one syphilis, one and indivisible, with many manifestations. The discovery of the cause is the first step toward successful measures for the prevention of an infectious disease. So far as venereal disease is concerned our attitude has been one of hopeless inactivity, partly owing to inherent difficulties, partly to a lack of courage. The innate difficulty relates to the problems of controlling one of the two great primal appetites. No measures yet devised have successfully restricted illicit intercourse between the sexes. Prostitution, the blackest blot in our civilization, exacts a ghastly toll of suffering, and a sacrifice annually of thousands of lives. Add to the 6,000 or 7,000 slain by the spirochæta the thousands maimed and killed by the gonococcus and the sum total debited the venereal infections reaches figures only behind those of tuberculosis, pneumonia, and cancer. Too deeply entrenched in the very citadel of our

social fabric for a frontal attack, the lessons of other successful campaigns must be conned, and long years of training must be undergone before we can hope for a truce, to say nothing of victory. There are four lines of attack possible. The first is a wholesale and healthy education of our youth in matters sexual, pointing out plainly the necessity of continence, though a hard condition; the really terrible risks, and the sad train of events likely to follow an infection. Secondly, steps should be taken to lessen the open, flagrant whoredom which makes the streets of London, for example, a by-word among the nations. In other capitals vice has deliberately to be sought, here it jostles our youth in most seductive form at every turn, to the great peril of even "a fugitive and cloistered virtue." It is no wonder that so many yield. A special police force of men and women could in a year clear the streets and places of public amusements. Such a measure alone might only "skin and film the ulcerous spot," as no doubt it does in Paris, where Bizard estimates that one million men visits annually "les maisons de tolérance" and "les maisons de rendez-vous"! Thirdly, venereal diseases should be put in the same category as other acute infections of public danger, and every case should be known, registered, and supervised. This seems to be impossible, to-day, but it can be done; but twenty years ago how wild and fanciful we thought the notification of tuberculosis. And, lastly, much may be done to lessen the ravages of the disease by increasing everywhere the facilities for early and prolonged treatment. The new methods of investigation have raised a hope that—perhaps at the very outset, at the portal of entry—the disease may be jugulated. Time will tell. Like other protozoal affections, syphilis displays an obstinacy and chronicity that has made some authorities doubtful of the possibility of a final cure. On this question he believes with Jonathan Hutchinson in the permanent curability of the disease. He has been long enough in the profession to see the children's children of syphilitics hale and hearty, with no taint left in stem or branch; but unhappily this is not always the case, and unless the treatment is thorough and prolonged recurrences are only too common, and the reports indicate in how many thousands it is still inefficient.

5. Silver Wire after Resection of Lower Jaw.

—White reports a case of a boy, nine years of age, whose left side of the lower maxilla was removed. Free exposure was secured by carrying an incision from the left angle of the mouth downward and backward to the neck. The bone was divided in front at the level of the left canine tooth, and behind just above the junction of the body with the left ramus, and the tumor together with two inches of the body of the maxilla, removed. The periosteum covering the lower border of the excised segment was carefully preserved. The resected surfaces of the lower jaw were pierced with a drill to the depth of three quarters of an inch. The drill hole in the body was horizontal, and placed near its lower margin, so as to miss the teeth roots; that in the ramus was vertical and somewhat posterior to the mandibular foramen. The ends of a suitable length of stout silver wire were jammed tightly into the drill

holes, and the wire completely covered by suturing together the mucous membranes of the cheek and the floor of the mouth over it. A small drain tube was placed in the neck end of the wound and retained for forty-eight hours, and the mouth was rinsed frequently with hydrogen peroxide solution. A little pus formed in the track of the tube, but the wound in the mouth healed quite kindly. At the present time, except for the skin scar, there is, absolutely no external deformity. He can open his mouth almost to the full, and when the jaws are closed the teeth on the right side meet accurately those in the corresponding side of the upper jaw. He is able to bite soft things, and has to be restrained from attempting greater masticatory feats. White thinks it probable that new bone may form around the wire from the preserved periosteum and still further strengthen the mandibular arch.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 25, 1909.

1. Fear and Horror as the Cause of Accidents.
By L. LEWIN.
2. Tuberculosis of Childhood and Immunity.
By RITTER and VEHLING.
3. Adrenalin as an Antidote.
By W. FALTA and L. JVCOVIC.
4. The Importance of Bronchoscopy in Internal Medicine.
By A. EPHRAIM.
5. A New Method of Sterilizing the Skin in Surgical Operations.
By ANTONIO GROSSICH.
6. Diagnosis and Treatment of Commencing Pulmonary Tuberculosis with the Aid of Modern Diagnostic and Therapeutic Methods from a Clinical Standpoint.
By A. VON SOKOLOWSKI.

2. Tuberculosis of Childhood and Immunity. Ritter and Vehling recommend 1, the removal of the bacillus scattering consumptives from dwellings and families in order to prevent a "moderate" infection, particularly among the children; 2, careful and long continued treatment of scrofulous or tuberculous children in order to secure if possible a complete cure of the tuberculosis; and 3, the freshening of the failing immunity of adult tuberculous patients to tuberculosis by one or more courses of treatment in order to prevent the transition of benign tuberculosis into the incurable and infectious pulmonary phthisis.

3. Adrenalin as an Antidote.—Falta and Jvcovic assert that the results of their experimentation on frogs show that adrenalin is a powerful antidote to strychnine.

4. Bronchoscopy in Internal Medicine.—Ephraim points out that the condition of the bronchi as seen with the bronchoscope does not always agree with that indicated by the auscultatory signs. On the one hand frequently in chronic catarrhs in which not only crepitant but subcrepitant râles are present the bronchoscopic condition is normal and we are obliged to locate the trouble in the smallest bronchial twigs, instead of in the medium sized or large bronchi as indicated by the auscultation; while on the other hand sometimes bronchoscopy reveals doubtful bronchitis when the most careful auscultation fails to reveal its presence. He then passes to the recognition of anomalies of form of the bronchi and of diseases, such as syphilis of the bronchi, tumors, and diseases of the bronchial glands.

5. Sterilization of the Skin.—Grossich says that for the past two years he has been accustomed

simply to paint the skin about wounds in cases of injury, or the site of operations, with tincture of iodine, and that he has obtained better results than he formerly did with the classical methods of cleansing with water, soap, brushes, ether, and alcohol thoroughly applied. He says that he has thus treated over 700 cases of injury and obtained primary union in all except those patients in whom signs were present that showed that infection had already taken place, inflammation, redness and swelling, amounting to about seven per cent. of the whole number. In not one out of 500 major operations was there a sign of infection from the skin. He particularly mentions 129 herniotomies all of which without exception healed by primary union with a linear, scarcely perceptible scar. Other operations mentioned were removals of tumors, resections, arthrotomies, amputations, nephrectomies, castrations, openings of hydroceles, and laparotomies.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 26, 1909.

1. Studies Concerning the Function of Diseased Kidneys, By SCHLAYER and TAKAYASU.
 2. The Importance of the Leech Extract in the Treatment of Eclampsia, By ENGELMANN and STADE.
 3. Concerning the Property of Human Blood Serum that Renders Active Cobra Venom and the Mechanism of the Cobra Venom Hemolysis, By BEYER.
 4. Serum Treatment and Its Dangers, By SCHEIDEMANDEL.
 5. Demonstration of Tubercle Bacilli in the Circulating Blood of Consumptives, By LIPPMANN.
 6. Further Experimental Proof of the Close Relationship between the Tubercle Bacilli Found in Men and in Cattle and the Possibility of a Metamorphosis of Human Tubercle Bacilli, By EBER.
 7. New Methods for the Demonstration of Proteolytic Ferments and of Their Antiferments, By MANDELBAUM.
 8. Treatment of Climacteric Disturbances and of Dyspareunia, By BUCURA.
 9. Prescription of Doses of Tuberculin, By WEINBERGER.
 10. How Can We Best Educate Women to Seek Relief Cæsarean Section together with Some Technical Remarks Concerning this Operation, By BREWITT.
 11. The Dangers of Tamponade of the Nasopharyngeal Space, By MAYER.
 12. A Case of Hysteria with Blue Edema and Difference of the Knee Jerks, By ANDERNACH.
 13. Postoperative Duodenal Ileus, By WEINBRENNER.
 14. Apparatus for the Spontaneous Fixation and Imbedding of Microscopical Preparations, By ARNDT.
2. Leech Extract in the Treatment of Eclampsia.—Engelmann and Stade find that the fatal action of expressed juice of the placenta injected intravenously, dependent on the multiple formation of thrombi, may be prevented by the simultaneous, or previous, injection of extract of leeches, to which they give the name of hirudin. Hirudin seems to act in the same way in cases of eclampsia which are characterized by the formation of multiple thrombi. Its action is marked clinically first by cessation of the convulsions. Its action depends probably on the fixation of certain components necessary to the act of coagulation. Human blood that has been subjected to the action of hirudin exhibits a demonstrable diminution of coagulability.
4. Serum Treatment and Its Dangers.—Scheidemandel reports a case in which the repeated injection of large quantities of streptococcus serum induced a condition of collapse with threatening general symptoms in a strong, well nourished girl

nineteen years old. Very few similar cases have been reported, but he quotes three from literature, two of collapse after injection in one case of streptococcus serum, in the other of diphtheria serum, and one of high fever, cyanosis, and great oedema after injections of antistreptococcus serum. With no desire to exaggerate the bad after effects of serum treatment, as he has had a large experience with the serum treatment of diphtheria patients without seeing any really dangerous consequences, he urges that care be exercised in the repeated use of large quantities of serum of specific or nonspecific nature as they have been recently used in all manner of diseases.

11. Dangers of Tamponade of the Nasopharyngeal Space.—Mayer reports a case in which the nasopharyngeal space of a boy, sixteen years old, was tamponed to control a violent nose-bleed and the tamponade resulted in bilateral acute purulent otitis media with involvement of the mastoid, bilateral purulent inflammation of the antrum of Highmore, extension of the inflammation on the right side to the orbit, and the formation of an orbital phlegmon. These complications were ascribed to two causes, the long continuance of the tampon in place and the presence of a purulent catarrh in the nasopharyngeal space of the patient. The tampon should be left *in situ* until the bleeding vessel is occluded by a thrombus, which is not certain till after the third day, and many authors state that no harm results if the tampon is left five days. But if a purulent process is present symptoms may be produced which call for the removal of the tampon after a much shorter time.

AMERICAN JOURNAL OF OBSTETRICS

November, 1909.

1. The Treatment of Retrodisplacements of the Uterus, By W. H. HUMISTON.
 2. Advantage of the Combined Intra-peritoneal and Extra-peritoneal Ureterolithotomy for the Removal of Stones from the Lower Ureter, By E. JONAS.
 3. The Surgical Treatment of Tumors of the Bladder, By J. W. KEEFE.
 4. Serum Treatment and Its Dangers, By SCHEIDEMANDEL.
 5. Chylous Cyst of the Iliac Mesentery, By J. N. BELL.
 6. Embryo Abdominal Surgeons with Inadequate Preparation and Knowledge, By C. E. CONGDON.
 7. When Shall We Operate for Ruptured Ectopic Gestation? By J. H. CARSTENS.
 8. Artificial Anus Following Operation for Intussusception. Three Years' Complete Occlusion of Large Bowel. Method of Restoring Continuity, By R. R. HUGGINS.
 9. Some Personal Experiences in Gallbladder Surgery, By J. Y. BROWN.
 10. How Can We Best Educate Women to Seek Relief Early from Carcinoma of the Uterus, By H. E. HAYD.
 11. Calcareous Degeneration of the Fibroid Uterus with the Presentation of a Specimen, By C. C. FREDERICK.
 12. Nephrocoloptosis, By W. B. DORSETT.
 13. Rupture of the Uterus during Labor, By H. W. LONGYEAR.
 14. Ovarian Pregnancy at Term with Recovery of Mother and Child; Preliminary Report of a Case, By R. W. LOBENSTEIN.
 15. A Study of Four Hundred and Forty Operations on the Appendix, with Remarks, By W. C. G. KIRCHNER.
 16. The New Point in Diagnosis between Appendicitis and Tubal Diseases, By E. J. ILL.
- By R. T. MORRIS.

17. Phlegmasia Alba Dolens in Connection with Ovarian Tumor, By W. A. B. SELLMAN.
18. Some Phases of Puerperal Sepsis, By H. C. FANTZER.
19. Cesarean Section, Abdominal and Vaginal, Compared and Contrasted, By M. F. PORTER.
20. Drainage, By J. F. BALDWIN.
21. Is the Routine Exhibition of the Preoperative Purge Defensible? By E. WALKER.
22. Terminal Events in Gallstone Disease, By C. N. SMITH.
23. Removal of the Upper Portion of the Rectum and Sigmoid. Report of a Case, By T. B. NOBLE.
24. Malignant Tumor of Undescended Testicle, By O. G. PFAFF.

2. Advantage of the Combined Intraperitoneal and Extraperitoneal Ureterolithotomy for the Removal of Stones from the Lower Ureter.—Jonas thinks the proper treatment for stone in the lower ureter is the combined intraperitoneal and extraperitoneal ureterolithotomy. The intraperitoneal operation serves for exploration and for the removal of conditions which may be causative factors in the lodging and formation of stone, it also gives greater facility in finding the stone. The extraperitoneal operation is for the removal of the stone. Stones which are at the crossing of the ureter and the iliac vessels can also be removed by this combined method. If it is found difficult to push back the peritonæum sufficiently McBurney's gridiron incision may be added, thus forming a flap which gives access to the entire ureter from its point of crossing with the iliac vessels to the bladder.

3. The Surgical Treatment of Tumors of the Bladder.—Keefe summarizes his paper as follows: 1. Anesthesia with nitrous oxide gas and oxygen. 2. Cystoscopic examination to determine the site and character of the tumor. 3. Urethral catheterization, the catheter being left in the ureter as a guide during the operation. 4. The high Trendelenburg position. 5. Opening the abdominal cavity in order to locate the growth with accuracy, to aid in separating the peritonæum from the bladder over the site of the tumor, and to allow sufficient space for operating. 6. The growth in the bladder is located by an assistant with a cystoscope during the operation. 7. The peritoneal cavity is closed, the growth having been removed through an extraperitoneal wound. 8. Immediate suture of the bladder. 9. Allowing the patient to void urine frequently, or using the catheter at suitable intervals.

9. Some Personal Experiences in Gallbladder Surgery.—Hayd believes as the result of experience and observation that the gallbladder should be removed for the following indications: 1. For acute cholecystitis with gangrene. 2. For chronic cholecystitis when the organ is so thickened and contracted that its functional power could not be restored in the future, and for closure of the cystic duct so that it is useless as a drainage channel. 3. For hydrops in cases in which the bladder is large and the cystic duct obstructed. 4. For cancer. 5. For gunshot injuries or perforations from accidental causes in which partial cholecystectomy is not advisable or possible. 6. In general cholecystectomy is performed too frequently and is often an unnecessary operation. It has a higher mortality than cholecystostomy, takes more time for its performance, gives less favorable opportunity for drainage,

and is usually followed by more and more troublesome adhesions.

ANNALS OF SURGERY.

November, 1909.

1. A Study of Burns Involving the Periosteum of the Vault of the Skull, By J. M. MASON and B. S. LESTER.
2. The Operative Treatment of Cancer of the Larynx, By GEORGE EMERSON BREWER.
3. The Closure of the Wound after the Radical Amputation of the Breast, By JOSEPH WIENER.
4. The Postoperative Treatment in Cases of Typhoid Perforation, By PEREGRINE WROTH, JR.
5. Spontaneous Rupture of the Spleen in the Course of Typhoid Fever, By ROBERT C. BRYAN.
6. Ileocolic Intussusception in an Adult, By JAMES SHERREN.
7. A Very Early Form of Renal Tuberculosis Revealed by Nephrectomy, By MARTIN W. WARE.
8. The Surgical Treatment of Nonresilient Diverticula of the Bladder, By EDMOND M. VON EBERTS.
9. Fibrosarcomata of Both Ureters Metastatic to a Primary Lymphosarcoma of the Anterior Mediastinum of Thymus Origin, By BOND STOW.
10. Congenital Unilateral Absence of the Urogenital System, By DONALD GUTHRIE and LOUIS B. WILSON.
11. Periurethral Pelvic Phleboliths, By GEORGE O. CLARK.
12. Cyst of the Prostatic Urethra, By LEO BUEGER and ADELE OPPENHEIMER.
13. Interilioabdominal Amputation, By JOSEPH RANSOHOFF.
14. A New Operation for Ingrown Toenail, By S. D. VAN METER.
15. The Treatment of Gonorrhœal Arthritis with Vaccines made from the Gonococcus, By H. F. HARTWELL.

1. Burns of Vault of Skull.—Mason and Lester report two cases of extensive burns of the vault of the skull, destroying the periosteum over large areas of the parietal, occipital, and frontal bones. Both patients were treated on the expectant plan, the burns were treated antiseptically and the authors waited for the denuded bone plates to cast off. In one patient this occurred without accident or complication, and final healing resulted. In the other case, the patient progressed satisfactorily for a month, when suddenly hemiplegia, aphasia, and coma developed, and he died from a large brain abscess. In the first case, in which the patient died thirty-one days after receipt of the injury, they found that the necrosed bone had not begun to separate at the end of four weeks, and in the patient who finally recovered, they found that it was at least three and one half months before separation was complete. From this they think that a period approximating three or four months is required for separation and removal of sequestra. They noted in the burns of all the bones of the vault of the skull, that the outer table was cast off over the entire area which was bared of periosteum but that the inner table was only destroyed over a small area corresponding to the centre of the necrosed outer table, and that the brain infection was received by contact with this inner area of inflamed bone. If drainage is established at this central point, infection should not travel through the dura, and proper dressings ought to protect the brain until such a time as the rest of the necrosed bone is thrown off and the whole area covered with grafts. Their suggestion for treatment is, therefore, that every such case be treated antiseptically until the sloughs of the soft parts have been cast off or cut away and the bone left bare and clean.

This will only take a few days. After this, a trephine opening about half an inch in diameter should be made over the centre of the denuded bone, and the button removed down to the dura. The wound should now be dressed antiseptically until such a time as the denuded bone is cast off, the drainage provided for at the centre being relied upon to take care of any infection which reaches the dura, after which the whole area should be grafted, as was done in their second case.

2. **Treatment of Cancer of the Larynx.**—Brewer describes his *modus operandi*: Under general anesthesia, after the usual local preparation, a median incision is made extending from the cricoid to the sternal notch. The muscles are separated, exposing the isthmus of the thyroid, which is double ligated and divided. The separated edges are pushed to each side and the trachea freely exposed. A low tracheotomy is then performed and the cannula introduced, after which the upper part of the incision is united with silkworm gut sutures, and the peritracheal space generously packed with iodoform gauze both above and below the cannula. The wound is dressed and the patient placed under a tracheotomy tent into which a small amount of steam is introduced by means of a croup kettle. The external opening of the tracheal cannula is constantly covered with four or five layers of gauze wet in warm boric acid solution, with a view of filtering the air which enters the trachea. About ten days after the preliminary operation, if the patient has a normal temperature and is not suffering from cough and excessive tracheal secretion, the secondary operation is undertaken. Chloroform is administered through the tube until the patient is anesthetized, after which its administration is continued in the same manner, or colonic etherization is employed by means of the Sutton apparatus. The use of scopolamine, 1/100 gr., and of morphine, 1/6 gr., one half hour before operation is a decided advantage in these cases. The patient is placed on a flat table with the head well extended. An incision is made from the body of the hyoid downward to the upper limit of the former cut. From the upper extremity of this incision two lateral incisions are made in an upward and outward direction extending to the anterior borders of the sternomastoid muscles. The two triangular flaps are turned outward, the sternohyoid muscles divided just below their attachment and the sternothyroids detached from the cartilage. The two superior thyroid arteries are next located and ligated. The superior laryngeal nerves are cut and all lymph nodes and neighboring lymph bearing areolar tissues are removed. The attachments of the inferior constrictors are next divided and posterior surface of cricoid partly separated from the oesophagus by blunt dissection. When the larynx is thoroughly skeletonized, the trachea is severed just below the cricoid, and its distal extremity immediately packed tightly with gauze, completely preventing the entrance of blood or pharyngeal mucus. The forefinger of the left hand is next introduced into the upper or laryngeal segment of the tube, and the larynx gently raised from the oesophagus, any remaining attachments being separated by gauze sponges. When the larynx is thus completely sepa-

rated from the oesophagus, the tips of the thyroid cornua are divided, the thyrohyoid membrane incised, and the larynx removed. The pharyngeal wound is then packed with gauze to prevent excessive contamination of the wound. The oval pharyngeal wound is next tightly closed by two layers of suture. After closure of the pharyngeal opening the entire upper wound is temporarily packed with wet formalin gauze, while the tracheal stump is prepared for closure. This is accomplished by removing redundant tissue above the cannula opening, dissecting out or destroying with cautery the mucous membrane, and packing firmly with iodoform gauze above the tube. A No. 30 F. rubber feeding tube is then introduced through the left nostril into the oesophagus, and secured by a safety pin and plaster straps to the face. The wounds are next united above with generous gauze packing about the tube.

THE SOUTHERN CALIFORNIA PRACTITIONER.

November, 1909.

1. Sterilization of Human Beings—The Indiana Plan.
By H. C. SHARP.
2. Resection of the Bladder, By GRANVILLE MACGOWAN.
By DANIEL W. WHITE.
3. Trachoma.
4. Irreducible Fracture of the External Condyle of the Humerus. Report of a Case, with Operation.
By FRANCIS E. SHINE.
5. Abscess of the Liver. Report of an Unusual Case.
By W. B. POWER.
6. Refractive Errors—Their Discovery by the General Practitioner by an Easy Method.
By W. H. DUFFLEY.

1. **Sterilization of Human Beings.** The Indiana Plan.—Sharp remarks that by the Indiana idea is meant that there is established a method through a surgical procedure, by which people, of mental defect and transmissible physical disease, are prevented from procreating without, in any way, endangering life, or incapacitating them in their enjoyment of life, health, and pursuit of happiness other than the loss of procreative power. This is done upon the male by what is known as severing of the vas deferens. This operation requires but a short space of time, with very little pain, not sufficient to require an anæsthetic, either local or general, and does not endanger, in any way, the life of the patient, nor prevent him from engaging in his daily work for a longer period of time than it requires to do the operation. He has severed the oviduct in an epileptic female child of eleven years of age. At fourteen she menstruated and has continued to menstruate every twenty-eight days, she also has full bust development. She is feminine in her ways and has no outward appearance of being unsexed. Although Sharp has not had an opportunity to operate upon a male child prior to the age of puberty, he believes that such a child would go through the complete sexual development. In the female, the operation is slightly more serious, as the oviduct has to be reached through an abdominal wound, this requiring a general anæsthetic, with from a week or ten days in a ward of the hospital. The operation is no more dangerous to life than is the one performed upon the male, if in the hands of a skillful operator. In the case of the male, the end of the vas nearest to the testicle is

left patulous in order that the normal secretion of that gland may be poured out around the blood vessels and lymphatics of the spermatic cord, where it is reabsorbed just as any fluid injected hypodermatically is absorbed. Thus appropriated to the system, it acts as a wonderful nerve and muscular tonic, and it has been conclusively proved that this secretion, when thus reabsorbed, has a remarkable influence upon the nervous system. Mental and physical vigor and the activity of the spinal centres are greatly improved, not only in the case of general prostration and neurasthenia, but also in the case of the aged. What has been said of this secretion applies equally to the secretion in the ovary in the female, and it undoubtedly plays a very important part in the general nutrition. In addition hereto, in gynecological practice it has been observed when there is a premature menopause accompanied by distressing symptoms, mental and physical, such symptoms have been materially alleviated by a hypodermic injection of the ovarian secretion.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of March 15, 1909.

The Corresponding Secretary, Dr. FRANK C. RAYNOR, in the Chair.

A Contribution to the Treatment of Cancers.

—This was the title of a paper by Dr. C. AM ENDE. At the outset he said he did not wish to detract in any way from the importance of the early local operation. This left for consideration the medical treatment of cancerous growths reappearing after an operation, beginning with their earliest possible detection and often eventually requiring further operative surgery in addition. In the treatment of cancers, principally of the carcinomatous and epitheliomatous types, by the method which he had employed, the primary and fundamental observation was that some sheep thyroids, preserved in their natural condition, seemed to give better results in the treatment of certain goitres than the excised material of commerce. Next followed the discovery that several natural varieties of sheep thyroids were met with which materially differed both in their physical characteristics and in their physiological properties. One of these, the most active for the treatment of early goitre, seemed most prone to produce tachycardia and gastric disturbances, while another proved to contain an organic compound possessing the property of neutralizing or antagonizing cancer toxins. The thyroidal antitoxine could not be expected to be obtainable from or to be found in the dried glands of commerce; nor could the latter yield the same results as the natural organ. These considerations led to the production of a fluid extract which would retain that apparently special antitoxine in its original condition, and this extract differed in every way from the German thyroïdin. Its antitoxic properties, which were available to the

fullest extent for the reason that it produced no cardiac or gastric disturbances whatever, were shown by the fact of its restoring to bodily and mental vigor patients who were suffering from the exhaustion of advanced carcinomatosis. When such patients had obtained sufficient strength to come to the office for additional treatment by the Röntgen rays, it was furthermore found that the combined treatment brought about the disappearance of deep seated tumors which were as yet soft—some of them quite large—or of cedematous infiltrations; a result not obtainable by the extract itself or from the use of the x ray alone.

Several cases were cited. One was that of a tumor extending upward from the sigmoid flexure into the abdominal cavity, with considerable bulging on the left side. When this had subsided a deep seated, wormlike thickening could be felt, which was interpreted as the scar from an attempted excision of the carcinomatous sigmoid, and soon afterward this disappeared also. A recurrence of the growth eight months later, following the cessation of treatment, yielded to a short series of x ray applications. A similar course was noted in a patient suffering from carcinoma of the breast, who had now remained well for two years. The delight and gratitude of these patients for the prolongation of active life, free from pain and with new hope, was a striking feature. The method had been employed in other forms of cancerous disease also, and in the last case of epithelioma treated by Dr. Am Ende, in which the growth extended from the dorsum of the nose over the left ala, disappearance had followed after seven treatments at intervals of from one to two weeks. A single case of sarcoma had yielded to about thirty rayings, but in this form of disease Colcy's mixed toxins would appear to be superior. The results reported were all obtained by the use of x rays in the usual manner. Although this agent was inefficient in hard, nodular forms of recurrent malignant disease, and was found efficacious in the softer only, its rôle in this class of work would now seem to assume greater importance than had as yet been conceded to it. Six inch tubes, with gradually diminished doses of the thyroid extract, probably gave the best results, the distance of the tube and length of exposure varying according to the tissue affected.

As to the inefficiency of the rays upon hard carcinomata and nodular recurrences, also resistant to chemicals, failure to penetrate seemed the most natural explanation. To overcome this difficulty he had employed Brauth's interrupter, and with a special lengthening of the spark gaps he had found that nodules which had previously proved resistant lost their hardness or disappeared. A carcinomatous ulcer which had continued to extend also began to recede under this management.

After some remarks on the character and action of the x ray, he went on to say that, considering that cancer cells were not normal embryonic cells, but cells which were irregularly produced and assembled, only resembling the normal, they would seem the less likely to resist such influences as the electrical propulsions and more prone to undergo disintegration. This would, furthermore, suggest

the necessity for the lapse of a certain amount of tonic for the completion of the reaction. The number of patients exhibiting this reaction, he said, was altogether too small for any general conclusions. They could only serve as guides for future work and emphasize the importance of the earliest possible detection of any symptoms of recurrence. Although in one instance a comparatively firm gland situated under the clavicle disappeared under treatment, as a rule bones protected underlying structures from the active rays. The thyroid cartilage was possibly penetrable, but two cases in which this seemed to be the case were debatable. For the raying of cavities, rubber or metal specula were employed. Protection of parts dangerously near the tube, or of other parts the exposure of which it was desired to avoid, could be secured more satisfactorily by means of folds of chamois skin than by lead foil. As regarded adjuvant medicinal agents, the use of thiosinamine had been discontinued because it appeared to act not only upon the growth itself, but upon the wall which Nature sometimes threw up for the prevention of the extension of the morbid process. Creosotal was of some service as a disinfectant, and in one case, partly sarcomatous, he had given it internally also. In one of his cases a lady had been enabled to get rid of the morphine habit in consequence of the freedom from pain resulting from the treatment. The greatest detriment to this kind of work was the *a priori* conviction of many that any treatment save operative was doomed to failure.

Dr. ASPINWALL JUDD said that, while he was thoroughly in accord with the greater part of what Dr. Am Ende had said, there were a few points in regard to which he was unable to agree with him. He was accustomed to divide cases of malignant disease into five classes: Epithelioma without glandular involvement, epithelioma with such involvement, endothelioma, sarcoma, including Hodgkin's disease, and recurrent carcinoma. In the first of these he had had very fair success, and he gave some of the results obtained. In epithelioma with glandular involvement, however, the treatment had failed. Also in primary deep seated sarcoma he had had no results. The x ray had the effect of stimulating cell growth, and this proved of service in epithelioma. In the case of recurrent carcinoma associated with the malignant glands, there were glands which were the seat of ordinary inflammation, and these might be treated by the x rays. In endothelioma he had met with some success. In sarcoma the cells were of embryonic character, and the action of the x ray appeared to produce adult cells. The result remaining was a fibroma, and this was always recurrent. To prevent recurrence, therefore, it was necessary to take out the remaining fibroma. In sarcoma he had sometimes found it of service to use the x rays in combination with Coley's mixed toxins. In all his cases he was accustomed to employ a hard tube, and he had found that Dr. Am Ende's thyroid extract had added to the efficiency of x ray treatment.

The Diagnosis and Treatment of Rheumatism in Children.—In this paper Dr. LE GRAND KERR said that acute rheumatism in children was entirely

different in all its clinical aspects from the same disease in adult life. The general tendency at the present time was to regard it as an infectious disease, and it was probable that further investigations would show that not one, but several, micro-organisms were the exciting agents in a susceptible child. The disease might be produced by conditions not at all general; hence the conclusion that there existed a causal factor in the individual which was not common to all members of society. The chief object in the recognition of this was the prevention of cardiac changes; but before these occurred there were present a multiplicity of symptoms which might aid in the diagnosis. A child who had a rheumatic parent was very apt to have the disease, and if both parents were rheumatic the likelihood became almost a certainty. It was therefore essential that the family history should be very carefully taken.

The early recognition of the disease was very important, and the most common initial manifestation was amygdalitis. In all the cases of undoubted rheumatism in children which he had had the opportunity of studying this was the case in thirty-nine per cent. In nearly all instances it preceded other manifestations by somewhat less than a year. Pain in the chest and exertional dyspnoea (irrespective of cardiac disease) was an initial manifestation in eleven per cent., and chorea in nine per cent. So called "growing pains," or myalgia, were present in but four per cent. as an initial symptom. Some had come to believe that myalgia was almost a positive sign of rheumatism, its absence indicating the absence of the disease; and this error must be corrected. The manner in which children were clothed, as, for instance, the exposure of the limbs in cold weather, was often the cause of myalgias which were called growing pains. Pleurisy and frequent attacks of bronchitis were quite frequent as accompaniments of rheumatism, but not as initial symptoms. Epistaxis and enuresis, if persistent and other causes were excluded, might suggest the possibility of rheumatism, but here a carefully taken history would often reveal other manifestations of the disease which had not been suspected. Erythemas should always arouse a suspicion as to a rheumatic origin. When we had reason to suspect that any of these symptoms or phenomena were the initial manifestations of rheumatism, the treatment must include the treatment of that disease. The time to treat rheumatism in children successfully was when any clinical manifestation, backed up by a positive family history, made us suspicious of the tendency to the disease. Joint involvement was the initial manifestation in thirty-one per cent. Usually a certain joint was affected for a few hours—rarely for a period of over three days—and this involvement ushered in what was commonly called acute articular rheumatism. The slight amount of pain and swelling might delay the diagnosis and also the treatment.

Having satisfied ourselves that the child had a rheumatic tendency, it was necessary that the defensive arrangements of the body should be put in the best possible condition. These arrangements, as regarded the development of rheumatism in the

child, were: 1. The resistant power of epithelium. 2. A healthy endothelium. 3. Perfect elimination. 4. A condition of no part or organ such as to invite infection or favor the growth of organisms (this applying especially to the tonsils). 5. What might be called "recuperative power." The first three of these were intimately associated with that coordination and cooperation of all parts which were essential to the preservation of a state of health. The fourth demanded the treatment or removal of such areas as continually invited infection, and the fifth, so far as we knew, was a combination of temperament and perfect health. The temperament we could not influence, but the state of health we could.

When active symptoms were present, the care and treatment of the child must be rigorous. The indications were ætiological, pathological, and clinical. The ætiological were: 1. Absolute rest, both physical and mental. 2. The avoidance of solid food for a few days and absolute abstinence from all meats or meat extractives for several days. Sugar must also be restricted to the lowest possible amount, or saccharin be used in its stead, and all foods rich in proteid should likewise be restricted. The pathological indications were: 1. To combat the inflammation in the joints by stimulation of the cutaneous circulation. 2. To limit or prevent an extension to the heart, lungs, pleure, or meninges by elimination through the skin, kidneys, and bowels. Hot enemata were often very efficient, and as a rule he gave them every twelve hours for two or three days. The clinical indications were: 1. If there was hyperpyrexia, an ice cap and sponging with tepid water, accompanied by mild friction and no drying. 2. If there was pain in the joints, rest and local applications. 3. To limit damage to joints—gentle flexion as soon as the temperature had subsided. 4. If there was tachycardia, the application of a cold compress over the heart for at least fifteen minutes every hour or the use of the ice bag; small doses of the bromides. 5. If there was profuse perspiration, it was not to be checked during the first few days, but later to be gradually stopped by a bath twice daily, which was at first tepid and then slowly reduced to about 85° F. 6. If there were anæmia and general debility, the use of tonics when convalescence had become established. Every rheumatic child suffered more or less from blood impoverishment, and in the very acute cases the anæmia was so severe and sudden as to call for the most prompt treatment. Dr. Kerr was in favor of an early though gradual return to the usual diet, and expressed the opinion that much of the prolonged convalescence formerly met with was due to restriction in diet for weeks after an attack. Sugar seemed to be the most harmful article, and he always restricted its use, whatever the prevailing condition.

The salicylates, while occupying a well deserved place in the treatment of rheumatism, were but palliative, though for the time overcoming or modifying the manifestations of the disease. Their use could not be long continued in children, on account of their tendency to disturb the digestion. Salicin was less objectionable than sodium salicylate, and might be given every three hours in the dose of one grain for each year of the child's age. Along

with the salicylates, or immediately after their discontinuance, sodium bicarbonate should be given, and its use maintained for from four to six weeks, though in steadily decreasing doses. There was but one known means by which we could be reasonably certain that we were favorably influencing the possible occurrence of cardiac changes, and that was rest, absolute and prolonged. It was to be noted, however, that this necessary rest helped to bring about a condition characterized by the retention of waste products and muscular atony, and this was his reason for a rapid return to a nutritious diet. It also furnished a reason why we might often advise with benefit a change of surroundings or climate. There was this chief difference between the adult and child types of rheumatism: In the former the disease was expressed as an acute polyarthritis, with the symptoms all massed, while in the latter it commonly occurred in nonarthritic forms, with cardiac changes as a frequent manifestation, and the symptoms spread over a long period; so that often the history of the disease was the history of the child's life. The responsibility of the physician did not end with the diagnosis and treatment of an individual case. If there were other children in the family, they must be protected. The parents must be made to realize that what to them might seem a slight illness might be but the beginning of a disease which would limit the activities and usefulness of their child or possibly result in its premature death.

Dr. JOHN DORNING said we knew little more about rheumatism now than fifteen years ago, when the idea that the disease might be of microbic origin first assumed prominence. This was not yet proved, and even if it was the case we must still recognize inheritance as a predisposing cause. Consideration of this brought up the subject of prophylaxis, and the hygiene and diet of children were most important. In early life a larger percentage of proteid was required than later, but his observations had led him to believe that as a rule children were given too much animal food. The overindulgence in sweets was also to be deprecated, as both these kinds of food tended to develop rheumatic attacks. Whenever a case of amygdalitis was met with the careful physician made constant examinations of the heart and the entire system until the child recovered, as the tonsils were recognized as a frequent source of infection. As the reader of the paper had said, rheumatism was uncommon in children under two years, but formerly many cases of scurvy, a condition which we all now recognized, were treated for rheumatism. In many cases of rheumatism, however, the real nature of the trouble was not appreciated until heart complications made their appearance. Personally, he had found that when a child was suffering from fever of a low grade. (100° to 101°) and gradually increasing anæmia, it was always well to look carefully after the heart. In the treatment of rheumatism rest was undoubtedly of prime importance. It was his practice to keep the child between blankets, as such patients were peculiarly susceptible to atmospheric changes. He gave a milk diet in the beginning, and later allowed cereals, fruits, and such vegetables as spinach. In convalescence general tonics were called for, especially cod liver oil and iron.

Dr. THOMAS S. SOUTHWORTH agreed with Dr. Kerr as to the importance of going minutely into the family history. We should be on our guard, however, against accepting too readily all the statements made by the parents, as not infrequently what was described as rheumatism in the members of a family was simply the myalgia not uncommon in elderly people. Given a rheumatic family history, a suspicion of rheumatism in the child was aroused, and it should at once be placed under treatment—absolute rest in bed, the salicylates, alkalies, and milk diet. There was not much new in the treatment of rheumatism except the newer forms of salicylates. The marked advance of late had been in the way of prompt recognition of the disease and strict treatment. Of alkaline remedies, sodium bicarbonate was the most satisfactory. Dr. Kerr had stated that he used the salicylates early and the alkalies later. Personally, the speaker thought it preferable to begin with the alkalies. The salicylates afforded comfort, but did not act so efficiently as the latter. As regarded the heart, we should not forget that there might be a myocarditis, instead of an endocarditis, for, as there were no murmurs in this condition, it was apt to be overlooked. The desirability of complete rest was evident. In convalescence iron and other general tonics were required more than cardiac stimulants, and every child recovering from rheumatism was certainly in need of supporting treatment.

Dr. HOMER WAKEFIELD considered these types of rheumatism to be properly acidoses. While the alkalinity of the blood was not reduced in a large percentage of cases, the acidosis could be determined by the large amount of ammonia thrown down by the kidneys. In using alkalies it was his practice to give them always on an empty stomach, half an hour before meals. Some years ago he had called attention to the importance of administering the salicylates after meals, when they were of great service, while given at other times they were of little value. The control of the acidosis, in his experience, controlled the effect upon the heart; so that if alkalies were adequately given there would be no cardiac complications.

Dr. V. A. ROBERTSON asked if the so called growing pains were not sometimes due to tuberculosis of the hip or knee joint.

Dr. KERR said that in the series of cases on which his observations were based there were practically none which became tuberculous. There were myalgias due to bone tuberculosis, but such pain could be readily demonstrated to be due to muscular restriction, resulting from holding the joint immovable for an extended period. This was a progressive myalgia. In reply to a question by Dr. I. D. Steinhardt, Dr. Kerr said that he had tried ichthyol and iodine as an application to rheumatic joints, and also these agents in association with mercury, and he had regretted it afterward. Such applications were extremely disagreeable to use, and it was almost impossible to get the ready cooperation of parents when employing them. The more we kept to simple and agreeable measures the more readily could we secure this cooperation.

Letters to the Editor.

ESPERANTO AND ILO.

St. Louis, November 24, 1909.

To the Editor:

That Dr. Talmey should reply to my remarks on Esperanto was foreseen as inevitable. I would have cut out that portion of my paper before the American Medical Editors' Association having reference to the Iloist attack, but that I felt sure that in any event the publication of my paper would call forth a comment from him. As a medical journal is hardly the place in which to carry on a controversy on the respective merits of two forms of language, I will be as brief as possible.

I have studied Ilo. Personally, I do not like it so well as Esperanto, and I think it more complicated instead of more simple; philologically, I do not think that it is on the whole any improvement. But that is not the issue. The point is this: Granting, for the sake of argument, every claim as to the superiority made for Ilo by its adherents, its promulgation to the public is a distinct blow at solidarity. With all due respect to Dr. Talmey, his statements as to the comparative growth of Ilo and Esperanto are not in accord with facts. It is simply a question, then, of conflict of testimony, and did time and space permit, I could give ample evidence of the claim that for every Iloist in the world there are probably a thousand "Conservative Esperantists."

Esperanto has already broken much of the inertia of prejudice against an artificial international language, and is already in possession of a large field, in spite of Dr. Talmey's (let us hope merely misinformed) assertions to the contrary; and since, like the telephone, the utility of a language depends on the numbers using it, a division of forces on any ground other than that of moral principle is a crime. But no question of moral principle is involved in the proposed changes. Any person who is thoroughly conversant with Esperanto can learn the variations of Ilo with a few hours' study. If possessed of reasonable intelligence, he can probably make out the entire sense of an article in Ilo *without any study at all*. I did so myself at the beginning. Esperanto, being a living language, will naturally develop as every living language does; but it will develop as a result of individualism, and not by organized effort. The "reformed spellers" have found out how difficult it is to bring about academic reforms in language by bureaucratic orders. Ask ex-President Roosevelt! If Esperantists at large ever adopt all or any of the changes which Ilo insists on, those changes will become Esperanto. But such adoption will take place only through individuals acting individually. There is nothing to prevent them doing so, save the limitations imposed by the necessity for being understood, as Professor Jespersen, before his defection, pointed out. If I choose to make use of certain alterations of my own devising in the English language, what prevents my doing so, so long as I do not wander so far from the beaten path as to be understandable? If my peculiarities of diction "catch on" they will eventually become English. At present Ilo is a variant

of Esperanto with a very limited but very clamorous following. Those who are already Esperantists are not troubled by the wagging of the Iloist tail so far as they themselves are concerned, because they know that if the variations should ultimately be generally received, they will insensibly be acquired by all alike, without perceptible effort, other than such as attends the constant change in the use of any spoken language; what they do fear is that this clamorous appeal to the public who are not yet Esperantists, in favor of alterations which should be addressed to Esperantists alone, will, by its reiteration *coram populo*, diminish the force in the public eye of what has been already accomplished (and is leaping onward with rapid strides) toward the adoption of an international auxiliary language.

It is admitted that Ilo has some eminent adherents; but Esperanto has retained very many more. Fancy if the eminent adherents of, let us say, vaginal hysterectomy, failing to convince the majority of their colleagues of its superiority over abdominal hysterectomy, were persistently to make their appeal in favor of their preferred method, no longer to their colleagues who differ with them, but to intending medical students, waylaying them at the entrance to the medical school with an appeal to pledge themselves to adopt the vaginal method of operating!

I would say to every intending student: "Learn Esperanto. You will find thousands on thousands of fellow Esperantists in all professions, all walks of life, of all religious, political, or other sympathies, and in all countries, with whom you can correspond. Then, if you like, take up Ilo—it will cost you only a few hours extra to learn it, anyway—and use whichever you find most call for." I am afraid your Ilo will die for lack of sustenance; but if it doesn't, no matter, so long as we have a universal auxiliary tongue—even Ilo—which (with or without variants, as in every other living language) shall become generally understood and used for international relations; thus imposing in the future on every child the necessity of learning only two languages, his own tongue for home use and the auxiliary language for all foreigners of whatever kind.

KENNETH W. MILLICAN.

AN EXAMPLE OF FALSE TEACHING.

NEW YORK, December 2, 1910.

To the Editor:

Some time since I made application to a prominent neurologist of this city—a man who has held several important positions—for treatment for a sexual neurosis. He turned me over to an assistant of his, who he assured me was a fine psychologist. It does not appear necessary here to relate the details of my neurosis or of the treatment. It seems to me, however, that it might be of interest to repeat the following statements made to me by this psychologist:

1. That ninety-nine (I am not sure but that he may have said ninety, though I understood the former figure) per cent. of the normal single young men he knows indulge in regular sexual intercourse.

2. That there are perfectly reliable means for the prevention of infection from illicit sexual intercourse.

3. That, in his opinion, all normal men—and he doubted if even abnormal men should be excepted—are in one of the following conditions: (a) Having sexual relations with women; (b) masturbating; (c) homosexual; (d) sexual perverts of some other description; (e) suffering from a neurosis; (f) in a state of great privation and hardship, as, for example, on a trip to the North Pole (but he considered it doubtful whether even in that case some gratification would not be necessary).

Of course I do not know but that this physician may be right. He ought to be, considering the reputation of the man whom he assists, that he himself reads papers before societies, that he professes to be acquainted with all current medical literature on the subject of sexual troubles, and that he, as he states, is spending eight hours a day talking to patients on sexual matters. If his statements are true, of course no harm is done. But, on the other hand, if they are incorrect, it can readily be seen what an opportunity this man has for doing a vast amount of harm—especially if the statement is true which I recently read in a current periodical that in the United States every year 450,000 young men are infected with venereal disease. However grave my own situation might be, and whatever heroic treatment I might require, it seems to me all the more important I should not be misled as to facts of such extreme importance. I do not write this, however, with the purpose of obtaining medical advice for myself, but only because, as stated above, if the opinions and assertions of this man are incorrect, a number of men are being deceived very much to their hurt.

LAYMAN.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Surgical Diagnosis. By ALEXANDER BRYAN JOHNSON, Ph. B., M. D., Professor of Clinical Surgery in the Columbia University Medical College, Attending Surgeon to the New York Hospital, etc. In Three Volumes. Volume I. Wounds and Their Diseases; Diseases of the Soft Parts and of the Bones; Tumors; Fractures and Dislocations; Syphilis; X Rays; Head and Neck; Thorax and Breast; Abdomen in General; Peritoneum and Injuries of Special Abdominal Organs. With One Colored Plate and Two Hundred and Fifty-seven Illustrations in the Text. Pp. xx-870. Volume II. Injuries and Diseases of the Abdomen and of its Contained Viscera; the Rectum; Injuries and Diseases of the Kidney, Bladder, Prostate, Urethra, Penis, Seminal Vesicles, Scrotum, Testis, and Spermatic Cord. With Three Colored Plates and Two Hundred and Fifty-three Illustrations in the Text. Pp. xvii-777. Volume III. The Spine, the Nerves, the Pelvis, the Extremities, Appendix. With One Colored Plate and Two Hundred and Seventy-four Illustrations in the Text. Pp. xviii-870. New York and London: D. Appleton & Co., 1910. (Price, \$18 a set.)

Professor Johnson has striven to make the subject of surgical diagnosis upon broad lines. He gives us a description of the methods of examination, the relation of science and symptoms, and the pathology of surgical diseases, together with brief histories and

illustrative cases. The author, who for nearly twenty-five years has been connected with three of the largest hospitals of New York, Bellevue, Roosevelt, and the New York, has thus collected a large store of experience. He remarks in his preface that in preparing his work he had constantly in his mind the needs of the practitioner of general medicine. But not only for him, but for the specialist also the book will be of great value.

A perusal of the contents as given in the title of each volume will show how thoroughly the author has mastered his subject. Volumes I and II contain each an index of authors and an index of subjects as found in the volume in question, while in Volume III the indices of authors and of subjects refer to all three volumes. And this general index of authors will show the reader the immense amount of labor spent by the author in compiling his books and the completeness of the work itself. In such a large book it would be impossible to point to separate chapters which would appeal to the reader. Even a general practitioner is more interested in some parts of surgery than in others, and some questions will appeal to him more than others. We can only say here that the author has well succeeded in his undertaking. The typography and general make up of the work are good, the illustrations are excellent, and the volumes are not too bulky to be comfortably handled.

Traitement de la tuberculose pulmonaire. Formes cliniques, cure libre, sanatoriums, œuvres sociales antituberculeuses. Par le Dr. A. GAUSSEL, professeur agrégé à la Faculté de Montpellier. Préface par M. le Professeur GRASSET. 1 volume. Montpellier: Coulet et fils, 1909. Pp. xiv-332. (Price, 5 fr.)

This little volume opens with a graceful and complimentary preface by Professor J. Grasset, of the same university as the author. In the first chapter the various clinical forms of tuberculous disease are described. This description differs little from that which is found in all modern textbooks. In chapter II the author describes the psychological state of the tuberculous and very wisely comes to the conclusion that the character of the patient, his education, occupation, and temperament must be taken into consideration during the treatment. The third chapter, on hygiene, does not offer anything new. The recommendation to ambulant patients never to use anything except a pocket flask as a sputum receptacle is one which will hardly be carried out. The tuberculous may be willing to use a cheap handkerchief or a piece of muslin resembling a handkerchief to receive their infectious sputum, but they will probably always hesitate to use the pocket cuspidor in public.

The author speaks of phthisiophobia in one part of the book and in another part he recommends that the glasses, spoons, and forks of the consumptive should be kept apart from the others. Since the book is also intended for the public, it would have been better to say in plain language: Boil forks and spoons after use and clean all vessels thoroughly with hot water. Such recommendations will be more readily obeyed and do more good than anything which will give the idea that the patient is afflicted with a highly infectious disease, and thus increase phthisiophobia in the household of the consumptive.

In speaking of the physician's duty, he quotes Darenberg's beautiful words: "Le médecin qui veut être utile aux phthisiques doit être tour à tour un maître ou un apôtre, un homme de science ou un homme de cœur, et surtout il ne doit pas réduire son rôle à celui d'une machine à médicamenter" (the physician who wishes to serve his tuberculous patient well should, as occasion arises, be a teacher and an apostle, a man of science and a man of heart, and never descend to the rôle of an automatic dispenser of medicine).

In his chapter on specific medication (IV) he reviews the serotherapy and tuberculin therapy of today, without, however, taking the least notice of the works of English and American investigators. Chapters V and VI treat of dietetics and climato-therapy. The author favors judicious extrafeeding (suralimentation). To this the reviewer is willing to agree, but he cannot subscribe to the author's rather arbitrary division of climatic precepts, wherein he maintains that the seacoast climate is the best for all forms of chronic tuberculous disease, and considers the mountain climates particularly suitable to tuberculous individuals who are young, anæmic, and without fever. These two examples will show that the author's experience in climatology with the tuberculous must be limited.

Chapter VII is devoted to medicinal treatment, including the use of mineral waters, and surgical treatment with the view of improving the general condition of the patient. To some American phthisiotherapeutists the idea of pulmonary opotherapy and splenic opotherapy as a means of cure may be new. The former consists in the administration of the glycerinated extract of the lungs of sheep and the latter in the administration of half a pound of fresh pork spleen every twenty-four hours. It is astonishing to see so valuable a remedy as heroine not at all mentioned in the treatment of cough.

Chapter VIII discusses the management of the various types and complications of pulmonary tuberculous disease. The concluding two chapters treat of sanatoria, special hospitals, dispensaries, and the social aspects of the disease. The last chapter is particularly readable, and, although it contains nothing new, it is hoped that the ardent plea of the author that more institutions for treatment and better social conditions for the masses are essential for prophylaxis will find response by the authorities, statesmen, and philanthropists of France.

Taken as a whole, the book is well worth a careful perusal, particularly by the general practitioner, the medical student, the political economist, and the statesman desiring to familiarize themselves with the subject.

Gegenbaur's Lehrbuch der Anatomie des Menschen. Achte umgearbeitete und vermehrte Auflage. Von M. FÜRBRINGER, o. ö. Professor der Anatomie und Direktor der anatomischen Anstalt der Universität Heidelberg. Erster Band. Mit 276 zum Teil farbigen Textfiguren. Leipzig: Wilhelm Engelmann, 1909. Pp. xxi-689.

Gegenbaur published his textbook of anatomy in 1883, and six more editions were brought out by him, the last in 1898. He died in 1903, and for ten years his book was not revised. Soon after his death his pupil and successor in the chair of anatomy at Heidelberg, Dr. Fürbringer, undertook to prepare a new edition of the work. The first volume

is now before us. The first three editions came out in one volume, while in the four next the subject was treated in two volumes; and Fürbringer has now enlarged the work to three volumes. The price, about five dollars a volume, seems to be rather high for a student. But this is the only criticism we can find. The first volume contains the history of anatomy, the cell theories, ontogeny, histology, and an introduction to anatomy proper. Each chapter is followed by its bibliography, and at the end of the volume is a full index running through nearly sixty pages.

As could only be expected, Fürbringer has made many changes. During the last decade the progress of anatomy has been great, and Fürbringer has been very painstaking to bring the book up to date. The author has also followed a certain typographical style introduced by his predecessor; the book is printed in two types, the larger one contains the a b c of anatomy and is for the beginner, while the detailed matter is printed in smaller type. The typography of the book is good and the cuts are well executed.

The importance of the anatomical school of Heidelberg was laid by Friedrich Tiedemann, who held the chair for over thirty years. When he resigned, in 1849, Henle was appointed professor, to be followed in 1852 by Arnold, who resigned in 1873, when Gegenbaur became professor, who died in 1903. Since then Fürbringer has held the chair. It seems to be the tradition that each professor must contribute some important book to the study of physiology or anatomy. Fürbringer's edition of Gegenbaur's *Anatomy* can be well recommended. It is a thoroughly scientific book, and we hope the two other volumes will follow soon.

Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener u. a. deutschen Kliniken. Von Dr. M. T. SCHNIRER, Redakteur der *klinisch-therapeutischen Wochenschrift*. Würzburg: A. Stuber (C. Kabitzsch), 1910. Pp. 408. (Price, M. 2.)

The sixth edition of Schnirer's handbook of therapeutics has received many additions. The progress in diagnosis and therapeutics has duly been taken into consideration and a chapter on the diagnosis and therapy of tuberculous disease has been added. It is a very handy little book which will appeal not alone to the physician educated in Germany.

Diseases of the Nose, Throat, and Ear. By WILLIAM LINCOLN BALLENGER, M. D. Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, etc. Second Edition, Revised and Enlarged. Illustrated with 491 Engravings and 17 Plates. Philadelphia and New York: Lea & Febiger, 1909.

Ballenger's work, which was favorably reviewed in these columns on its first appearance, about a year ago, now comes to us with numerous additions and revisions. We note many new illustrations, additions to the chapters on functional tests of the organ of hearing, the submucous resection of the nasal septum, operations on the tonsil, diseases of the accessory sinuses, and direct bronchoscopy and laryngoscopy. The subject of equilibrium, its disturbances and its relationship to the acoustic functions, is discussed at length and with remarkable clearness. The diagrammatic representation of the vari-

ous forms of nystagmus elicited by clinical tests is especially valuable.

The Open Air Treatment of Pulmonary Tuberculosis. By F. W. BURTON-FANNING, M. D., Cantab., F. R. C. P. Lond., Physician to the Norfolk and Norwich Hospital, etc. Second Edition. New York: Paul Hoeber, 1909. (Price, \$1.50.)

We are glad to see a second edition of Burton-Fanning's very practical book, which is a useful and accurate guide to the open air treatment of pulmonary tuberculous disease. The author represents the details in the very simplest form and shows that elaborate buildings are not only unnecessary but provide less efficient treatment than more primitive forms of accommodation. The book is divided into ten chapters: Chapter I is an introduction giving the history and development of air treatment. Chapter II contains the ætiology of pulmonary tuberculous disease. In Chapters III and IV we find an account of the temperature, pulse, and respiration. The selection of patients for treatment is described in Chapter V. In Chapters VI, VII, and VIII the author speaks of treatment in febrile and convalescent patients. Chapter IX gives the result of sanatorium treatment and subsequent care of the patient. The author concludes his book with the requisites for the open air treatment in Chapter X. The book can be well recommended.

Australasian Medical Congress. Transactions of the Eighth Session, Held in Melbourne, Victoria, October, 1908. Volume I. Transactions. Conjoint Sectional Meetings. Section of Medicine. Section of Surgery. Volume II. Section of Obstetrics and Gynecology. Section of Public Health. Section of Anatomy—Physiology. Section of Pathology and Bacteriology. Volume III. Section for Disease of Children. Section for Diseases of Eye, Ear, and Throat. Section for Skin and Radiotherapy. Section of Neurology. Section of Military and Naval Hygiene. Sectional Index. Published under the Direction of the Literary Committee. Editor in Chief: ALEX. LEWIS, M. R. C. S., Eng., L. R. C. P. Lond., D. P. H. Lond. Melbourne: J. Kemp, Government Printer, 1909. Pp. xxiii-421, 389, 422.

This is a very complete report of the eighth session of the Australian Medical Congress, at which over 200 members were present. It is a very interesting report, as regards not only the proceedings of the meetings, but also the papers read before the sessions. We are very sorry that space will not permit us to review the essays, many of which are of importance and should find a larger circulation than can be given to them in this publication.

Verhandlungen des Vereins deutscher Laryngologen, 1909. Herausgegeben, im Auftrage des Vereins, vom Schriftführer, Dr. med. FELIX BLUMENFELD—Wiesbaden. Würzburg: Curt Kabitzsch, 1909. Pp. 248.

Besides the usual society reports, this volume contains a number of papers read at the annual meeting of the association of German laryngologists, held at Freiburg on May 30 and 31, 1909. It is a pleasant surprise for us in America to see a report appear so soon after the meeting. We are accustomed to have the reports come out a year or two later. We think the German method is to be preferred and that our societies should follow this example. But we do not understand why the index begins with page 2 while the pages proper start with number 69. This is a very bad printer's error and makes the index absolutely worthless. The list of members gives 407 names.

Blindheit und Blindenwesen. Von Augenarzt Dr. med. HÜBNER in Cassel. Halle a. S.: Carl Marhold, 1909. Pp. 38.

The social, economic, and hygienic aspects of defective vision are beginning to enlist the interest of the ophthalmologist, as they have long since been studied by the educator, the philanthropist, and the legislator. Hübner's little work reflects this activity and gives us a short but stimulating sketch of the various ways in which the blind can be helped and in which blindness can be prevented. For the general practitioner and, in fact, for the layman, as well as the specialist, this treatise will prove of distinct value.

Praktische Anleitung zur Ausführung des biologischen Erweissdifferenzierungsverfahrens mit besonderer Berücksichtigung der forensischen Blut- und Fleischuntersuchung, sowie der Gewinnung präzipitierender Sera. Von Prof. Dr. P. UHLENHUTH und Dr. O. WEIDANZ. Mit 38 Figuren im Text. Jena: Gustav Fischer, 1909. Pp. iv+246. (Price, M. 6.50.)

The precipitin blood test, introduced simultaneously by Wassermann and Uhlenhuth in 1901, has proved extremely fruitful in many directions, and it has long astonished the reviewer that a complete presentation of the test and its applications has not heretofore been published. The volume now compiled by Uhlenhuth and Weidanz leaves nothing to be desired. Written from an enormous personal experience, it contains a mass of practical data of the greatest value to other workers in this interesting but intricate field. In addition to detailed descriptions of the Uhlenhuth-Wassermann precipitin test, and of the Neisser-Sachs deflection of complement test, the book contains some interesting work on the application of the phenomenon of anaphylaxis to the recognition of the origin of albuminous material and exact directions for producing the specific immune sera. An extensive bibliography closes the volume.

MEDICOLITERARY NOTES.

Emmet Carlton King, a capable player, with the gift, rare in his profession, of writing entertainingly, points out in the December *Metropolitan* that *The Great American Drama*, for which literary critics have been waiting, has as a matter of fact been played under their noses for over half a century. *Uncle Tom's Cabin* is the name of this masterpiece which has been played more times, it is safe to say, than any other dozen dramas. Its only rival, far behind in point of popularity, is *The Two Orphans*, which deals with the same perennial commonplace, virtue persecuted and triumphant. Mr. King's article is a valuable as well as interesting addition to American dramatic history.

Everybody's for December is uneven in its fiction. An extraordinary performance, *Heart of the City*, by Eleanor Hallowell Abbott, is filled with the most maddening amateurish affectations of style. A few pages further on, *Fatigue*, by Edith Wyatt, goes to its inevitable dénouement with the simplicity and horror of a Greek drama. Dr. William Hanna Thomson writes of *The Nature of Physical Life*. *The Beast and the Jungle*, by Judge Ben B. Lindsey, is busily sowing the wind; New Yorkers and

Philadelphians will be aghast at the wickedness of the young Rocky Mountain City. No doctor has been implicated yet; we do not crow, merely clear the throat.

Rudyard Kipling has discovered a mine in Puck of Pook's Hill; the sprite appears in the December *Harper's*. Puck is modernized and does not think so poorly of mortals as in Shakespeare's time.

Visceral Surgery in Abstract, by Acheson Stewart, M. D. (Pittsburgh, Medical Abstract Publishing Co., 1909; pp. 176; price \$1) is a pocket manual that should be useful for final students preparing for examination and also to surgeons hurriedly summoned to operate. A list of instruments required for each operation would be a useful addition; otherwise, the little book is surprisingly complete.

Dioscorides, the first really great writer on *Materia Medica*, was a contemporary probably of Pliny. It is significant of the bibliolatry peculiar to our era that his work was accepted as absolutely authoritative for nearly seventeen centuries, no one thinking it worth while to verify his statements by scientific experimentation. It is very remarkable how old books were permitted to restrain thought and investigation. Any earnest freshman coming, only a few centuries ago, into the presence of the professor with a new discovery in therapeutics would have been promptly flattened out, amid the derision of his classmates, by a paragraph from Dioscorides. Traces of this habit of thought unfortunately linger with us; when one of our medical twelve inch guns speaks, it is hard for a smaller calibred weapon, however accurate, to get a hearing.

One painful superstition has come unchallenged till recently down the avenues of time, *viz.*, that of cold baths in winter, which were prescribed for Horace by Antonius Musa, one of the medical advisers of Augustus. The unhappy emperor underwent this torture. Surprised at his survival of the treatment, Augustus granted to Musa the inestimable privilege of wearing a gold ring. Taking their cue, the Senate voted large sums of money to the lucky physician and erected a statue in his honor near that of Æsculapius. They also exempted physicians from the payment of all taxes. This excellent precedent, however, which really merited scrupulous respect, has not prevailed, and, although many physicians are now exempt from taxation, that is due to other and painfully obviously reasons. Poor Horace, in his fifteenth epistle, addressed to Numonius Vala, wrote in shivering hexameters how Musa had forbidden him to go to the comfortable baths at Baia, and made him plunge into cold water in the depth of winter.

The great value of the works of Celsus, an author of the Augustan age, is that they are undoubtedly the outcome of observation at first hand; he was no compiler. In discussing dermatology, venereal disease, lithotomy, couching for cataract—the only operation for that disease known in his time—diet, and regimen, or any branch of the healing art he happened to touch upon, he is singularly accurate, clear, and free from superstition or respect for uncorroborated authority. His discussion and exposi-

tion of the various sects in medicine that had grown up before his time is admirable. A spirit of true philosophy pervades his work, and, taking him altogether, he is perhaps the most distinguished medical writer we have. In writing of treatment he followed Hippocrates, but because he had verified the conclusions of that sage. It has been said that to conclude that he was a mere bookman impeaches the judgment of the critic; just as a Roman writer said that any one who could believe Homer to have been born blind must himself be devoid of every sense.

Horace, in his first epistle, declares that the wise man has no superior except Jove himself, and that he is always supremely content, save when he has a cold in his head.

That easy worm, the purchaser of what Lang calls *éditions de looks*, seems finally to have turned. The market is flooded with books printed on thick paper, not much better than blotting paper, and bound in sheepskin ironed and punctured to imitate morocco. The proofreading is atrocious. The words *édition de luxe* are stamped on the backs. They are selling at an average price of \$1.25 a volume, really not much more than their value at our inflated prices. They offer a chance to acquire an imposing looking library. For actual use, however, and affectionate companionship, we have never seen the equal of the one volume editions of the best English authors published in London and New York about 1850; they are honestly bound, beautifully illustrated, and conscientiously printed and edited. We have seen, so published, Fielding, Smollett, Swift, Beaumont and Fletcher, Massinger and Ford, the Dramatists of the Restoration, Sterne, the *Spectator*, complete, and Ben Jonson. There are others, and all are hard to obtain now.

Epictetus, whose writings have suddenly become very popular, owing to a belief that they inspired the success of some of our local statesmen, has the following to say about criticising others: Does a man bathe quickly? Do not say that he bathes badly; simply that he bathes quickly. Does a man drink much wine? Do not say that he does badly; simply that he drinks much.

In a story called *The Likes of Us*, written by Rudyard Kipling in 1888, before he dreamed he was to be famous, he gives the following glimpse of what the British private soldier thinks of glandular tuberculous disease: "He turned the boy's head sideways, his hand round the nape of the neck, his thumb touching the angle of the jaw. 'What do you call these marks?' They were the white scars of scrofula, with which Shacklock was eaten up. I told Gunner Barnabas this. 'I don't know what that means. I call 'em marder marks and signs. If a man 'as these things on 'im, an' drinks, so long as 'e's drunk, 'e's mad—a looney. But that doesn't 'elp if 'e kills you. Look-a-here an' here!' The marks were thick on the jaw and neck. 'Stubbs 'ad 'em,' said Gunner Barnabas to himself, 'an Lancy 'ad 'em, 'an Duggard 'ad 'em, an' wot's come to them? You've got 'em,' he said, addressing himself to the man he was handling like a roped calf, 'an' sooner or later you'll go with the rest of 'em. But this time I will not do anything—except keepin' you here till the drink's dead in you.'"

Erasistratus, grandson of Aristotle, is credited with a remarkable cure. His patient was Antiochus, son of Seleucus, one of the successors of Alexander, who reigned about 280 B. C. The young gentleman suffered from aphonia, a hectic flush, disturbed vision, cold sweats, irregular pulse, etc. After baffling the usual number of physicians required to make a good story, these symptoms were finally collated into a diagnosis by Erasistratus, who rightly divined that the prince was in love. Unfortunately, the object of his passion was Stratonice, his stepmother. Nothing daunted, Erasistratus went to the king and suggested that he give up the queen to his son, remarking that he was at the end of his therapeutic resources and otherwise emphasizing the necessity of the sacrifice. Seleucus, who was fond of his son, and possibly knew a good deal more than the boy about Stratonice, consented after a decent show of reluctance. Antiochus subsequently reigned with Stratonice as queen and the cure was complete. Unhappily, the average physician will find it, as a rule, impossible to benefit by this therapeutic tip. Only in our ultrarich set, the "shareholding class," as H. G. Wells calls them, might the practitioner find all the interested individuals of both sexes ready and willing to make the necessary changes.

Surgery is chirurgy, or work done by the hand, and the word was applied from earliest days to treatment by either cutting or burning. Up to within comparatively recent times, every operation or dressing was accompanied by prayer or incantation to keep away the influence of evil spirits. That gangrene, sepsis, etc., were due to "invisible powers of the air" was, in the absence of microscopes, a very natural inference and affords an example of the curious way in which the ancients skirted many a great truth without actually stumbling into it. There was the thinnest of veils between the hosts of surgeons and the facts, but it was twenty-three centuries before a Pasteur and a Lister rent it from top to bottom. Now we seem to be encroaching upon the secret of life itself. Ere long perhaps an awestricken experimenter will see the dead protoplasm stir under some radiant stimulus. We are often reminded of the facetious scientist who said that, like a child upon the seashore, he had spent his life picking up shells and failing to find the pea under any of them.

NEW PUBLICATIONS.

Huxley, William H.—A Textbook of Physiology. For Medical Students and Physicians. Third Edition. Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 998. (Price, \$4.)

Ashton, William Easterly—A Textbook on the Practice of Gynecology. For Practitioners and Students. With Ten Hundred and Fifty-eight New Line Drawings Illustrating the Text, by John V. Altender. Fourth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 1090. (Price, \$6.50.)

Grasset et Fédcl—Consultations médicales. Sixième édition, revue et considérablement augmentée. Conforme au Codex de 1908. Montpellier: Coulet et fils; Paris: Masson et cie, 1910. Pp. vii-535.

Asher, Leon—Der physiologische Stoffaustausch zwischen Blut und Gewebe. Jena: Gustav Fischer, 1909. Pp. 105.
Schride, Herm.—Die ortsfremden Epithelgewebe des Menschen. Untersuchungen und Betrachtungen. Mit 21 Figures im Text. Jena: Gustav Fischer, 1909. Pp. 259.

Fifth Annual Report of the Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. Pp. 493.

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Robinson, William J.—Collectanea Jacobi. Collected Essays, Addresses, Scientific Papers, and Miscellaneous Writings of A. Jacobi, M. D., LL. D. In Eight Volumes. New York: The Critic and Guide Company, 1909.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending December 3, 1909:

Place.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Alabama—Montgomery.....	Nov. 13-20.....	12	
Alabama—Birmingham.....	Nov. 13-20.....	1	
District of Columbia—Washington.....	Nov. 13-20.....	1	
Florida—Jacksonville.....	Nov. 13-20.....	1	
Georgia—Macon.....	Nov. 15-28.....	5	
Indiana—Muncie.....	Nov. 13-20.....	2	
Kansas—Kansas City.....	Nov. 13-20.....	3	
North Dakota—Grand Forks Co.....	Sept. 7-30.....	2	
Utah—In 8 counties.....	Oct. 1-31.....	117	1
Washington—Spokane.....	Nov. 6-13.....	1	
Wisconsin—La Crosse.....	Nov. 13-20.....	1	
<i>Smallpox—Insular.</i>			
Philippine Islands—Manila.....	Oct. 9-23.....	2	
<i>Smallpox—Foreign.</i>			
Brazil—Bahia.....	Oct. 15-22.....	15	10
Brazil—Para.....	Oct. 23-30.....	1	3
Brazil—Pernambuco.....	Sept. 1-15.....	1	20
China—Amoy.....	Oct. 9-10.....	1	1
Egypt—Suez.....	Oct. 14-Nov. 4.....	1	2
India—Madras.....	Oct. 9-13.....	82	
Italy—Genoa.....	Nov. 7-14.....	20	7
Mexico—Mexico City.....	Oct. 2-9.....	4	2
Mexico—Mexico City.....	Oct. 16-23.....	1	
Mexico—Monterrey.....	Oct. 14-19.....	1	
Persia—Guilan province.....	Oct. 4.....	Present	
Persia—Mazanderan.....	Oct. 4.....	Present	
Russia—Libau.....	Nov. 1-7.....	2	12
Russia—Riga.....	Oct. 14-19.....	1	18
Russia—Riga.....	Sept. 1-30.....	11	3
Spain—Almeria.....	Oct. 1-31.....	3	
Spain—Madrid.....	Oct. 1-31.....	103	
<i>Yellow Fever—Foreign.</i>			
Brazil—Bahia.....	Oct. 15-22.....	1	1
Brazil—Manaos.....	Oct. 16-23.....	8	7
Brazil—Para.....	Oct. 23-Nov. 6.....	7	6
Ecuador—Guayaquil.....	Oct. 9-23.....	5	2
Venezuela—La Guaira.....	Oct. 27-Nov. 6.....	5	
<i>Cholera—Insular.</i>			
Philippine Islands—Manila.....	Oct. 9-15.....	15	12
Philippine Islands—Manila.....	Oct. 16-23.....	18	18
Philippine Islands—Provinces.....	Oct. 9-15.....	308	240
Philippine Islands—Provinces.....	Oct. 16-23.....	256	202
<i>Cholera—Foreign.</i>			
China—Amoy.....	Oct. 8-23.....	49	
Germany—Andreischken.....	Nov. 7-13.....	2	
Germany—Heydekrug, district.....	Nov. 18.....	1	
India—Bombay.....	Oct. 14-19.....	4	
India—Bombay.....	Oct. 9-15.....	1	
Japan—Kobe.....	Oct. 30-Nov. 6.....	1	1
Japan—Moji.....	Oct. 6-13.....	2	2
Japan—Wakamatsu.....	Oct. 23-30.....	2	2

Place.	Date.	Cases.	Deaths.
<i>Plague—Foreign.</i>			
Brazil—Bahia.....	Oct. 14-22.....	10	6
Brazil—Pernambuco.....	Sept. 1-15.....	1	
China—Amoy.....	Oct. 9-23.....	77	
India—General.....	Oct. 9-16.....	4,815	3,992
India—Bombay.....	Oct. 16-29.....	24	
Japan—Kobe.....	Oct. 16-Nov. 6.....	67	59
Japan—Osaka.....	Nov. 10.....	1	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the fourteen days ending December 8, 1909:

AMESSE, J. W., Passed Assistant Surgeon. Detailed to represent the Service at the Fourth International Sanitary Convention of American Republics, to be held in San José, Costa Rica, December 25, 1909, to January 2, 1910.

BAHRENBURG, R. E., Passed Assistant Surgeon. Granted one day's leave of absence, November 26, 1909, on account of sickness.

BILLINGS, W. C., Passed Assistant Surgeon. Detailed as a member of a Revenue Cutter Service Retiring Board to meet at Arundel Cove, Md., December 9, 1909.

CARTER, H. R., Surgeon. Granted ten days' leave of absence from November 25, 1909, on account of sickness.

COFER, L. E., Assistant Surgeon General. Directed to proceed to Ellis Island and Staten Island, N. Y., upon special temporary duty.

DEERHAKE, WILLIAM A., Acting Assistant Surgeon. Granted two days' leave of absence in November, 1909, under paragraph 210, Service Regulations.

EBERSOLE, R. E., Passed Assistant Surgeon. Leave of absence granted for two months from August 12, 1909, amended to read one month and twenty-nine days from August 25, 1909.

FOSTER, M. H., Passed Assistant Surgeon. Leave of absence granted for fifteen days en route amended to read six days from November 12, 1909.

GWYN, M. K., Passed Assistant Surgeon. Detailed as a member of a Revenue-Cutter Service Retiring Board to meet at Arundel Cove, Md., December 9, 1909.

IRWIN, FAIRFAX, Surgeon. Leave granted for one month from November 22, 1909, amended to read one month from November 26, 1909.

KOLB, LAWRENCE, Assistant Surgeon. Granted one day's leave of absence in November, 1909, under paragraph 191, Service Regulations.

MARSHALL, E. R., Assistant Surgeon. Granted one month's leave of absence from December 10, 1909.

MCCLINTIC, T. B., Passed Assistant Surgeon. Granted six days' leave of absence from November 19, 1909, under paragraph 191.

McMULLEN, JOHN, Passed Assistant Surgeon. Granted seven days' leave of absence from November 23, 1909, under paragraph 191, Service Regulations.

MULLAN, E. H., Passed Assistant Surgeon. Granted one day's leave of absence from November 24, 1909, on account of sickness.

OSBORN, J. L., Pharmacist. Granted thirty days' leave of absence from December 1, 1909.

OTT, C. R., Pharmacist. Granted three days' leave of absence from November 17, 1909, under paragraph 210, Service Regulations.

ROBERTSON, H. MCG., Passed Assistant Surgeon. Granted four days' leave of absence from December 4, 1909.

ROBINSON, D. E., Passed Assistant Surgeon. Granted twenty-eight days' leave of absence from November 9, 1909, on account of sickness.

SCHERESCHESKY, J. W., Passed Assistant Surgeon. Directed to report at the bureau upon special temporary duty.

SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted two days' leave of absence, November 24, and 30, 1909, without pay.

SWEET, ERNEST A., Passed Assistant Surgeon. Granted ten days' leave of absence from November 25, 1909.

VON EDOF, R. H., Passed Assistant Surgeon. Detailed to represent the Service at the Fourth International Sanitary Convention of American Republics, to be held in San José, Costa Rica, December 25, 1909, to January 2, 1910.

- WAKEFIELD, H. C., Acting Assistant Surgeon. Granted seven days' leave of absence from November 22, 1909, under paragraph 210, Service Regulations.
- WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from November 22, 1909, on account of sickness.
- WHITE, J. H., Surgeon. Granted ten days' leave of absence from December 1, 1909.
- WOLFE, J. A., Pharmacist. Granted fourteen days' leave of absence from December 18, 1909.

Board Convened.

Board of medical officers convened to meet at San Francisco, Cal., December 1, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon W. W. King, chairman; Passed Assistant Surgeon F. E. Trotter; Assistant Surgeon R. A. C. Wollenberg, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 11, 1909:

- BAKER, FRANK C., Major, Medical Corps. Granted leave of absence for twenty days.
- BILLINGSLEA, CHARLES C., Captain, Medical Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- BRECHMIN, LOUIS, JR., Captain, Medical Corps. Ordered to the Army General Hospital, San Francisco, Cal., for duty.
- EASTMAN, WILLIAM R., Captain, Medical Corps. Granted leave of absence for two months, when relieved from duty in the Philippines Division.
- HALLOVAN, PAUL S., Captain, Medical Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- HARRIS, H. S. T., Lieutenant Colonel, Medical Reserve Corps. Detached member of examining board at San Francisco, Cal., for duty only during examination of Captains John A. Murtagh, William H. Brooks, and Robert M. Thornburgh, for promotion.
- HOLMES, THOMAS G., First Lieutenant, Medical Reserve Corps. Order for honorable discharge revoked; will proceed at the expiration of his present leave of absence to Fort Sheridan, Ill., for duty.
- KENDALL, WILLIAM P., Major, Medical Corps. Granted fourteen days' leave of absence.
- KENNEDY, JAMES M., Major, Medical Corps. Granted thirty days' leave of absence.
- KOYLE, FRED. T., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- KRESS, CLARENCE C., First Lieutenant, Medical Reserve Corps. Resignation accepted by the President to take effect February 11, 1910.
- LITTLE, WILLIAM L., Captain, Medical Corps. Ordered to Fort Hood, New York, for temporary duty.
- MURTAGH, JOHN A., Captain, Medical Corps. Ordered to Fort Leavenworth, Kansas, for duty.
- MYERS, WILLIAM H., First Lieutenant, Medical Reserve Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- O'CONNOR, ROBERT P., Captain, Medical Corps. Granted leave of absence for one month, with permission to apply for an extension of one month. Ordered to Fort Screven, Ga., for duty.
- PIPES, HENRY F., Captain, Medical Corps. Ordered to New York and Chicago, to study the manufacture and manipulation of the x ray machine.
- PRALEN, JAMES H., Captain, Medical Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.

- RUFFNER, ERNEST L., Captain, Medical Corps. Relieved from duty in the Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- SIEVERS, ROBERT E., First Lieutenant, Medical Reserve Corps. Relieved from duty Philippines Division, March 15, 1910, and directed upon arrival at San Francisco, Cal., to report to the Adjutant General of the Army for further orders.
- SMITH, HERBERT M., Captain, Medical Corps. Ordered to Fort Casey, Wash., for duty.
- STUCKEY, HARRISON W., First Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Adams, R. I., for temporary duty.
- SWEAZEY VERGE E., Captain, Medical Corps. Relieved from treatment at the Walter Reed Army General Hospital, and from further duty at Plattsburg Barracks, N. Y., and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 11, 1909:

- MINTER, J. M., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from August 1, 1909.
- NASH, F. S., Medical Inspector. Commissioned a medical inspector from November 20, 1909.
- PRICE, A. F., Medical Director. Placed on the retired list from December 13, 1909.

Births, Marriages, and Deaths.

Born.

- CLARK.—In Fort Liscum, Alaska, on Friday, November 26th, to Captain John A. Clark, Medical Corps of the United States Army, and Mrs. Clark, a son.
- SMALLWOOD.—In New York, on Saturday, December 4th, to Dr. George Smallwood and Mrs. Smallwood, a daughter.
- Died.
- ACHESON.—In Pittsburgh, Pennsylvania, on Monday, November 29th. Dr. Harry Martyn Acheson, aged fifty-two years.
- BLANCHARD.—In Sherborn, Massachusetts, on Saturday, December 4th. Dr. Albert H. Blanchard, aged eighty-one years.
- BRETZ.—In Brooklyn, New York, on Saturday, December 4th. Dr. George Z. Bretz, aged eighty-five years.
- CARROLL.—In Springfield, Ohio, on Tuesday, December 7th. Dr. Thomas M. Carroll, aged seventy-two years.
- COMSTOCK.—In St. Louis, Missouri, on Wednesday, December 1st, Dr. T. Griswold Comstock, aged eighty-four years.
- HINKLE.—In Columbia, Pennsylvania, on Thursday, December 2d. Dr. Franklin Hinkle, aged eighty-five years.
- LE HOUILLIER.—In Florissant, Missouri, on Thursday, November 25th. Dr. George Le Houillier, aged fifty-one years.
- LEWANDOWSKI.—In New York, on Saturday, December 4th. Dr. H. Paul Lewandowski, aged sixty-one years.
- MAILER.—In Deperre, Wisconsin, on Friday, December 3d. Dr. Andrew C. Mailer, aged fifty-six years.
- MATLACK.—In Duquesne, East End, Pittsburgh, Pennsylvania, on Tuesday, November 30th. Dr. Frank Hickman Matlack, aged sixty-seven years.
- PUSEY.—In Louisville, Kentucky, on Monday, December 6th. Dr. William Brashear Pusey, aged forty-three years.
- REA.—In Verona Lake, New Jersey, on Sunday, December 5th. Dr. William F. Rea, aged forty-two years.
- REISER.—In Reading, Pennsylvania, on Sunday, December 5th. Dr. Frank Reiser, aged seventy-nine years.
- VOIGHT.—In Honesdale, Pennsylvania, on Sunday, November 28th. Dr. George E. Voight, aged twenty-nine years.
- WEBB.—In Baltimore, Maryland, on Friday, December 3d. Dr. Frederick Bostock Webb, aged forty-five years.
- WHITE.—In Noblesville, Indiana, on Friday, December 3d. Dr. T. A. White, aged sixty-one years.

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NEW YORK, DECEMBER 25, 1909.

WHOLE No. 1621.

Lectures and Addresses.

PREPARATION, ENTHUSIASM, AND SELF SACRIFICE.*

By JOSEPH MCFARLAND, M. D.,
Philadelphia.

Professor of Pathology and Bacteriology in the Medico-Chirurgical College.

At the annual meeting of this society, held one year ago, following the dictates of our By-Laws, I read a President's Address containing a synoptical study of the work of the year; showed what had been done, explained why certain desirable improvements in the character of our work were difficult to achieve, and followed the retrospect by a brief statement of our future prospects.

You have honored me with the presidency a second time, for which I desire to express my sincere appreciation, and a second time it becomes my pleasant duty to formally address you at an annual meeting.

It is with satisfaction that I look back upon the work of this year, for in it I see much of profit, and much pleasure. I feel that the Business Committee through whose earnest efforts a succession of programs of surpassing interest was presented to you, and through whom you made the acquaintance of many distinguished guests, deserves the sincere thanks and commendation of the society. I also feel that their successors who are to be elected to-night cannot do better than to find in the faithfulness of their predecessors an example and an inspiration.

The society finds itself impoverished through the loss of two distinguished members, of both of whom it must be said that the grim spectre of Death beckoned them all too soon. Dr. J. Allison Scott and Dr. Leonard Pearson were men who must be missed by all who knew them. In thinking of their lives, their work, their accomplishments, let each of us say: "Lord, keep my memory green."

In reflecting upon my pleasant duty of this evening I could not but feel that there was so little change in the general scope and character of our work that a second review of it, even though in accord with the letter of our law, must be so largely a repetition of what had gone before that it would lose much in the telling. At the risk of censure, therefore, I purpose to adopt an independent course

and endeavor to interest you in a few general thoughts upon certain recent advances in our knowledge of a disease long known, much dreaded, well studied, and well treated—*syphilis*.

It is a large subject, but I intend to be brief; it is a scientific subject, but I hope to be popular; it is a formal subject, but I hope to be familiar. If you look for information that may be new, you will not find it, for I shall merely use certain recent accessions of knowledge as texts for brief moralizing.

Until 1903 knowledge of this disease was purely clinical. It had been attained through painstaking observation made upon patients. How often does one of the present generation stop to ask himself how great was the difficulty of connecting the primary and secondary stages, and how much greater the difficulty of embracing a true conception of their relation to the tertiary stage? It took the great Hunter to arrive at a correct discrimination of the true "primary sore" to which we now give his name. Yet through the careful work of the clinician we learned all the facts of the disease, although its cause eluded us. We learned them so well, that when the specific organism was finally discovered no important change of ideas came about in consequence of that event.

This is truly a monumental example of what the clinician can do! Let the bumptious graduate of modern institutions in which the laboratory is over-emphasized sit up and take notice that there was science—accurate knowledge—in medicine several hundred years ago.

It was, however, impossible to arrive at a full knowledge of the disease for several reasons, and of these I wish to speak briefly.

1. *It was impossible to transmit it to the lower animals.* Now and again some patient investigator having applied the virus taken from a human lesion to a scarified or abraded animal membrane, thought he saw syphilis of a lower animal develop. In this manner a considerable literature accumulated in which, if you ever find time to review it you will find reports of lesions so similar to those of human syphilis as to justify the experimenter in believing them to be such. But the only criterion upon which judgment of success or failure could be based was the clinical course of the experimental disease, and if there was no correspondence between it and that of the disease in man, it must be cast aside. Thus it came about that experiments ceased or were sporadic in occurrence and the conviction grew that the disease was one of human beings only.

If I felt justified in detaining you at the risk of

*President's address read at the annual meeting of the Pathological Society of Philadelphia, October 14, 1909.

wearying you, I would take time to recall to your minds that succession of gradual steps through our thoughts ascended as our knowledge of physiology expanded and we became acquainted with the principles of intoxication and immunity, stimulation and reaction, antibody formation, specific precipitates and cytotoxins, and would pause when I reached the point at which Nuttall gathered the facts together and applied them biologically so that the zoologist came into possession of a new means of determining the "blood-relationship" of animals.

It was upon the appearance of Nuttall's work that Metchnikoff and Roux, who had been making a preliminary survey of the subject, decided that if transmission of those diseases supposed to be peculiar to man was to be successfully accomplished in the lower animals it would be through attention to the principles of blood relationship. Their actual experiments began in 1903 and in that year appeared the first of a series of memoirs entitled *Etudes expérimentales sur la syphilis*.

It was my good fortune to occupy a work place in the service of M. Metchnikoff at the Pasteur Institute, of Paris, during the time that the earlier experiments were in progress, and thus to be in a position to observe and follow them step by step. I had also the opportunity to learn much at first hand and thus to become familiar with the thought, enthusiasm, and personal sacrifice of the two eminent investigators.

My acquaintance with these men was brief, but from them I learned some lessons never to be forgotten and at the risk of your displeasure I shall digress once more from my chief topic, and speak for a moment of those three conditions that above all others contribute to success in scientific work—*preparation, enthusiasm, and self sacrifice*. In doing this I do not address myself to the older men of the society who have learned wisdom by experience and are as able to moralize as any other, but I turn for a moment to the younger contingent whose more recent entrance upon the science of medicine has not yet brought them to a realization of its esoteric mysteries.

It is only through introspection and self criticism that improvement becomes possible, and though it shocks and humiliates us to find ourselves inferior to others, there are times when these depressing emotions may be beneficial in influence. There are doubtless in our country many men who are as good as can be found in any, but to those who have worked in other countries and are familiar with the world's scientific literature there is an overwhelming preponderance of judgment in favor of the Europeans. Why should this be so? It seems to me to depend upon the more thorough preparation, the greater enthusiasm and the more ready self sacrifice of the European scientists.

It is with hesitation that I take upon myself the responsibility of criticizing my compatriots and contemporaries, yet somehow I cannot help feeling that our comparative mediocrity may be referred to the lack of these three essentials to success.

Perhaps it is because we are a young nation; perhaps it is because we have no hereditary caste, the absence of which makes it possible for any one to become an aristocrat who can get money; perhaps

it is because we have little hereditary patience and complaisance; perhaps it is the all pervading atmosphere of hustle and bustle in which we live, or perhaps it is because we have no recognized aristocracy of intellect—I do not know—but it seems to be the vice of Americans to seek to attain to knowledge by short cuts instead of by patient plodding, to enter upon investigation with little enthusiasm as if lacking confidence in themselves, to look upon the work of others with suspicion born of their own sense of shortcoming, and to be unwilling to make personal sacrifices, especially financial sacrifices, that the ideal may be realized. Those fortunate enough to escape these vices stand out preeminently above their fellows and their names and their works occur to you.

If the transmission of syphilis to the lower animals had met with signal failure, and if such failure depended upon inattention to the blood-relationship of man and the animals employed, Metchnikoff and Roux determined to overcome this error by a series of experiments made upon animals whose blood-relationship to man could be demonstrated, that is, the anthropoid apes. Here was the underlying scientific principle upon which the experiments were based.

But anthropoid apes were difficult to obtain and could be secured only at great cost and when these grave savants sat down to consider the cost and the sources from which the money was to come, we find their enthusiasm and self sacrificing disposition well exemplified by their determination to devote the proceeds of two large prizes awarded, one to each of them, for scientific work of superior excellence the year before.

The first experiment was made upon a female chimpanzee whose genitalia were scarified and a drop of serum expressed from a human chancre rubbed in. In twenty days a transparent oval vesicle surrounded by a red areola made its appearance. It soon flattened and became transformed to a slightly elevated and much indurated erosion. A few days later a marked enlargement of the inguinal lymph nodes of that side of the groin became apparent. The enlarged nodes were not tender and were movable beneath the skin. At this time the animal was presented to the Academy of Medicine, examined by all of the members, among whom were Fournier, Castel, Hollochau, Marc Sée, all of whom pronounced the lesion to be a true indurated chancre.

Just one month after the appearance of the chancre—fifty-six days after the first inoculation—disseminated papules appeared upon the anterior and posterior surfaces of the thorax, increasing in number during the following fifteen days. The papules were dry and scaly, rounded in shape, of various sizes, and surrounded by a reddened zone. The skin covering them softened and a crust gradually formed and their resemblance to the secondary eruptions in man became more and more distinct. In about three months the animal showed much malaise; its health was evidently much impaired. Forty-nine days after the appearance of the secondaries the animal died of acute pneumococcus infection and the experiment came to an untimely termination.

This was the beginning of a notable series of ani-

mal inoculations continued by Metchnikoff and Roux and many others, so that especially in the East where orang outangs were available much experimentation of confirmatory character was performed. From the chimpanzee and orang outang it was found that the virus could be successfully implanted to the macacus, and from this to lower monkeys, but the farther from blood relationship with man the experiment animal was removed, the less characteristic and less severe were the results of the inoculation.

It is a pleasure to recall the importance of that first chimpanzee. Never was a monkey so distinguished by the attentions of scientific men! How vividly I recall old "Père Metch," tall, slightly stooped, his long dark hair slightly streaked with silver, falling about his shoulders, his penetrating eyes peering through steel rimmed spectacles, and his bearded face full of quiet thoughtfulness or burning animation as he returned from his daily visit to his monkey.

Sometimes there would be with him a French exquisite, dressed à la mode, with a shiny top hat upon his silver head and the corners of his white mustache tightly twisted into points, who talked animatedly, gesticulating with his hands in typical French fashion—probably Fournier, at least so I was told.

In these early experiments you may have remarked that though it was in the laboratory that the means of success were evolved, it was the clinician who was called upon to make the diagnosis and to confirm the success of the experiment—another triumph of clinical observation. But this relationship of the clinician to the laboratory was soon to be reversed through the new and more important discovery of the specific organism. Of course Metchnikoff and Roux hoped—I think I may say expected—that this should be their next achievement, but it was reserved for another and therein they sustained a bitter disappointment, though let it be said to their credit that they were among the very first to confirm it when it came about.

2. It was impossible to recognize the specific cause of the disease. It would indeed be a wearisome hour for you should I take your time to review those attempts at finding the cause of syphilis that spread themselves over many pages and through many years of bacteriological literature. The few that received more than momentary attention—Lustgarten, van Niessen, and Siegel—are now doomed to early oblivion. Like many other worthy men, they did their best, but were mistaken.

The honor fell to a young German—Fritz Schaudinn, who with his associate Hoffmann, published his observations in the *Deutsche medizinische Wochenschrift*, May 4, 1905. By the use of the Giemsa method of staining they had been able to find in serum expressed from venereal sores, two forms of spiral organisms, one very common in occurrence, the larger of the two, easily stained and quickly recognized, probably already described by others, but to which they applied the name *Spirochæta refringens*; the other smaller, more tightly coiled, scarcely stained though similarly exposed to the reagents, and found only in clinical syphilis the *Spirochæta pallida*. This their many observations

led them to believe was the true specific organism. The announcement received enthusiastic attention and was speedily confirmed in all parts of the world, one of the most important confirmations coming from Metchnikoff and Roux who found it in the lesions of their experiment animals.

An enormous literature quickly appeared, the earlier part of which was ably reviewed before this society by Dr. Rosenberger.

At first there were doubts in the minds of some and misinterpretations in the thoughts of others, but time has eliminated them all and at present we hear nothing but confirmatory contributions upon the ætiological significance of the organism. The improvement in the technique of staining and the introduction of the silver impregnation method of staining the organism in the tissues by Levaditi and Manonilian made possible the pursuit of the organism as it passed from the seat of original inoculation to deeper and deeper structures and through the placenta to the foetus where it occurs in enormous numbers so that we are now able to state with positiveness that the occurrence and distribution of this organism shows a perfect correspondence with the clinical course and progress of the disease.

Thus it is found in the serum expressed from the chancre; it is found in the juice extracted from the enlarged lymphatics, and in sections made of these lesions is found both in and between the cells of the tissues. At the time of the appearance of the secondaries it has been found in the circulating blood. It is found in blood expressed from the roseola of the secondary stage, and in sections of all of the secondary lesions. It is found in large numbers in the syphilitic placenta, and in enormous numbers in the tissues of the congenitally syphilitic foetus and in the lesions of congenitally syphilitic infants. It is found in all of the lesions of syphilitic apes and monkeys and in the corneal ulcerations of experimentally infected rabbits. It is extremely rare in the lesions of tertiary syphilis, both the sclerosis and the gumma.

With this accession of knowledge came about the already mentioned reversal of the relationship of the clinician and pathologist. At first the laboratory man was obliged to appeal to the clinician to confirm the results of his experiments; now the clinician is compelled to seek the aid of the laboratory man to sustain his doubtful diagnosis.

The criterion of the disease is changed. It is no longer a combination or succession of symptoms that establishes the diagnosis, for this is possible only when they are sufficiently characteristic; it is the presence of the *Treponema pallidum* that proves the case. This criterion applies equally well to human and comparative cases. When one inoculates a lower animal and produces a lesion the question of the syphilitic or nonsyphilitic character of the lesions is no longer determined by patiently waiting for results that may not come or by clinical correspondence with the disease in man, but is immediately determined by an examination of some serum from the lesion with a dark field illuminator or by staining and the demonstration of the specific organism.

By such means the syphilitic nature of the lesions in apes and monkeys has been established; the cor-

neal ulcerations of rabbits likewise established, but the vague lesions of swine, guinea pigs, mice, rats, and frogs rejected.

3. *There is a period in the course of the disease when there are no clinical manifestations and during which the specific organism cannot be found.* This circumstance was a source of constant embarrassment to the clinician who had no means of determining the state of recovery, partial recovery of mere latency of disease, that followed his course of treatment. Patients thinking themselves cured gradually fell into a distressing condition through the appearance of the tertiary symptoms, and on all sides there were cases of well recognized disease the origin of which is unknown though the frequency with which syphilis appears in their medical history is so suspicious a circumstance that it has gradually been accepted as their cause. No clinical knowledge enabled one to foretell what would happen to the patient after the lapse of this intermediate period, nor could the discovery of the microorganism be appealed to since it had disappeared not to reappear in the future lesions of the tertiary stage.

And now comes the Wassermann-Neisser-Bruck discovery of a method of recognizing the disease during this particular stage. It is a refinement of physiological chemistry probably destined to play a conspicuous rôle in future medical diagnosis.

Although the original contribution appeared no longer ago than 1906—(Eine serodiagnostische Reaktion by Syphilis, *Deutsche medizinische Wochenschrift*, 1906, No. 19)—a large literature has already appeared and the method has undergone simplification and improvement.

The test appears to be extremely complicated to those who have not used it, because a number of reagents must be employed each of which is difficult to obtain. When all of these are readily available the test itself is simple. This means that certain men must devote themselves to this particular work, have the necessary materials at hand, acquire the requisite skill, be ready at any time to make the test and because of their skill and experience be prepared to furnish a reliable judgment upon the reaction obtained.

The test, as you know, was originally made by combining an extract of a congenitally syphilitic liver, the previously heated cerebrospinal fluid of the patient under examination and the fresh, unheated serum of a guinea pig. This combination was supposed to embrace: 1. Microorganismal substance in the liver extract; 2, specific amboceptors in the cerebrospinal fluid; and, 3, complement in the normal guinea pig serum. If the patient was normal and the heated cerebrospinal fluid contained no syphilitic amboceptors no reaction took place and the complement in the guinea pig's serum remained free so that when the mixture received the further addition of some washed blood corpuscles and some hæmolytic serum with a specific affinity for those corpuscles, the free complement, the hæmolytic amboceptors, and the corpuscles immediately combined with resulting hæmolytic. If, however, the patient was syphilitic and the heated cerebrospinal fluid contained specific syphilitic amboceptors, so soon as the liver extract, the heated cerebrospinal fluid, and

the normal unheated guinea pig's serum were brought together, the complement attached itself to the amboceptors and they to the microorganismal substance, the complement became anchored, no free complement remained in the mixture, and when blood corpuscles and their specific hæmolytic serum were subsequently added, there was no hæmolytic because the complement was missing.

This was the original theory and practice. It soon became modified by the substitution of the serum for the cerebrospinal fluid of the patient to be examined, by the employment of an alcoholic extract instead of a fresh liver extract, and later was further modified by the use of normal liver extract or of lecithin instead of the syphilitic liver as first suggested.

But you are thinking that this last modification undermines the scientific foundation of the theory, for it was based upon the assumption that the congenitally syphilitic liver contained microorganismal substance by whose presence in the primary mixture the specific syphilitic amboceptors and the complement became anchored. This is, indeed, true. The theory was wrong, but the practice is right. We mistook the exact nature of the reaction, but it is a reaction just the same and one accurate in the hands of different experimenters within a margin of from five to ten per cent.

As modified the test has become a comparatively simple one in the hands of a skilled workman, and enough investigation has been performed to give us approximately 90 per cent. of accuracy in determining the condition of a patient concerning whom clinical examination and observation can reveal nothing. The sole reliance of the clinician in the past was the so called "therapeutic test," not so bad, perhaps, when it succeeded, but most unpleasant in its consequences when it failed.

We are thus in a position to acquire accurate information of the condition of a patient the nature of whose past illness may be unknown to himself; of a patient who may wilfully deceive his medical adviser, and of those patients whose past history points to syphilis as the source of their present troubles—the ataxics and paralytics that fill our hospitals.

It is too soon for us to know how far reaching may be the influence of these recent discoveries but it seems justifiable to believe that when they make possible an immediate and certain diagnosis, when they enable one to determine the latency of the inactive disease, they must be destined to occasion an enormous improvement in the thoroughness with which the disease will be treated and hence the alleviation of much of the suffering that obtains at the present time.

4. *The microorganisms cannot be cultivated artificially so that immunity experiments in the nature of therapeutic serums and bacteriovaccines are at present impossible.* This is the problem the future solution of which must bring distinction to whosoever achieves it. Who shall it be?

I may not close this without dwelling upon the reciprocal relations of the clinician and the biologist. The former has spent centuries in acquiring knowledge that the latter is perfecting; the latter is working out exact methods whose application must in the future perfect the work of the former. Neither can

satisfactorily perform the work of the other, neither can do the work of both for the fields are too large. Monuments to the glory of clinicians cover the pages of medical history. The future opens its doors to the laboratory man to whom her laurels must be awarded.

Some of us harp continually upon that string which declares that the future hope of medicine is centered about the laboratories, some sound the note of caution and sing the undying fame of the clinical work of all ages; it were better to learn the harmonious sounds of chords where the clinic and the laboratory may be combined in purpose.

Of the three additions to knowledge discussed in this rambling discourse each has come from a laboratory and been the work of laboratory men; each can be definitely traced to antecedent work done in the laboratories by laboratory men. I am sure you must agree with me that the much needed discovery of methods of isolating and cultivating the *Treponema pallidum* by which will be made possible further experiments in immunization and specific therapy can only be expected to come from a laboratory and to be the work of a laboratory man.

442 WEST STAFFORD STREET, GERMANTOWN.

Original Communications.

A PERSONAL EXPERIENCE WITH THE METHOD OF CÆSAREAN SECTION USED IN THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK.*

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The present technique of Cæsarean section is in process of evolution from that of general abdominal surgery. Its principles are established by daily experience; its details are as yet to some extent experimental. The operation is from the nature of things not entirely restricted to the professional surgeon, but is within the possibilities of the general practitioner. In place of high forceps extraction and those other methods of delivery, so hazardous to both mother and child, Cæsarean section by the abdominal route is sure to be widely adopted in the near future. Like the surgeon of twenty-five years ago, the modern obstetrician is ready to accept any plan which best promises success, but he must be assured first that the proposed innovation has valid grounds for his rejecting the old and entertaining the new.

My personal experience with Cæsarean section is restricted to the abdominal operation and limited to eleven cases. Of these cases two must be omitted from the present discussion. One of these was made twenty-five years ago, in preantiseptic times, under most unfavorable conditions, and upon a dying woman. The other was made post mortem, and

therefore not applicable to the present purpose. The nine others have been made within the last five years, and the earlier five of these nine according to the technique laid down in the textbooks for the conventional operation. But the last three Cæsarean operations, one in July, one in August, and one in October of the present year, differed in certain details of the technique from that followed in the previous operations. These details were adopted on the basis of a report of a series of Cæsarean sections made by Dr. Davis, attending surgeon to the Lying in Hospital of the City of New York (*Bulletin of the Lying-in Hospital of the City of New York*, 1905), to whom I wish to acknowledge the credit of their suggestion. Contrasting the technique in my earlier sections, and the puerperium in these patients, with similar details in my last three sections, the differences seem to be decidedly in favor of the latter. The peculiarities of the New York method, to which I invite your attention, are the site of the abdominal incision, the uterine sutures and plan of suturing, and certain details in the conduct of the puerperium. The only excuse for the present paper, based upon such limited data, is the wish to add to the growing literature upon the operation, out of which is to evolve the final ideal.

The clinical history of my last three Cæsarean sections is condensed as follows: All were young, white, healthy, and hard working housewives, two were secundiparæ and one an octopara, and all had normal pregnancies. In both secundiparæ the first child was stillborn after long, hard traction with forceps, and weighed nine and nine and a half pounds respectively. Both women had bad tears of the outlet and slow convalescence. The third woman needed artificial delivery for all of her seven previous children, of whom four were stillborn, and all of these children were large, weighing from ten to twelve pounds. In each of the women there was a projecting promontory, narrowing the conjugata vera to three and a quarter or three and a half inches. All had been in active labor for several hours, at the end of which there was no engagement, and in one woman the membranes had broken with the first pains. The genitals were carefully washed before my first, and only, digital examination, made with clean finger, and this examination was confirmed by the consultant by also a single vaginal examination. There was no other manipulation of the vagina until after the final sterilization. They were then taken to the Maine General Hospital and prepared at once for section. While etherized, the second woman was given a tentative trial of forceps extraction, at the urgent solicitation of the consultant, but without success. All elected the operation.

The technique in these last three sections was practically that described by Davis in the *Bulletin* (before mentioned), and is briefly as follows: Vagina sterilized and packed with iodoform gauze. Usual toilet of the abdomen, particular care being given to the epigastric region. Trendelenburg position. Abdominal incision from about two inches below the sternum to the umbilicus, five inches long. Uterus examined *in situ* for a possible twisting on its long axis. (It was found to be rotated to the left in the second woman, and corrected.) Abdom-

*Presented before the Lister Club, Portland, Me., October 28, 1909.

inal cavity defended by a coffer dam of packing off pieces surrounding the uterus. Uterus opened in the cavity. (In the first patient it was uncontracted, the membranes not having broken, and the wall was about a quarter of an inch thick. In the second patient, the membranes having ruptured with the first pains, the uterus was firmly contracted and the wall more than an inch thick. In the third woman the membranes were ruptured after sterilization, and there was partial contraction.) Uterine incision begun with scalpel just below the fundus in median line, and lengthened with scissors downward a little longer than the abdominal incision. Placenta under the incision in all the women. Hand passed around its edge, membranes torn open in the first patient, podalic extraction of the child, placenta then grasped with the hand and delivered together with the membranes. Two fingers passed down through cervix to insure its dilatation. Moderate hæmorrhage during extraction. Strong lateral pressure upon the abdomen maintained by assistant during delivery and until the deep sutures were tied. While delivering a third assistant injected into the thigh a drachm of ergotole. Uterine incision closed by six to eight, through and through, interrupted sutures of chromic gut, No. 3, and the intervening gaps by superficial sutures of chromic gut, No. 1. Finally, in two of the women, the uterine peritonæum was folded across the sutures by a running Lambert stitch of No. 0 gut. Exposed uterine surface wiped dry with gauze, coffer dam removed, and abdomen closed in usual manner, layer by layer, with running stitch of fine and coarse gut, reinforced by silk worm gut. Usual occlusion dressing and adhesive straps. Ether anaesthesia, no shock, and patients sent to ward in as good condition as after a normal labor. The children were strong and lusty, and weighed eight pounds, nine pounds, and nine and a half pounds respectively.

The puerperium of these three women was absolutely uneventful; in one the temperature never exceeded 99.5° F., and in the other two there was a single record of 100° F. The bowels reacted freely to the usual salines during the second or third day, contrasting in this respect favorably with the apathy of the intestines in the earlier five patients, which yielded only after active medication and many enemata. Lactation was normal in two of the women; in the third it failed completely, and artificial feeding of this child was needed from the first. After the first day *post operationem*, all the women moved in bed as they wished, were out of bed in the reclining chair on the fourteenth day, and were sent home on the sixteenth or seventeenth day. Housework was not permitted for the full month.

The technique of abdominal Cesarean section, as thus illustrated, is that used in some two hundred and fifty operations at the Lying-in Hospital of New York. Awaiting a title it may be called simply the method of that institution. Dr. Davis says, in a personal letter with which he favored me, that "it is practically the exclusive method in use in an attending staff of twelve men." It might be further styled the "high" operation in contrast with the medium or low operation (the adjective referring of course to the situation of the abdominal incision), provided it was understood that such a title

applied only to the method favored by this particular institution. My own knowledge of this "high" method, prior to using it, was derived from the *Bulletin*, previously mentioned. As therein explained, it seemed to me to have such manifest advantages over the ordinary technique for the classical operation, which I had formerly used, that I decided to give it a personal trial. The results have been so favorable that I venture to publish my limited experience with it, hoping that other obstetricians may be induced thereby to try it for themselves.

I. The distinguishing feature of the "high" operation is the site of the abdominal incision, which is essentially at variance from that directed in the leading American textbooks on obstetrics. Since each of these books was written by one who is an operator as well as author, it is probable that the technique advised in each book is that used by its particular author. Thus, Jewett (*Practice of Obstetrics*) prefers an abdominal incision from an inch and a half above the umbilicus to an inch and a half above the symphysis; he opens the uterus from the fundus to the retraction ring, and empties the uterus *in situ*. Williams, (*Obstetrics*) makes the incision from sixteen to eighteen centimetres long with the umbilicus at the centre of the opening; the uterus is opened by an incision sixteen to eighteen centimetres long and evacuated *in situ* unless infected, when it is emptied outside the abdomen. Edgar (*Practice of Obstetrics*) directs an incision from five to six inches long, beginning just below the umbilicus, and it is immaterial whether the uterus is emptied inside or outside the abdomen. Hirst (*Textbook of Obstetrics*) advises an incision from two inches above the umbilicus to just above the symphysis, and delivers the uterus before evacuation. Reynolds (*Practical Midwifery*) says incise from about the umbilicus to within an inch and a half of the pubis, making an opening, if at term, fully seven inches long. If this opening is not large enough, extend it upwards as necessary, cutting about an inch on the side of the linea alba. Webster (*Obstetrics*) recommends a mesial incision above the pubis, its length depending upon whether the uterus is to be delivered, from five to eight inches long. He favors a long incision in order to lift the uterus through it. King (*Manual of Obstetrics*) directs that the abdominal incision should end an inch and a half above the pubis, its length depending upon the question whether the uterus is to be emptied inside or outside the abdomen. The short incision begins one inch below, the long incision one inch and a half above the umbilicus.

Davis says (*Bulletin* referred to above) "the abdominal cavity is opened by a medium incision twelve centimetres (five and a half inches) long, extending from above downward to the umbilicus." At no period of the operation, neither for incision, emptying, nor suturing, is the uterus removed from the cavity. By means of the coffer dam, which encircles the uterus below the edges of the abdominal wound, and by the pressure of the abdominal wall against the womb by the assistant's hands, blood and amniotic fluid are shut out of the abdominal cavity. There is therefore no necessity for cleansing that cavity after the operation by sponging, nor for any handling of the viscera dur-

ing it. These three details—opening, emptying, and suturing the uterus *in situ*, and no manipulation of the peritonæum or intestines—are important factors in preventing that shock to the patient, which accompanies the dragging of the full uterus through the abdominal incision together with the associated handling of the peritoneal cavity. In advocating the high incision Davis further says that he would not restrict the wound within narrow limits. "It should be large enough for free delivery, but those mentioned have been found large enough, the abdominal tissue stretching readily to accommodate itself to the demands made upon it, much after the manner of the tissues of the vulvar outlet.—The high abdominal wound is probably subjected to less pressure than one in the more convex and dependent part of the abdomen, and it has better reinforcement from the recti, whose edges at this point are nearer together in the parous woman, and whose supports greater as the upper attachments of these muscles are approached."

Continuing his argument for the high incision he says again, "the long abdominal wound is open to the objections that it takes a longer time to close it, more foreign matter in the form of suture must be introduced, it allows readier chance for manipulations and exposure to the open air and possible infection of the abdominal viscera. The danger of ventral hernia must be, in a measure, in direct proportion to the length of the abdominal wound."

In support of the practice of emptying the uterus while inside the abdominal cavity, Davis's words are so clear and sensible that I use them rather than my own. He says, "another condition which was very apparent in the operation just mentioned" (evacuation before emptying), "and which was noticed again and again in subsequent Cæsaean operations was the decided evidence of shock, which was synchronous with the delivery of the uterus from the abdominal cavity. The reason of this must be evident if one considers the forcible and rapid manipulations of the uterus and other abdominal viscera called for in raising a uterus, distended by a full term child and possibly much liquor amnii, through the abdominal wound; the sudden change in intra-abdominal pressure and the exposure of considerable areas of peritoneal surface to a decidedly lower temperature." In all of my earlier Cæsaean sections, in all of which the uterus was emptied outside the abdominal cavity, paralysis of the intestines was a very annoying and painful complication of the puerperium. This disturbance of peristalsis was conspicuously absent in the three last patients in whom the uterus was emptied *in situ*. It is a common observation of abdominal surgeons that the degree of intestinal apathy after laparotomies corresponds to the amount of the manipulation of the viscera.

It may be said, in passing, that the operator, who makes for the first time the high incision of this method, will be surprised at the thinness of the abdominal wall above the umbilicus, compared with its much greater thickness below it. One has only to remember his anatomy to understand that the wall in the median line above the umbilicus is formed of skin and fascia only, but below it the wall includes, besides fascia, the recti and more or

less fat. For anatomical reasons, therefore, the high incision should be made carefully, stroke by stroke, instead of by a dashing sweep of the scalpel, otherwise the first cut is likely to go directly through the fascia into the uterus or wound a possibly overlying loop of intestine. The latter unfortunate accident has been reported several times. "Playing to the galleries" is no part of Cæsaean section.

When the uterus is uncovered it will be found either full of liquor amnii, with the uncontracted muscle about one quarter of an inch thick, or, if the liquor amnii has previously escaped, with the muscle more or less contracted and an inch or more in thickness. The degree of contraction indicates the depth of the incision necessary to penetrate the cavity. It is good surgery to puncture the wall with the scalpel, then to pass into the cavity one or more fingers, and upon these as a director to complete the incision with the scissors. The fingers protect the child during the cutting, and it is claimed that the scissors cause less hæmorrhage than the knife.

The amount of bleeding accompanying the incising depends largely upon the degree of contraction. Even if the muscle is flaccid when opened, contractions ordinarily begin as soon as the child is delivered, just as follows natural delivery. But if uterine activity is delayed, bleeding from the cut surfaces may be checked temporarily by pressing them together with the hand until the sutures can be placed. Experience seems to show that the main source of the bleeding is the cut vessels in the wound and not the placental site. Sutures control the former and contractions the latter. If then the hæmorrhage is mainly from within the cavity it may be checked by direct manual pressure—squeezing the womb together with the hand—by stimulating activity with towels wet with hot normal salt solution pressed upon the exposed surface, or by an intrauterine gauze pack. One end of the pack should be passed down through the cervix, to aid in its removal. The pack should not be used except as a last resort, for being a foreign body it interferes with normal contractions, and may make trouble by getting caught in the sutures.

Since it is evident that the immediate agent for arresting the hæmorrhage must be the sutures and good contractions, most recent operators reject the tourniquet of rubber tubing, formerly thought so essential, around the cervix or its alternative, constriction by the assistant's hands. Experience shows that either method of hæmostasis seems to invite inertia, by cutting off that amount of blood supply to the muscle requisite for its physiological action. My personal observation thus far with Cæsaean section leads me to discard all temporizing measures for hæmostasis, as a waste of precious time, and to rely upon speedy suturing for that effect.

2. In a recent article on Cervical Cæsaean Section (Lewis, *American Journal of Obstetrics*, October, 1909) the author says: "The main danger (in the classical Cæsaean section), aside from hæmorrhage, is peritonitis. This is not so much because the peritonæum cannot take care of a considerable number of germs as because of the entrance into the abdominal cavity of nutrient material in the shape of amniotic fluid, blood, and the like from the contents of the parturient uterus. . . .

Throughout the history of the operation the main point has always been to prevent uterine contents from entering the peritoneal cavity. The sutures in the uterus serve as the defense against contamination from its cavity just as do the sutures in intestinal surgery. . . . What have brought the mortality of the Cæsarean section to its present low mark are early operation, speedy technique, and careful uterine suturing."

Examination of the uterine surface during secondary Cæsarean sections seems to show, that its union after incision does not depend, *per se*, either upon the material of the suture or the method of suturing. The moot points are: Shall the wound be closed layer by layer, by tier sutures, or *en masse*, by through and through sutures. Equally good operators favor the one method to the exclusion of the other. All agree that, whatever material is selected, it must be sterile, must resist absorption until thorough union, and there must be no dead spaces left within the circle of the loop. If absorbable material is preferred then the commercial iodized or chromic catgut will be satisfactory; No. 0 or 1 for layer sutures and No. 3 or 4 for deep sutures. Either of these strands will hold for ten days or more, that is, long enough for good union, and longer than this any suture is useless. For non-absorbable sutures the choice may be linen (celluloid or plain), ordinary surgical silk, or the common domestic sewing silk.

Accepting all the statements made for the linen or silk it is undeniable that its usefulness ends when union has taken place, and then, unlike catgut, it is a foreign body, liable to require a second operation for its removal. In my earlier sections I used celluloid linen or silk for the uterine sutures, but in the three last catgut only. As a matter of fact, however, I do not believe that the material of this particular suture is of inherent importance, provided that it has the essentials of sterility and binding strength for at least ten days.

Now of the plan of closing the uterine incision. Most operators in America agree upon an interrupted rather than a continuous suture, some prefer to close the wound layer by layer, and others are satisfied with relatively few deep stitches. The tier method was popularized in this country by our mutual friend, that brilliant surgeon, the late Palmer Dudley, of New York. Its statements for adoption are that smaller sized gut can be used, that the opposing surfaces can be united more thoroughly, and that no dead spaces are left between them. The main practical objection to this method, so far as I have found it, seems to be that it requires more time to do well than it is worth, and every additional minute spent in mere suturing adds by just so much to the amount of hæmorrhage. As has been said, since the only positive means of stopping the bleeding vessels in the wound is the sutures, it is evident that speedy suturing is of the utmost importance. With my limited experience the deep, interrupted suture of large catgut appears to satisfy every essential; it is the quicker method, hæmorrhage is checked sooner than by the layer method, and coaptation is all that can be expected.

Apropos of the selection of a single, large suture for the uterine incision, attention is called to a re-

cent circular of Van Horn and Sawtell, which says: "We feel warranted, therefore, in recommending ten- or twenty-day No. 1 for suturing *muscle*, and if this should appear insufficiently strong, we would suggest that it be doubled rather than that a heavier size were used, our own experiments having proved that the tissues will absorb two fine strands more readily than a single heavy one."

As a little matter of personal experience I have noticed that, when the uterus is firmly contracted, the ordinary half curved needle is too short to include the entire thickness of the cut edges with a single sweep of the needle. It requires two insertions of the short needle—from without in and from within out—to complete the loop. This double insertion consumes valuable time and delays hæmostasis, therefore a longer needle would be an advantage.

Most of the bleeding from the incision seems to come from vessels midway in the body of the muscle and near the centre of the length of the cut. The first suture can be placed at any one of these points, one quarter of an inch from the cut edge, should include the entire thickness of the muscle, emerge at the same distance on the opposite edge, and be tied at once. Then the other sutures follow, about a half an inch apart, from six to eight in all. Each suture must be tied tighter than ordinarily to provide for the subsequent shrinking of the muscle in contracting, otherwise the first will be found to be loose even before the last are ready to be tied. Most operators advise that the mucous surface should not be included with the muscle in the suture, but Webster (*Obstetrics*) says that such inclusion is of no consequence unless the membrane is infected. After completing the deep sutures, superficial interrupted stitches of No. 1 catgut close the gap between the former, and finally the uterine peritonæum is folded across the entire length of the seam by a Lembert stitch of fine catgut.

This final Lembert stitch is distinctly serviceable in preventing adhesions between the uterine wound and the overlying tissues, the abdominal peritonæum, the omentum, or the intestines. In my last case, while hurrying to stop the free bleeding from the uterine incision, the needle carrying the deep sutures was inserted and withdrawn at least half an inch from the cut edges. After these sutures were tied, it was found impossible to cover them with the Lembert, because the peritonæum would not stretch across them. If then it is intended to use the peritoneal covering, the deep sutures must be placed not more than a quarter of an inch from the edges of the incision.

Upon the matter of adhesions between the uterus and the opposing tissues following the high incision, I have no personal knowledge. So far as I can learn from reports of secondary sections, such adhesions are to be expected after the long medium or low abdominal method. In answering this question Dr. Davis writes me that "the very large majority have few or no adhesions," with the "high" method, and "the uterus resumes its natural place in the pelvis, is freely moveable, and well involuted."

3. Finally, as one of the advantages of the high over the medium or low incision, the period of confinement in bed during the puerperium is very much

shortened when the former method is used. In the letter of Dr. Davis, he says: "To favor drainage and the sinking of the uterus I let my Cæsareans sit in a reclining chair on the eighth day, post partum, and I favor their rather early walking about. I am doing away with the very tight abdominal binder, which, I believe, tends to hold the abdominal walls and viscera in closer contact with the uterine wound. The tight abdominal binder is a relic of treatment for the long, low abdominal incision." My last three women were out of bed in the chair on the fourteenth day and were walking about during the third week, in striking contrast with my earlier cases (when the medium incision was used), all of whom kept the bed for the full month. Elevation of the head of the bed during the entire puerperium is useful in assisting drainage and involution. Another detail of the lying in after the last three sections was the readiness with which the bowels acted under the ordinary saline laxatives, which is again in decided contrast with their apathy in my former sections under prolonged and heroic medication. I cannot but think that such undisturbed peristalsis was due in great measure to the peculiar technique of the high incision method, particularly the nonhandling of the viscera and the elevation of the head of the bed.

My eleventh Cæsarean section was made November 30th last, for rather exceptional conditions. The patient was a young American woman whose first child was born eight years ago. Four or five years ago she had a uterine fixation made by the Kelly method. After the operation she continued sterile until May of this year. As pregnancy increased in duration, pain in the uterine region also increased, until it became practically unbearable. At the time of operation she had been in labor nearly a week. External examination showed a very tense uterus, developed to the size of the seventh month, with the feeling of internal tension exaggerated, and the points of the child very prominent on manipulation. *Per vaginam* the cervix could be reached with the greatest difficulty, high up, pointing toward the sacrum, and undilated. It was decided that the fixation was interfering with the normal dilatation of the anterior wall, and that the adhesions must be freed, or probably a rupture of the uterus would occur. In this case the median abdominal incision was adopted, because the uterus had not developed sufficiently to allow of the high incision. The anterior uterine surface was found firmly adherent to the abdominal wall by a broad band of adhesions extending from the crest of the uterus nearly down to the symphysis. There was evidently no expansion of the anterior wall of the uterus. There were also four tight bands at the site of the fixation ligatures, between which was a broad band of ligamentous tissue nearly an inch wide. The latter was evidently the direct result of the operation.

After freeing the adhesive bands, I attempted to separate the uterus from the abdominal wall, but could not do so on account of the firm adhesions. The cavity was then opened directly through these adhesions, and a small, feeble child extracted by the feet. The uterus was closed by thorough and through sutures of kangaroo tendon, and the abdominal wall in the usual manner, layer by layer.

Convalescence was practically undisturbed, the temperature once rising to 99.6° F. The child was at the development corresponding to the period, and weighed five pounds. It has since done well.

159 HIGH STREET.

THE STATE, THE MUNICIPALITY, AND TUBERCULOSIS.*

BY WILLIAM CHARLES WHITE, M. D.,

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I consider it a great honor to be accorded the opportunity of speaking at the opening of what is probably the model institution not only of this country but of the world. The greatest credit is due to all who have been connected with its accomplishment from Governor Herrick and Dr. Probst, who launched it, to the architect who completed it. Not the least praise surely is due the architect, Mr. F. L. Packard, who has so carefully incorporated all that is most modern in our conception of the treatment of tuberculosis. A man who is so careful of details that before placing his building has a monthly chart of the heavens prepared so as to get the maximum amount of sunlight on the parts of the building requiring it is surely a man to be entrusted with such a task.

This is not the place to enter upon a discussion of the necessity for tuberculosis work of a preventive and curative nature; nor to do more than enumerate the means used in such a task.

We are all practically agreed upon the modern methods useful in this work. They may be grouped as follows: 1, Care and segregation of advanced cases; 2, the cure of early cases; 3, the education of the community in proper sanitary precautions, including sputum destruction; 4, the registration of all cases in every community; 5, the care of children in the matter of increasing their resistance through medical inspection, open air schools, and playgrounds; 6, the segregation of the tuberculous in institutions of various sorts, such as asylums, orphanages, etc.; 7, milk and meat inspection; and so on.

Tuberculosis is a matter of public health, hygiene, and education, and ought to be handled by the departments of our government commissioned with this work.

In general terms the laws of public health and education are State laws, but the enforcement of these laws is, in the main, municipal and communal. The municipality and county impose the taxes for the necessary operation of the laws and are more or less independent under State supervision for both their health and education.

In no other infectious disease does the State make any attempt to provide for the segregation and care of the sufferers from disease, but rather imposes upon the municipality and county autonomy and independence in such matters. It is a strange development that in the matter of tuberculosis, where the caring of a few hundred tuberculous is such a small drop in the bucket of a State's needs, that the State should have departed so far from the estab-

*Address delivered at the opening of the Ohio State Sanatorium, Mt. Vernon, October 27, 1909.

lished practice. It would seem to be not only a mistake in precedent, but in economy also, for the State to pursue this plan in tuberculosis. Of all diseases that which is most widely spread would seem to demand a local autonomy and control in the provision of housing and segregation quarters.

The care and segregation of advanced cases of tuberculosis, if it were not a matter of policy on the part of the State to require such care in all infectious diseases, could only be properly handled by the municipality or county. Such cases cannot be moved far away from their friends and home because of the opposition of both. On the other hand, if ignorant and left at large, as Miss Lent says, next to nothing can be accomplished, so that there would seem to be but the one solution—the provision of municipal and county institutions for such work for the poor consumptive.

The same principle of municipal and county autonomy on the basis of economy, education, and effectiveness applies to the dispensary work which forms the nucleus and distributing centre of a municipal system. Unfortunately, this department is often not as efficient under municipal management, owing to political conditions, as under charity organization control, but it should always be in close relation with the health department and contributory to the statistical basis which every city needs for the intelligent handling of this work.

While such provision seems essential in the care of advanced cases, the very prevalence of the malady would seem to demand it in the sanatoria for the cure of early cases. Judged in every way from educational, economic, business, and legal standpoints, it would seem best for municipalities and counties, with State aid, to take up the care of early cases so that there may be many centres of education easily reached, and the money for the support of such be spent in the municipality whose residents are being cared for. Early cases, however, may be handled by State, municipality, or charity in any climate with equal results in institutions which can be in a large part self supporting.

The State itself cannot begin to handle this problem by sanatoria. These places as State institutions can be only great educational centres where curable patients will recover and return to their labors as earning disciples of a gospel which will greatly aid the coming immunity of our race. Even the tremendous forecast of 3,000 beds in one institution, which one State plans, if it had nothing else to condemn it, would be but a drop in the bucket of one large State's necessity. Again, to me, it seems quite wrong in principle to expect the State to do the work. Future generations will surely condemn such work as State paternalism which was misdirected.

The more one studies the views of that great teacher of the Adirondacks, the more one is impressed with the sanity and breadth of his views. In a personal letter quoted by Dr. S. P. C. Foster, the nestor of this work in Connecticut, Dr. Trudeau says: "The more I think of the matter of State sanatoria the more I think that the plan of having every community build its own institutions and receive support pro rata from the State is the best and most efficient plan of combating the disease and eliminating the evils of large political institutions.

Each community will be more willing to pay, too, for its own consumptives than to pay tribute to support all the consumptives in the State institution, to which, perhaps, none of the particular community's invalids may be able to gain access. Besides, each community likes to manage, as far as it may, its own affairs."

This is not a condemnation of such admirable institutions as this, but I should say that this is large enough for 200 patients, and should be used for curable patients who can contribute to their own support by work and be returned to their own fields of work later.

The education of the community in proper sanitary precautions should be part of our general system of education, and put upon the same permanent basis as all our other educational work in schools and colleges. Here again, while State laws govern our scheme of universal education, the municipalities and counties levy their own taxes and are responsible for the carrying out of their educational system. Along this line I favor most strongly the provision of a teacher, in municipalities especially, whose sole duty is the work of education in preventive medicine. We have adopted this plan in Pittsburgh, the teacher being paid for by our charity. We expect her to do the school system about once a year, and in ten years hope to have through the children a fully educated community. The work, however, must be consistent and persistent as long as the disease exists.

The registration of cases is, or should be, State law, but the community enforces the law or should do so. This I consider of the greatest importance.

What would any of you think of a business concern taking order after order for work with no knowledge of the plant necessary to handle its task! We can learn much from the United States Steel Corporation in management, control, economy, and returns on investment when applied to the handling of this problem.

In the supervision of dairy and food supplies, the State law applies again, but in the main, the large municipality is responsible for its own supply and the enforcement of the law. In the counties and rural portions the State is still responsible. In tenement house inspection and legislation, while the laws are statutory, they are municipal in operation.

Medical inspection of school children and open air schools are purely municipal. I consider this department one of the greatest prophylactic fields in this work. Look over the reports of cities on sickly children varying from thirty to ninety per cent. in different groups, and your conclusion on the matter of necessity will be formed. We are working for an immune race. Could anything further advance our desires than increasing the resistance of our children? There is no doubt in my mind that a mild attack of tuberculosis recovered from forms a protective inoculation in this disease, and that this is in large part the explanation of our reduced death rate. Römer has lately shown this to be true for other animals.

The school building, its architecture and providing for a few hundred tuberculous is such a sions, are essentially municipal and communal in control, and in these two places the responsibility lies, and not with the State. And so with nearly

all the present methods in our hand for attacking this problem.

Why, then, do we look for so much from the State? It is not a State problem save in a legal business and monetary sense, but rather a city, municipal and county problem, and only to be successfully handled under State guidance, as I see it, by such a conception.

As long as the State continues its paternal attitude in this question, so long will the greater portion of the State's divisions be apathetic in accepting their proper duty and our progress slow in overcoming this disease.

Many cities have, however, accepted their duty and installed a plan which involves a centralized correlated system, composed of the factors enumerated, working in conjunction with the health department of the city. Every community, of course, must modify the plan to suit its own requirements.

Occasionally, a new John will arise with a scheme for general salvation of our race from this infection, but the wise community will with foresight stretch out a pseudopod and incorporate the new plan, digest and utilize it if it is serviceable, and eschew and leave it on its onward path if it is unfit for the furtherance of its own development in the right direction.

Let every community be wise enough to start on a sufficiently large foundation to stand any amount of superstructure. Let it not be drawn off from its homeward course by any siren song.

Such admirable separate forces as the dispensary, the sanatorium, the class system, the day and night camp are but bricks in the wall and more or less important for protection unless properly correlated.

What we are doing to-day by the tuberculosis crusade is in the main producing healthy, resistant bodies, prolonging life, preventing heavy doses of tuberculous infection from gaining entrance to the human body; that is, stopping the doses that kill quickly, and so making for an immune race. This is, I think, the only reading to put upon the reduction of death rate. We have not, so far as I can see or obtain figures, materially reduced the incidence of tuberculosis.

Do not, however, be downcast by this statement. In doing this, we are doing just what we started out to do; that is, making the supremacy of the human body over the tubercle bacillus. None but the visionary could ever expect that the earth would one day witness the funeral of the last tubercle bacillus. We rather hope to see the remnants of its race floating about homeless, emaciated, and attenuated, glad to seek any place rather than a human body because of the difficulty which it will find in obtaining more than an ephemeral lodging place there. We hope to produce a race of mankind in which a tubercle bacillus once having lodging will so speedily come in contact with its lysis and complement that it will die and dissolve as readily as a grain of sugar in a cup of hot coffee.

This is the trend of all our work, and the keynote of its success lies in the centralized, coordinated system of attack. There has been some question in your minds as to the continuance of your rejuvenated Ohio State Society and of its plan for work. To me you have one of the greatest possibilities in the Union. The society of the fourth or fifth larg-

est State in size, population, and wealth; the society of a State which produces Presidents by the half dozen; the society of a State which can muster three governors on a tuberculosis platform; the society of a State possessing a Lowman and a Probst; the society which is in a large part responsible for this beautiful building. There must be no question of your continuance. Your future is a brilliant one, and the coming generation will speak of you in these terms: "They said let there be light, and there was light on the tuberculosis problem."

Tuberculosis varies in death rate from 210.9 in 100,000 in cities to 142.5 in 100,000 in rural parts, of the registration area. In other words, tuberculosis is most fatal in cities and varies almost directly as the size of the city. This indicates that the place for the most vigorous attack is in the city. Let there be, then, in each city of over 20,000 people a complete organization centralized in the health department under permanent government and continuous in operation, composed of dispensary, hospitals for advanced and early cases, educational work, night camps, and open air schools. This, of course, under the city's governance will naturally only be for the poor, but if the plan is right, charity will soon take care of the semicharitable and private enterprises of the more well to do, but all will be uniform in operation and contributory to the final outcome of control of this disease.

After the municipality, or rather coincident with it, the county must be provided for by some similar plan, modified for the county, with county homes and other attributes. In both of these efforts at autonomy, it seems to me, the State would secure fifty per cent. more return on its investment by aiding the municipality and the county to become independent in this work than by attempting to do the work itself.

After this municipal centralization there should be a centralization of the whole scheme in the State health department, and an attachment through this to a United States Bureau of Health which should be in touch with similar departments in each State.

In each State there is the necessity for an organizer and a man of great ability—for a man such as Livingston Farrand, who has done such wonderful work in organizing the National Association and bringing it to such a state of general efficiency. In each large community there must be another such man whose task is the reduction of our loss from tuberculosis, in life, labor, and money. Under the guidance of such men the problem will soon reach solution, by their accomplishment of the independence of each municipality in this matter under State supervision.

The great question which confronts us in such a plan is who shall provide the necessary funds. To-day the State does a large amount. Some municipalities do varying amounts, and for the balance, the work is done by private donations to charitable organizations. Of course, there is room and abundant work for all and not enough funds for anyone; and so it will continue for many a day to come. But the secret of success must be the cooperation of all of these factors.

It remains for some State to establish a uniform State plan, and I know of no State in better shape to do so than Ohio. You have, if correlated, almos-

a model plan under Lowman's guidance in Cleveland, a similar plan for a city under way in Cincinnati, Dayton, Youngstown, Columbus, and Lorain.

A wonderful unity of feeling is shown by the State society holding its meeting at the opening of this State Sanatorium. You have an active and progressive State Board of Health. You have already taken the advanced step of providing for country homes for the tuberculous.

Tuberculosis is essentially a community problem. Someone, however, must lay the plan for the communities and see that it is established on some uniform basis in the community.

If you wish to see how much work this means, sit down before any map of your State and see what is left after the large centres mentioned are removed, and you will soon be convinced of its magnitude. If it is impossible, and such seems to be the case, for the State to engage in such a crusade, could any organization be better adapted as a channel than the State society, or could money be better spent by the State than through your body in employing a man whose sole duty shall be the accomplishment of the independence of the several communities of the State in this work, and their cooperation and correlation in a general State plan?

BEDFORD AVENUE AND WANDLESS STREET.

THE REPORT OF SOME INTERESTING CASES OF FOREIGN BODIES REMOVED FROM THE EARS.

By HAL FOSTER, A. B., M. D.,
Kansas City, Mo.

The physician engaged in the practice of diseases of the ear, meets with many interesting and frequently queer cases of foreign bodies. I have seen quite a number of such cases, a few are of sufficient interest to report.

CASE I.—Several years ago, a man, age thirty, came to my clinic. He was born in Ireland, by occupation a day laborer. He was a fine specimen of physical manhood. He had the bad habit of going on a spree almost monthly. He was just getting over one when I saw him. He had been sleeping out in the barn. It was warm, dry September weather, he had been intoxicated for a week or more. His face and ear were greatly swollen. He complained of a severe headache, dizziness, and deafness. On inserting the ear speculum, I at first thought it a case of acute otitis media. The external auditory canal was filled with a thick white foam which was in an effervescent state. It was so very thick that I had to wipe it out by means of bits of cotton, in order that the field of vision might be clear. The foam being thus removed, I saw a live screw worm. On removing the first live screw worm, I discovered two more live worms, working in a forward and backward motion. They were removed alive by means of the ear forceps very easily. The ear was now irrigated with warm sterile water and wiped out with a few drops of chloroform. I have found local applications of chloroform to be the best remedy to destroy screw worms wherever found without injury to the patient. The patient's ear had nothing used in it prior to my seeing him. The screw worms had done very little damage to the ear. The next day the dizziness and headache had entirely disappeared. The auditory canal remained somewhat red for several days, even this condition had disappeared at the end of a week, and the patient left not any the worse for his unusual experience. When he left he promised not to drink again.

I have seen a number of screw worms in the nose; this was the only case I ever saw with them in the ears.

CASE II.—June 14, 1904, to a Mr. F., an English farmer and cattle raiser near Excelsior Springs, Mo., I brought his daughter, age nine, to consult me concerning

her ear. The girl was perfectly healthy in every way. Three days prior to my seeing her, during the recess hour, she had a piece of a sharp pointed slate pencil broken off in her ear. She had put the end of the pencil in her ear and was rubbing the auditory canal, another girl in a playful mood struck her on the elbow with full strength. The pencil was driven against the drum membrane with violence, causing it to rupture and break, and leaving quite a bit of pencil in the ear. The patient was nauseated, some blood ran from the injured ear. The pain was sharp, so much so that a physician was called and the child was put to bed. It was necessary to use morphine to control the pain. The physician had made several unsuccessful attempts to remove the pencil. The child was in great pain and the ear was discharging a thin bloody material when I first saw her. I sent the patient to St. Joseph Hospital the same day at 2 p. m. Dr. Mathis, of Chanute, and Dr. Marsh, the interne, with several nurses and medical students assisting, I removed the piece of pencil from the ear. Dr. Mathis administered the chloroform. The entire auditory canal was red and swollen. The ear was irrigated with sterile warm water, thus freeing the field from all discharge. I used a small ear speculum and through it could see the dark portion of slate pencil. I was enabled to turn it to one side by an ear curette; this enabled me to get a better view. I now used warm water by means of the ear syringe. The irrigations would turn the foreign body over, but would not remove it. I seized it by a small alligator ear forceps and at once removed it easily. The patient was now placed in bed and the ear treated by irrigating and ten drops of saturated solution of alcohol and boric acid used three times a day. On June 15, 1904, the girl's condition was very good, there was still some discharge, bloody in character. The hearing was improved and the pain had disappeared. On the third day she was greatly improved in every way. I could, at this time, see the perforation in the drum, caused by the direct violence, namely, the sudden stabbing of the slate pencil. The alcohol and boric acid was continued for one week, after which time a silver solution was used. In a few weeks the union had taken place, and the hearing was about normal in the child's ear. One year later it was impossible to see where the rupture had taken place. Antiseptic nasal sprays were used in nose and throat while the child was under treatment, as a precautionary measure to prevent tubal infection.

CASE III.—February, 1905, Mr. J., of Saline County, Missouri, was directed by his family physician to bring his five year old son to consult me concerning a bead in the boy's ear. The bead had been placed in the patient's ear by other boys, and driven into the ear. The bead was about the same size as the auditory canal. The canal was red and swollen tightly around the bead. There was a perforation in the center of the bead, much to my delight. Dr. Hyde administered the chloroform. I was unable to move the bead by means of a syringe and water. I was afraid to use force when I saw the forceps would not budge it. The ear curettes were not quite strong enough. I took a Jarvis nasal snare, pistol shaped, using a mandolin string, slipping one end into the perforation of the bead, which easily passed under and out again so I could anchor it in the snare. By slow and gentle traction I was soon able to remove the bead without injuring the ear, and did not even cause it to bleed. The bead was not in contact with the drum membrane, and the injury to the soft parts healed in a few days. The boy returned home happy and well in a week, hearing normal.

CASE IV.—October 10, 1900, Dr. Blair brought a young man with a small stone in his left ear. The boy was about thirteen years old. He had some difficulty with his school mates out in Johnson County, Kansas. They told him and placed a small stone deep into his ear. It had been in his ear about three weeks when I saw him. The ear was very painful, as several unsuccessful attempts had been made to dislodge the stone by instruments and water. Chloroform was administered. I tried to wash the stone out, but it was wedged too tightly and could not be moved by that method. I inserted a strong, blunt pointed, laryngeal aluminum probe behind it and in this manner dragged it forward, after which I grasped it with a small alligator ear forceps and extracted it. During the operation the soft parts were not lacerated. Antiseptic irrigations were used for several days, after which the boy was sent home well.

CASE V.—February 1905, A Kansas farmer came to my clinic at St. Margaret's Hospital, complaining of ear ache. He stated that while threshing wheat the autumn previous

a grain lodged in his ear. He had not consulted a physician, but had tried to wash it out himself unsuccessfully. Assisted by four medical students of the Kansas University, I used an ear syringe and warm sterile water and succeeded in removing the grain of wheat, much to our amusement and joy to the patient. The grain of wheat was swollen, as it had been in the ear several months. It did no damage to the patient.

CASE VI.—Several years ago Dr. Merriman sent a boy from the Orphan's Home for me to examine his ear. On examination I discovered a white object in the boy's ear. The auditory canal was swollen, but had caused little or no pain. The object was a grain of corn. I was unable to wash it out. I removed it by perforating it with a long, thin corkscrew, which divided it, after which it was removed by syringe and warm water. The boy was entirely well several days later.

CASE VII.—August, 1905. Mr. A., of this city, came to my office early in the morning. He stated that he had a small green electric light bug in his ear. It had been unusually dry and warm for several weeks. Mr. A. had been sleeping on the lawn in a tent to keep cool. The night before the electric light bug had found its way in his ear. He had no pain, but the movements of the bug caused dizziness and a loud noise. When the speculum was used, I could see the live green bug quite distinctly. I used a fine spray of chloroform and followed it immediately with warm sterile irrigations, which easily removed the bug. The bug had in no way injured the ear, but had caused Mr. A. a very uncomfortable night.

CASE VIII.—October 26, 1909. One of the teachers at the Convent Academy brought a girl, age fourteen, to consult me concerning her ear. Several days prior to my seeing her, the girl had been rubbing her ear with a thin lead pencil; while so doing the end suddenly broke and she was unable to remove it. There was a small amount of cerumen in the ear. By means of warm sterile water I washed the bit of broken pencil out. This patient's ear was not injured in any way, and when she returned next day it appeared to be in a normal condition.

I might report many other cases, but these eight cases will suffice to show the variety of foreign bodies which may find their way into the ears.

In my experience it has not been necessary to resort to any cutting operation in removing the foreign bodies. It has required much time, a great deal of care and patience, to remove many of these objects without injury to the ear. Much can be accomplished by a good ear syringe and warm water, and this method should be tried many times before resorting to the well known cutting operations for removing foreign bodies from the ears.

THE INFANCY OF THE PRACTICE OF MEDICINE AND SURGERY.

BY HERMAN POMERANZ, M. D.
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III.

Ancient Hebrew Medicine.

When the Israelites, twelve shepherd tribes from Goshen, first singly immigrated into Egypt, they found it the instructress of mankind in the rudiments of the arts and sciences,—of geometry, astronomy, medicine, orthography, and chronology. The adolescent civilization of a thousand or more years had already adorned the land with scientific schools, with monuments and mausoleums, with palaces and pyramids. Egypt's cyclopean architecture was the marvel of the world; Egypt's universities housed the savant wanderers of the Levant.

The twelve barbarous shepherd tribes, under the

refining influence of the Egyptian priests, soon rose out of their slough of ignorance. They absorbed during their sojourn in the land some of the learning and the culture of their instructors. The sciences, with the single exception of medicine, were taught to all. To the Egyptians, the healing art was of divine origin, and as such was kept secret and sacred in the hands of the god's representatives on earth—the priests. For years foreigners, deeply impressed with the marvelous "cures" and the potency of Egypt's herbs, endeavored to learn the medical secrets from the priests, but with ill success; medicine as practised by the Egyptians was a closed and sealed book to the rest of the world.

Moses, however, as the adopted son of Pharaoh's daughter, was a privileged pupil of the priests. He was the first Israelite to be initiated into the "mysteries" of medicine, and, likewise, "learned in all the wisdom of Egypt." He stands alone in medical history as the first iconoclastic physician worthy of the name. He recognized and propounded, as we of the twentieth century do to-day, the value of prophylaxis—the great basic principle of medical science. He may in all verity be called the father of prophylaxis. Cognizant of the inutility and of the absurdities of Egyptian curative measures, he gave to the world a health code, which intrinsically to our modern conception, appears well nigh perfect. Among many enactments, the most important related to the prevention of disease, and with this aim in view commanded notification, inspection, isolation, and disinfection of the suspected persons and their effects.

The only two authentic sources of information regarding ancient Hebrew medicine and surgery are the Bible and the Talmud.

THE BIBLE.

Anatomy. According to the Bible the human frame is composed of two hundred and forty-eight bones, *hetzum*, divided and named as follows: The head (*rush*), nine; neck, eight; spinal column (*shedrash*), eighteen; ribs, eleven; sternum (*maf-teah shelleb*), six; shoulder joint (*kataf*), four; arm (*yud*), one; forearm (*kaneh*), two; elbow-joint (*marpek*), two; hand (*pissat ha-yud*), thirty; hipjoint (*kotlit*), including head of the femur, three; thigh, one; sacrum and coccyx (*ukaz*), six; kneejoint (*arkub*), including patella (*pikah*), five; leg, two; anklejoint (*karsol*), ten; foot (*pissat haregal*), thirty; etc.

The rabbis based their anatomical knowledge on the dissection of animals and occasionally, of a human being. We are told that the disciples of Ishmael boiled the body of a prostitute (who had been put to death by the government) and found that it was composed of two hundred and fifty-two bones.

The muscles are not indicated individually, but under the general term *bazar*, flesh. The only muscles specified are those of the abdomen. *Job* xl—16). Tendons are called *giddim*. The salivary glands are situated in the mouth under the tongue (*Lev. xvi*). The trachea is composed of incomplete cartilaginous rings (*hulyot*) and membranous ones (*bene hilyah*). The pancreas is the "finger of

the liver" (*ezba ha-kabed*). The brain is not mentioned in the Bible.

Physiology. Digestion, the Bible tells us, is carried on in the intestines. The stomach only stores and grinds the food. The alimentary canal and the passage of food is described in *Leviticus* in the following manner: The food passes from the mouth successively into the oesophagus (*istomka*), reticulum (*bet ha-kosot*), psalterium (*hamasas* or *hem-ses*), abomasum (*karsa*), duodenum (*resh mayat*), small intestines (*kerukah kattinah*), blind gut (*sanya debe*), large intestines (*kerukit ubya*), and into the rectum (*petaroka*). The "food" finally makes its exit through the sphincter ani (*iskutha*). . . . The glands along the alimentary tract secrete a fluid peculiar to themselves.

Etiology. According to the Bible disease is inflicted upon humans by neglecting or disobeying God's commands. (*Lev. xxvi-16* to *25. Ex. xxiii-25. Deut. vii-15. Ex. xv-26. Deut. xxviii-60*). Some of the pathological conditions threatened for disobedience were the plague, "consumption," carbuncles, "fever," sterility, jaundice, ulcers, itch, insanity, leprosy, and blindness. As examples of those afflicted with disease, we are given Miriam, who was infected with leprosy for speaking ill of her brother Moses (*Numb. xii-11*); Judas, who burst apart for betraying Jesus (*Acts i-18*); Jeroboam, whose hand was atrophied for idolatrous practices (*Kings xiii*); Ananias and Sapphira, who met sudden death for prevaricating (*Acts v-5; 10*); Elymas, the magician, who was stricken blind for disobeying the commands of the Lord (*Acts xiii-11*), and Herod, eaten by worms for the same reason (*Acts xii-23*). The *Old* and the *New Testaments* give many more examples too numerous to mention.

The ancient Hebrews, like the Egyptians, believed in the demoniacal causation of disease. Josephus says that God enabled Solomon to expel disease demons by means of incantations.

Diseases. The following diseases are referred

to, rather vaguely, in the Bible: Abortion (*Exod. xxi-22*); apoplexy; cancer; congenital blindness (*John ix-7*); dropsy (*Luke xiv-2*); dysentery (*Acts xxviii-8*); epilepsy (*Matt. iv-24*; elephantiasis (?) (*Job ii-7*); "fever" (*Lev. xxvi-16*); gangrene; gonorrhoea (*Lev. xv*); hysteria; hypochondria; inflammation of the eyes (*Lev. xxvi-16; Matt. xii-22*); leprosy (*Mark i-40*); diseases of the liver; metorrhagia (*Lev. xv-25; Luke viii-43*; melancholia; malaria (*Lev. xxvi-16*); oriental pest (*Deut. xxviii-59*); paralysis (*Matt. iv-24*); phthisis (*Lev. xxvi-16; Deut. xxviii*); rheumatism (*John v-3*); sunstroke; sterility (*Gen. xx-17*); skin diseases (*Deut. xxviii*); worms.

Diagnosis. There are practically no direct references to diagnostics in the Bible. The only exception to this is the mention of the following three varieties of leprosy: *burat lebena*, or bright, white berat; *berat cecha*, dusky, spreading berat, and *berat boak*. Only the first two were considered contagious. The term leprosy included a vast number of cutaneous affections.

Hygiene. The preservation of human health, by a thoroughly strict dietary and the avoidance of contagious diseases, is exhaustively considered in the last four books of the *Pentateuch*. Moses was impressed with the prevalence of infectious and parasitical diseases and in his health codes taught, with marvelous wisdom considering the age in which he lived, the animals to be used and those to be avoided in the selection of foodstuffs. He indicated the thorough bleeding of the animals permitted as food, the burning of their fat, and the examination of those internal organs (the spleen, lungs, and liver), especially liable to disease. The animals to be avoided are generally those subject to parasites—*Trichina spiralis*, anthrax, etc.—and to infectious diseases, such as diphtheria and tuberculosis. Rat-tray has arranged and simplified the list of permitted and forbidden animals in the Mosaic dietary, as follows:

No.	Species.	Clean and permitted for food	Unclean and forbidden for food
1.	Quadrupeds of mammalia (<i>Lev. xii-21</i>)	Cow Ox Sheep Goat Hart Roebuck Fallow deer Bison Wild ox Chamois Dove Quail Pheasant	Camel Hare Swine Weasel Mouse Ferret Mole Cud chewers, not hoof divided Hoof divided, but not cud chewers
2.	Birds or bipeds (<i>Lev. xi-13</i>)		Eagle Ossifrage Osprey Vulture Kite Raven Owl Ostrich Night hawk Cuckoo Hawk Little owl Great owl Cormorant Swan Pelican Gier eagle Stork Heron Lapwing Ibis All carnivorous
3.	Fish (<i>Lev. xi-9-10</i>)	All aquatic life, and scale, noncarnivorous, sea-wood eaters. Flesh wholesome, nutritious, oil edible and reliable	All without fins and scales, e. g., the shark tribe, eelish. Usually carnivorous, voracious, flesh of coarse fibre and unsavory
4.	Insects (<i>Lev. xi-19</i>)	Locust Beetle Grasshopper	All flying, creeping creatures on all fours mostly forbidden
5.	Reptiles		Snakes Caterpillars Worms Crocodiles Lizard Tortoise Chameleon Centipeds Millipeds Snail
6.	Molluscs (<i>Lev. xi-30</i>)		

"This is the law of the beasts, and of the fowls, and of every living creature that moveth in the waters, and of every creature that creepeth upon the earth: To make a difference between the unclean and the clean, and between the beast that may be eaten and the beast that may not be" (*Lev. xi-46 to 47*).

Prophylaxis. We are told (*Lev. xiii-xiv*) that the Israelites prevented the spread of contagious diseases, especially leprosy, by isolating the sick, burning their clothes, and disinfecting their homes. The suspected individual went to the high priest, who was supposed to make the diagnosis. If the condition was doubtful the patient was isolated for seven days, during which time, if the suspicious eruption had spread, the disease was declared to be leprosy. The patient was then strictly isolated and cut off from communication with every one. Even kings were not exempt from complete isolation if attacked with a contagious disease. Thus, King Azariah (*I Kings xv-5*) affected was isolated and directed to live alone outside of the city walls. Every leper, on the approach of a stranger, was compelled to bare his head, put a cover on his upper lip, and cry out in lugubrious tones, "unclean, unclean." Lepers were even buried apart from those who died a natural death.

Treatment. There are neither prescriptions nor any explicit directions in the Bible concerning the treatment of diseases. In *Gen. xxvi* is mentioned the first example of the use of amulets by the Jews to ward off disease demons. These amulets were fashioned in the shape of human figures. The present day phylacteries and *mezzusas* of the Jews are in a sense simply inscribed parchment amulets to counteract evil influences. The *mezzusa* is a narrow tin box containing a slip of parchment with an inscription from *Deuteronomy*. The box is placed diagonally on the right door post of every orthodox Jewish home.

Solomon we are told had considerable medical knowledge. The Talmudists assert that he was the author of an encyclopedia of cures, *safir rayfoes*. The work is not extant. Elisha, likewise, is supposed to have been quite a successful practitioner in his day, especially in leprosy.

Surgery. Only circumcision (*Lev. xii-3*), castration (*Matt. xix-12*), and minor injuries are referred to in Holy-Script.

Obstetrics. There are numerous references in the Bible to obstetrics. Thus, in *Gen. xxxv-17* and xxxviii-28, the confinements of Rachel and Tamar are mentioned. The labors of both were very prolonged and difficult. Midwives were called in to assist. In the birth of Tamar's twins, the protruding arm of one fœtus was marked with a red thread, but, strange to relate, the child with the thread was born second. (*Gen. xxxviii-28*). It is evident, therefore, that some kind of version must have been performed. As a rule midwives were not called in to every case for the reason that Jewish matrons in Egypt, as a rule, delivered themselves. The names of only two midwives—Shiphrah and Puah—have come down to us from Scripture. . . .

Writers of medical history invariably contend, and with little reason, that ancient Jewish medicine was almost wholly founded on Egyptian theories and practices. That the contention is erroneous is

easily proven by a perusal of the Bible and the Talmud. The former does not mention any drugs, while the latter refers only to a few. The Egyptians were acquainted with hundreds of herbs and their products. It is therefore obvious that medicine among the Hebrews was very little influenced by the teachings of the Egyptian priests, who, as is known, kept their remedial measures to themselves. Among the Jews any person could practice medicine and impart his knowledge to whomsoever he wished. Scripture does not mention instances of priests acting as physicians. The prophets, however, occasionally practised medicine.

THE TALMUD.

The Talmud is a confused jumble of rabbinical discussions with ingenious and ingenuous reflections on every topic mentioned in the Bible. There are endless theoretical dissections of legendary, legal, and scientific subjects, interspersed with a medley of satirical allegories, childish witticisms, popular proverbs, and frivolous gossipings. Like the Koran, it contains much that is of inestimable value and a great deal that is trash pure and simple. It is, at Graetz says, a sort of literary Herculaneum and Pompeii. It embodies more than six centuries of Jewish life and traditions.

For many hundred years after the Written Law was brought from Mount Sinai, the Jews thought that various oral codes accompanied it, and were handed down from generation to generation, until a century before Christ, when one Hillel Hanasi reduced many of these oral codes to writing. The result was a commentary on the Written Law called the *Mishna*. After the fall of Jerusalem many Jewish schools sprang up at Jahneh, Sura, Alexandria, and Nehardia, for the study of Jewish law, medicine, and kindred subjects. The first translators of Aristotle passed their early youth in these rabbinical schools. The rabbis of the schools produced what is known as the *Gemara*, a commentary in turn on the *Mishna*. The *Talmud* as a whole comprises the *Mishna* and *Gemara*, the former written in Hebrew and the latter in Aramaic. There are two recensions of the *Talmud*, namely, the *Babylonian* (*Talmud Babilî*), which is the more voluminous, and the *Palestinian* (*Talmud Jerushalmi*). The Talmud for many centuries had a profound influence on the history, the morality, and the learning of the Jewish race.

The medicine of the *Talmud* is a curious mixture of sense and nonsense, of many hygienic laws antedating those of the twentieth century, and of amusing Chaldaic superstitions. In anatomy and physiology the rabbis taught that the human skeleton was composed of two hundred and forty-eight bones in the male and two hundred and fifty-two in the female. They experimented in removing the spleen and said that the operation was not necessarily fatal (*Ab. Zarah 44*). They make a differential diagnosis between albumin and seminal fluid by boiling: the former they knew coagulated and the latter liquefied. Rabbi Isaac contended that the liver secreted blood.

Some of the pathological conditions the *Talmud* mentions are malignant throat affections, "fever," jaundice, bulimia, hydrophobia, epistaxis, hæmoptysis, gastritis, syphilis (?), dropsy, scabies, malaria,

glanders, ophthalmia, cancer, gout, hæmorrhoids, epilepsy, and hip disease. Here is a diagnosis of hydrophobia: His mouth (the dog's) is open; his ears drop; saliva issues from his mouth; his tail hangs between his legs; he runs sideways and the dogs bark at him.

In surgery the Talmudists were acquainted with dislocations of the thigh, amputations, trephining, perforations of the lungs, fractures, and nasal polypi. Cæsarean section is mentioned in *Niddah* 40-i. Surgeons were called *ummanim*. In major operations the patient was given a sleeping draught, *somme de-shinta*. Phlebotomy was performed either by means of leeches, *alukah*, or by cupping—the cup was called *karna de-ummana*. Intubation of the larynx was practised upon animals with a *kerumit shel kanet*. In fractures of the skull followed by trepanation a metal plate (*didduk shel kareveyah*) was employed to cover the exposed brain. Uterine specula were known to gynecologists (*Niddah* 66). The edges of old wounds were freshened to form granulation tissue to hasten healing (*Hull* 77).

The pathology of the *Talmud* has it that diseases are caused by constitutional defects and to evil influences acting on the body from without. Jaundice was ascribed to retention of the bile; dropsy to retention of urine.

Biblical hygiene is considerably developed in the *Mishna*. The proper methods of slaughter and of examination of "clean" animals are dwelt on at great length in the section *Hulin*. The heart and lungs must be examined, said the rabbis, for adhesions, perforations, and calcified areas.

The remedial measures advised and medical statements generally in the *Talmud* are often ludicrous in the extreme. Thus, if a man has eaten onions in the evening and is found dead the next morning, there is no need to make inquiry of the cause of death! (?) . . . Good signs in an invalid are sneezing, perspiration, evacuations, seminal emissions, sleep, and dreaming. . . . The most painful of all deaths is that by quinsy. . . . Eating cane leaves, the foliage and tendrils of the vine, the palate of cattle, and the back bones of fish, "cause" hæmorrhoids.

Wise rabbi Samuel said: "We know remedies for all diseases except three: That induced by unripe dates 'on' an empty stomach; that caused by wearing a damp linen girdle round one's loins; and that occasioned by falling asleep after meals without having first walked a distance of at least four cubits." . . . "For asthma, take fennel, mint and wormwood, and for convulsions after childbirth take the same in spirits." . . . "God, created nothing without a reason. He created the snail and the leech as remedies for contusions; the fly for the sting of bees; the gnat for the bite of a serpent; the serpent for the cure of a scab, and the lizard for the sting of a scorpion!" . . . In jaundice feed the patient with ass's flesh." . . . "Whoever is bitten by a mad dog may be fed with the left lobe of the dog's liver." . . . "For the bite of a serpent, a hen may be cut up and applied to the wound." . . . "For continued fevers, the weight in sea salt of a brand new *soles* (coin) suspended on a papyrus fibre round the patient's neck so that it rests in the hollow in front" . . . "For tertian fever, take seven small

grapes from seven different vines and seven grains of caraway seed and tie them to the hollow in front of the neck." . . . "Babylonian broth made up of mouldy bread, sour milk, and salt, retards the heart action and emaciates the body." . . . "A certain cure for nausea is a mixture of cabbage, beet root, water distilled from dry moss and honey." . . . "Garlic destroys cancer!" . . . "Asphasia is cured by bread baked upon coals, soft boiled eggs without salt, and the continued use of olive oil." . . . "Olives strengthen the memory." . . . "Cinnamon, myrrh, and galbanum are disinfectants." . . . "For an issue of blood (metorrhagia) let the patient sit at a parting of the ways with a cup of wine in her hand, and let some one coming up behind her, startle her by calling out 'Be healed of thine issue of blood.' If this fails, take three measures of onions boiled in wine and give to the patient to drink, at the same time calling out suddenly, 'Be healed of thine issue of blood!'" . . . "He who eats turnips and beef and sleeps out in the open air during the night of the fourteenth and fifteenth days of the months of summer (full moon) will most likely bring on an ague fever, (Gittin)." . . . "A woman marrying under twenty years of age will bear till she is sixty; if she marries at twenty she will bear until she is forty; if she marries at forty she will not conceive, (*Bava Bathra*)." . . . "The regular period for gestation is either two hundred and seventy-one two hundred and seventy-two or two hundred and seventy-three days, (*Niddah*)." . . .

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- 1545 MADISON AVENUE.

REPORT OF TWO CASES OF INFLUENZAL
MENINGITIS.*

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CASE I.—The patient was a child, C. C., six and one half months old. Family history good, except in one particular, the mother having had three miscarriages, but no specific history was elicited.

Previous history: Child was in good health until four weeks before admission to the Beth Israel Hospital on October 9, 1908, when she began to cough, which cough continued to increase in severity. At the end of the second week of her illness she began to vomit once or twice

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daily and had some rise of temperature. Four days later, the temperature became very high, the child was very restless, chiefly at night, she cried very much, and had some twitching of the extremities. The child refused to nurse and if forced to take food, she vomited. She also vomited between meals.

Physical examination: The child's general condition was very poor, there was some slight dyspnoea but no cyanosis. The pupils were equal but reacted sluggishly to light. There was internal strabismus of both eyes, some nasal discharge, and her throat was slightly congested. Her neck was very rigid and some opisthotonus was present. Fontanelles were considerably bulging and any pressure on them would set up convulsive movements of the limbs. The lungs showed some scattered rales. Her heart was normal but the pulse was irregular, both in force and frequency, it was rapid and the tension was fair. The abdomen was distended. The liver extended two fingers' breadth below the border of the ribs. The edge of the spleen was palpable and hard. On examination of the extremities, there was no Kernig nor Babinski sign, and the reflexes at the knee were absent. The child was very irritable, the slightest touch caused mild convulsions. The temperature was 102° F.; pulse, 180; respiration, 60. A temporary diagnosis of cerebrospinal meningitis was made.

On October 10th, the child's condition was very poor, her temperature was 104.6° F.; pulse irregular, ranging from 106 to 180; respiration was 76. A lumbar puncture was performed and 15 c.c. of turbid fluid was obtained. Acting under the supposition that the case was cerebrospinal meningitis, perhaps due to meningococci twenty cubic centimetres of Flexner's serum were injected. Eyes and ears were examined and the examination proved negative. Ophthalmic reaction with tuberculin was also negative. The urine was drawn by a catheter and found negative. Blood count showed red blood corpuscles, 3,900,000; haemoglobin, seventy per cent.; white blood corpuscles, 14,000; small mononuclear, twenty-three per cent.; polynuclear neutrophile, seventy-seven per cent.

October 11th and 12th, the child became much worse, she did not sleep all night, kept moaning continually, and coughed very much. The nasal discharge was well marked. Respiration, 70; temperature, 104.5° F.; pulse, 164. The fontanelles were bulging. At 3 p. m. the child had a severe attack of convulsions which was controlled by chloroform only. A lumbar puncture was again made and 25 c.c. of turbid fluid was removed.

Report of spinal fluid by Dr. J. J. Hertz, bacteriologist of Beth Israel Hospital, read as follows: Ten cubic centimetres of turbid fluid was received, after centrifuging the fluid, smears were made of the sediment, which showed bacteriologically numerous Gram negative, very slender bacilli which varied in size from 0.25 to 1.5 micra in length, both intracellular and extracellular. The extracellular bacilli were arranged singly, some end to end (3x4 micra long) and others side by side. There were polynuclears, 97 per cent.; mononuclears, 3 per cent. The supernatant fluid showed albumin, 1 mm. in height (contact test, with HNO₃); sugar, negative. Cultures: Some of the sediment was planted on: 1, Agar; 2, serum agar; 3, glucose agar (2 per cent.); 4, serum glucose agar; 5, Loeffler tube; 6, bouillon; 7, streaked on a plate of glucose agar (2 per cent.) mixed with one sixth of its volume of human blood. After twenty-four hours there was no growth on any of the first six media. On medium seven at the end of twenty-four hours there were numerous dewdrop colonies, varying in size from a pin point to head of a pin. Smears from these showed Gram negative bacilli which varied in size from 0.5 to 2 micra in length.

October 13th and 14th. General condition was very much the same with the exception that she took a little nourishment. The temperature, pulse, and respiration remained high, but she had no convulsions. The nose and throat culture showed no growth on Loeffler's medium.

October 15th. Her condition was much worse, her face was quite cyanosed, and she refused to take the breast. She vomited everything, even when the mother's milk was given her with a spoon or by gavage. The vomiting was, at times, projectile in character. Twitchings of the extremities were quite common and she had two convulsive attacks which lasted five minutes each. The abdomen became enormously distended and her pulse was very weak.

October 16th. The child became much worse. She had convulsive attacks almost every two hours. The vomiting continued, her pulse was hardly perceptible, the respiration

was shallow and rapid. The nasal discharge was still marked. The cough had disappeared. Her pupils were very small and did not react to light. Internal strabismus was still present.

October 17th. The child had a convulsive attack every time it was touched. Her abdomen was very much distended. She did not respond to treatment and died during a convulsive attack. No autopsy was obtained.

CASE II.—Child, T. F., age eight months. Family history was negative. Previous history: Labor had been normal and the child was nursed by the mother until the sixth month; since then it was nursed and also fed with milk and farina.

Present illness: Child was perfectly well until five days before admission to the Beth Israel Hospital, July 26, 1909, when the mother noticed that the infant was feverish, had a slight nasal discharge, coughed somewhat, and vomited after feeding or taking medicine. On July 24th the child had several convulsive seizures which became more frequent and of greater severity during the next two days.

Physical examination (July 26): The child was well nourished and well developed. The fontanelles were slightly open and McEwen sign was present. Examinations of the ears and nose were negative. Skin was hot and dry. No eruption. Tache present. Eyes: Pupils equal, but did not react to light; the eyeballs were rolled upward and there was some slight nystagmus. The pharynx and tonsils were congested. The cervical, submaxillary, and axillary glands were palpable. The lungs were in a fair condition, the respiratory murmur was of good quality and percussion was normal. The heart borders were normal. The sounds were rapid, but no murmur was present. The pulse was rapid, weak, and regular. The abdomen was soft, somewhat distended and tympanitic; there was no tenderness nor rigidity. The liver was somewhat enlarged, and the spleen palpable. There was marked cyanosis of the face and constant generalized clonic convulsions, more marked on the left side of the body, and marked rigidity of the extremities. Reflexes were exaggerated, there was a double Kernig sign, no Babinski sign, and no ankle clonus.

On July 27th and 28th a lumbar puncture was performed and 10 c.c. of a thin purulent fluid was obtained. This fluid was examined by Dr. Hertz of the Beth Israel Hospital and he gave the following report:

Albumin, 1.5 mm.; sugar, reduction with Fehling's solution; smear showed Gram negative bacilli same as in Case I. Cytology, polynuclears, 94 per cent.; mononuclears, 6 per cent. The cultural characteristics were the same as in Case I, except that we grew the fluid in bouillon which contained one twelfth its volume of human blood and found that the bacilli were not motile. Nose cultures contained *Staphylococcus albus*, pseudodiphtheria bacilli, and influenza bacilli. Throat cultures, no influenza bacilli. The examination of the urine was negative. Examination of blood: red blood corpuscles per c.mm., 3,750,000; haemoglobin, 80 per cent.; white corpuscles, per c.mm., 12,600; small mononuclears, 32 per cent.; large mononuclears, 22 per cent.; polynuclear neutrophile, 46 per cent.

July 29th: The general condition of the child was very poor, it still had general and localized clonic convulsions. The lungs showed the presence of sibilant rales. The temperature ranged from 102 to 104; respiration from 50 to 100, and pulse from 120 to 140. Throat and nose cultures were negative. Moro and von Pirquet tests were also negative.

July 30th: Fundus of the eyes were examined by Dr. Torok and found to be in normal condition. The child died on July 31st. No autopsy was obtained.

Meningitis complicating influenza was clinically recognized long ago (during the epidemics of 1848 and 1849) but it was impossible to differentiate it from meningitis due to meningococci, pneumococci, or tubercle bacilli. It is only since the discovery of the bacillus by Pfeiffer in 1892, that writers began to describe the disease with certainty. The bacilli were cultivated from the secretions of the nose, throat, and various internal organs. Dr. Canon found them also in the blood. Dr. Pfuhl, Dr. Fraenkel, and others, have described cases of influenza meningitis, when on autopsy the influenza bacillus was cultivated from the meningeal exudate.

Lumbar puncture, besides, being an excellent therapeutic agent in relieving the pressure symptoms of meningitis is certainly of the greatest diagnostic importance in distinguishing, *intra vitam*, the various kinds of meningitis. Dr. Slawyk (*Zeitschrift für Hygiene*, xxxii, 1898) was the first to report a case of influenzal meningitis diagnosed by lumbar puncture on a baby seven months old, who was sick and died on the fifteenth day of its illness, and Dr. Pfeiffer himself found the bacillus in pure culture. Influenzal meningitis was produced in animals also by injecting the cerebrospinal fluid from a severe grip meningitis into their meninges.

Dr. Mya (*Gazzetta degli ospedali*, xxiv, 1903) reported four cases of influenzal meningitis, and fluid withdrawn by lumbar puncture showed the influenza bacillus in pure culture.

Dr. Douglas (*Lancet*, January 12, 1907) was the first physician in England, who performed a lumbar puncture upon a ten months' old child with meningeal symptoms and obtained yellowish fluid, and bacteriological examination revealed the Pfeiffer bacillus. The child died, an autopsy was made, and the same bacillus was obtained from the meningeal exudate.

Dr. S. S. Adams (*Archives of Pediatrics*, xxiv, October, 1907) was the first American physician who reported a case of grip meningitis in a five year old boy who had a temperature of 106.4° F., symptoms of meningitis were marked, a lumbar puncture was made on the eighth day, and 10 c.c. of cloudy fluid was obtained, which was rich in a small bacillus which showed culture characteristics like the influenza bacillus. Three days later, the child died. He tabulated twenty-one cases including his own, in which lumbar puncture was performed during life. In seventeen cases, Pfeiffer's bacilli were found in pure culture. Nineteen were children, of whom sixteen died.

During the last year, two interesting papers appeared in this country on this subject. One by Dr. B. A. Cohoe, of Johns Hopkins University (*American Journal of the Medical Sciences*, 1909, cxxxvii), who reports a case of influenzal meningitis in a man, thirty-three years old, diagnosed by lumbar puncture. The patient recovered.

Dr. J. Davis (*Archives of Internal Medicine*, IV, No. 4) reports two interesting cases, twin brothers, youngest patients on record, who became ill on the fifth day after birth and died a few days later.

There was no distinct evidence of meningeal trouble, still, autopsy on one of the infants revealed lesions of acute purulent leptomeningitis and enteritis. From the meningeal exudate and periteneal fluid, pure culture of bacillus influenza were found.

As to the frequency of influenza in children, it may be of interest to refer to an article by Dr. William C. Williams (*Journal of the American Medical Association*, July 4, 1903) who reports a number of cases of influenza in children and relates a statement made by Dr. F. E. Wynekoop of the Chicago Department of Health, that of 2,460 examinations made of cultures from throats in cases of suspected diphtheria, 677 showed the Canon-Pfeiffer bacillus as the only pathogenic organism. While of these 677 cases, in 173, the diagnosis of diphtheria was definitely made from the clinical findings, yet the Klebs-Loeffler bacillus was not present.

Washburn and Ayre reported twelve cases of death from pneumonia in children, of whom the autopsies showed the Pfeiffer bacillus present as the main factor in the disease, in eight of them, previously unrecognized.

139 HENRY STREET.

THE TREATMENT OF TUBERCULOSIS BY SUC-CINIMIDE OF MERCURY INJECTIONS.

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So many excellent monographs have been devoted to the ætiology and treatment of tuberculosis, and presented from every viewpoint to our store of knowledge, that the writer considers it unfair to the medical profession to repeat what is already known or written on this subject; for anything new in the treatment of tuberculosis or any other disease, is always treated with scepticism.

When antitoxine was first introduced in the treatment of diphtheria, what attacks and ridicule it had to contend with! The result of that treatment is of the greatest value and so acknowledged by the entire medical world. Through the incentive of the discoveries of Dr. L. B. Wright, surgeon, U. S. N., now stationed at the Naval Hospital at Las Animas, Colo., our attention has been directed to the therapeutic value of mercury, his method of treatment and the great success which he has obtained in over 300 cases during the past two years.

The object of this paper is to give the result of my own observations and experience in the treatment of tuberculosis by Dr. Wright's method in a large number of patients in private practice, and to draw the attention of the medical profession to the fact that in that method, we have a valuable adjunct in the treatment of that dreaded malady. And the results are encouraging enough to justify the wider application of its use.

Tuberculosis is recoverable. It is never cured by the physician alone but by the patient himself, that is to say, by the natural resistant powers of the patient to the disease. And these powers can be stimulated and directed by wise medical guidance and advice. Many patients recover spontaneously even under the most unfavorable conditions.

Drugs in general are useful but play a secondary part only. Hygienic and dietetic means are very important, and if we use these aids combined with the mercury injections we have a very ideal method in the treatment of this scourge of the human race.

The treatment can be used in any stage of the disease, and it is not necessary for the patient to leave his family and home and seek health in a different climate, as it is well known that there is no specific climate to arrest the disease. Patients get well in cities. The all important thing is that the consumptive shall have healthful living quarters, adequate food of the right kind, opportunity for rest, and proper medical treatment.

The action of the mercury increases the resistant powers of the patient, and acts as an antitoxine to the tubercle bacilli, which neutralizes or destroys their virulence, thus giving the patient a chance to throw off the toxins produced by the tuberculous

process. The tonic action is very marked; appetite and weight increase.

Mercury is not debilitating in this disease; no more so than it is in syphilis. In this latter disease cachexia, as a rule, is very marked; but still we do not hesitate to use this drug, and with excellent results. Syphilis is a constitutional disease caused by the *Spirochæta pallida*, and under the mercury treatment, properly administered, the germ is destroyed and disappears. It has the same action on the tubercle bacilli, as tuberculosis is also constitutional in character. It has been demonstrated with the sputum of many patients that, before treatment began, examinations showed numerous bacilli, and after the first series of injections of mercury the bacilli disappeared entirely, as shown by repeated examinations; while in other cases their number was markedly reduced or they were only very few in number, thus showing the destructive action on the germ, which is the crux of the treatment.

The patients treated by me showed no bad effects and no abscesses were formed in the hundreds of injections made. In other words the treatment is harmless if properly made and due care is taken.

METHOD OF TREATMENT.

Each individual case must be closely observed. If the patient is unable to take the full treatment it is best not to begin. To get the full benefit of this treatment, you must have complete control of the patient and let him and his family so understand it. If the patient has a rise of temperature, he should be placed in bed and treated at home until the temperature becomes normal, when he may come to your office for treatment. The general management of tuberculosis is so well known that I will not discuss it here. I follow Dr. Wright's method with a few modifications. The buttocks constitute the area for injections, alternating from the right side to the left side. The skin of the area is washed with sterilized hot water or with a piece of absorbent cotton saturated with ether or alcohol; syringe and needle are boiled prior to injections. The syringe used is of special construction, made by the firm of Sharp & Dohme. When the tablet is placed in the barrel the needle is adjusted, ten minims of boiled water are drawn into the barrel, shake to dissolve tablet, when it is ready for use. The needle should be from one inch to an inch and a half in length and should be driven deeply into the muscular tissue by a downward plunge and then the drug slowly injected. If slight hæmorrhage takes place by accidentally puncturing a small vessel no harm arises.

Give the injections every other day, beginning with 0.1 grain and gradually increasing the dose until slight tenderness of the gums or diarrhœa is produced; then reduce the dose until these symptoms subside, and continue until thirty injections have been given. After the first series follows a rest of two weeks; then resume and continue as before, or as long as improvement continues.

Some patients are sensitive at the puncture of the needle but as a rule no objections to the continuance of the treatment are made. On the contrary, the patients are anxious for the treatment, as they see results more quickly by this method than any other experienced.

Indications for reducing dose. Symptoms of approaching mercurialization; sudden rise in temperature; loss of weight; gastric disturbances; excessive cough and expectoration coming on suddenly, especially when these symptoms previously have been under control. Experience will teach when to increase or diminish the dose. You must gauge the susceptibility to the drug in each patient. I have found the tablets of mercury succinimide made by a London firm to be very reliable.

CASE I.—Male, age twenty-nine, bookkeeper, noticed a tired feeling and loss of weight; his appetite was poor, had a slight cough; walked into my office in a collapsed condition. On auscultation I found all the characteristic symptoms of tuberculosis; his temperature was 102° F.; family history bad; sputum showed numerous bacilli. I ordered him to bed and a nurse took charge of him. A few days later his expectoration became profuse and purulent in character. Dr. Le Fevre was called in consultation and verified diagnosis, and routine treatment was ordered; but for two weeks no improvement was shown. All the symptoms continued. In addition, alarming pulmonary hæmorrhages took place. On June 10, 1909, three weeks after the patient came under my treatment, I began the mercury injections, starting with one fifth of a grain. After the fourth treatment his temperature fell to normal; his appetite greatly improved. When taken ill his weight was 130 pounds. On June 19th, about nine days after beginning of treatment, his eight had increased to 137½ pounds. July 1st, weight 140½ pounds; nurse discharged; temperature continuing normal; allowed light exercise, such as walking. July 6th, weight 144 pounds. August 11th, 150 pounds; injections stopped after receiving thirty in number; left for the country for two weeks and then returned for second series of injections. September 21st, weight 161 pounds; patient stated that he never felt better in his life, or weighed so much; felt good; attended to his business three days in a week. Had his sputum examined October 1st and November 8th and bacilli absent, while before treatment his sputum showed numerous bacilli. His family and friends were surprised at the result; his expectoration was almost nil; his full second series of injections stopped November 10th, and his weight on that day was 165½ pounds; total gain in weight in six months thirty-five and a half pounds.

CASE II.—Mrs. M., married, age thirty-one, mother of three children, ill for the past year; cough, expectoration, loss of weight, night sweats, palpitation of the heart; appetite fair, bowels irregular; went to the mountains and had to be brought back after a few weeks' stay. Her physicians gave up all hope. Her weight was ninety pounds. Her normal weight was 135 pounds.

On July 16th patient came under my care. Her sputum showed numerous bacilli; family history good; temperature 100.5° F. When called to her house, I found her an invalid in bed. Started the mercury injections August 4th. After the fifth injection patient's appetite improved; was cheerful, looked better; expectoration diminished, and general condition markedly improved. After two weeks' confinement in bed, I allowed her to sit up; temperature normal. August 30th, weight 105 pounds. Menses appeared four weeks after treatment, having previously been absent. Patient allowed to go out on the street, which she enjoyed very much; and no unfavorable symptoms showing went out every day for a few hours, afterward resting in bed for remainder of the day. September 12th, weight 108½ pounds and still improving. For the past month, she had been able to come to my office for treatment and felt good. October 1st, weight 110½ pounds. This was at the date of the ending of the first series of injections. Rested for two weeks and second series started October 15th. Three days later slight hæmorrhage took place which stopped the next day. November 1st, weight 100½ pounds, the cause of which was due to a diarrhœa. Had the sputum examined and found very few bacilli present. November 10th, weight 113 pounds. She had gained 23 pounds from the beginning of the treatment.

CASE III.—Male, age forty-five, married, salesman; had been ill for the past two years; family history negative; been complaining of a cough, losing weight and strength; treated by many physicians but without improvement. Was induced to try the mercury treatment September 18, 1909.

Patient was then very emaciated; expectoration frequent and profuse. Sputum was examined and showed tubercle bacilli in great numbers; temperature, 101° F.; weight, 128 pounds; normal weight before illness, 165 pounds. September 30th, twelve days after the mercury treatment started, expectorations diminished; temperature normal; appetite good; desired to eat all the time. October 6th, sputum examined and showed tubercle bacilli, few in number only; had gained six pounds. Stopped treatment on account of business matters but will resume at an early date.

CASE IV.—Male, age thirty-one, occupation storekeeper; had been complaining for a year of a cough; expectoration; night sweats, and slight hemorrhages, shortness of breath, appetite poor. Family history, father and one brother died of consumption. Temperature, 97° F.; normal weight, 162 pounds; weight when treatment began, 128 pounds. Sputum showed few bacilli. June 20th, injections of mercury commenced. July 10th, weight, 131 pounds. August 1st, weight, 133 pounds. August 20th, weight, 140 pounds. September 10th, weight, 144 pounds. October 4th, weight, $151\frac{1}{2}$ pounds; showing a total gain of twenty-three pounds in weight. Examinations of sputum on October 4th and 20th showed bacilli absent, the patient having been so far restored as to attend to his regular business.

The writer has four additional cases under treatment as yet unfinished, upon which he will make a later report.

Résumé: In every case described there has been improvement in the general condition, evidenced by increase in weight, normalizing of temperature, and diminution in cough, expectoration, and night sweats. The destructive action of the mercury on the tubercle bacilli in Cases I and IV was strikingly apparent. It is hardly necessary to say that percussion and auscultation uniformly reflect the general improvement.

The inevitable conclusion from such cases as those must be that, in succinimide of mercury, hypodermically administered, we have a very efficient means of arresting tuberculous degeneration and of improving in a most striking manner the general condition of the patient. The only question which appears to remain for test is whether we may not have here a specific remedy for the disease in all stages at which the tissues are not yet so broken down and disorganized that reestablishment is a physical impossibility.

354 EAST FIFTIETH STREET.

SPINAL ANÆSTHESIA AT THE HOSPITAL FOR THE RELIEF OF THE RUPTURED AND CRIPPLED.

By V. P. GIBNEY, M. D.,
New York,

Surgeon in Chief.

On the morning of December 7th, Dr. Thomas Jonnesco, of Bucharest, Roumania, was good enough to demonstrate a method of anæsthesia by the intraspinal injection of stovaine and strychnine. The patients selected for the demonstration were:

CASE I.—A boy, aged five and a half years, admitted to the hospital for the relief of talipes calcaneus, the result of poliomyelitis. Dr. Jonnesco thrust the needle, sterilized for the occasion, into the spinal canal just to the left of the spinous process of the last dorsal vertebra as the patient sat on the end of the operating table, an assistant holding the body in moderate flexion. The skin was of course prepared as for a hypodermic injection. The patient evinced very little discomfort from the procedure, which was quick and exceedingly dexterous, and the cerebrospinal fluid flowed in a small stream to the extent of about a drachm. A milligramme of stovaine in sterile water, combined with normal strychnine, was at once injected through

the needle into the canal. A bit of gauze constituted the dressing. The upright posture was maintained for about three minutes, when the recumbent posture was taken and the operation begun without delay. An Esmarch bandage was applied, and an incision was begun from the os calcis, at the point of its insertion of the tendo Achillis up the inner side of the tendon to a distance of about three inches and down past the tendon to the fat and fascia beneath. This was dissected with scissors and forceps, exposing the lower end of the tibia, the astragalus, and the os calcis. The posterior spaces of the articular surfaces were thus exposed, and with a sharp scalpel the articular cartilage of the tibia and the astragalus and the os calcis was shaved off to a depth of at least an inch forward, thus approximating bone to bone. Silk was employed to hold these bones together. The tendo Achillis, which had been held to one side by a retractor, was brought into a vertical fold for shortening at least one inch and held by a quilted stitch of silk. The skin wound was closed over all by catgut continuous suture without drainage, and, after a sterile dressing was applied, the Esmarch was removed while the foot was put in plaster of Paris.

This operation is given in detail to bring out the different tissues subjected to the scalpel and needle as well as to let the reader know that some time was consumed. The work was done expeditiously, however, by the reporter, who loses no time in operations, in deference to a principle regarded by him as of much importance. The patient had a towel between his face and the operator, but did not at any time make any signs, muscular or vocal, that led us to believe that he suffered any pain or that the anæsthetic was not perfectly satisfactory. The assistant and the surgeons, standing at the head of the table, could be heard talking with the patient, and assurance was given that there was no suffering. He came from the operating room as well as when he left the ward, and was sitting up within the hour. He has not had any untoward symptoms.

CASE II.—A girl, aged eleven years, was admitted for the relief of a relapsing equivocal form of paralytic origin. The anæsthetic was administered in the same way as in Case I, the dose being two milligrammes. This girl winced when the needle was inserted, but made no outcry while the plantar fascia and the tendo Achillis were divided subcutaneously or while the foot was forced into a position of overcorrection. There was no nausea following the operation, and there were no disagreeable symptoms whatever until the next day, when she had a headache, not severe. She had also a slight pain in her back. The operator was Dr. Homer Gibney.

CASE III.—A woman, aged thirty-five years, with deformity and disability of the right hip from an intracapsular fracture of the femoral neck close to the head of the femur. There was already vicious union, and the adductors were shortened as well. The fracture occurred in June of the present year. Ten milligrammes of stovaine were injected into the spinal canal just as in the cases already reported and with the same skill. The limb was forcibly brought into marked abduction after subcutaneous division of the adductors, the impaction was broken up, and the limb was put up in the position already secured in plaster of Paris from the ball of the foot to the thorax. Frequently during the operation the reporter, who was doing the work, would ask the patient if she was suffering from pain, and, while she replied that she felt the manoeuvres, she did not have any pain. She certainly offered no resistance, but she was nauseated to a moderate degree, not, however, to the point of vomiting until twelve hours later, and she was about as uncomfortable as one is from ether.

CASE IV.—A boy, aged twelve years, with a double oblique inguinal hernia, anæsthetized in the same way by Dr. Jonnesco. The needle failed to reach the canal on the first attempt, because the boy pulled himself away or sat too upright. A second attempt was more successful, and Dr. W. B. Coley did a Bassini radical cure on both sides. The patient at no time during the operation evinced the slightest pain, and behaved quite as well as patients do

under complete ether anæsthesia. He had a sharp headache for two days and vomited a little in the afternoon. His temperature reached 102° F. that afternoon and gradually came down to normal.

Hernia operations never go above 100° F. in the hospital. All were quite successful from an anæsthetic point of view, and all the patients have done well up to the present writing. While it is not my purpose to discuss the question of spinal anæsthesia in general, I am compelled to give credit to the Roumanian surgeon for the thoroughness with which he accomplishes the object, and if I were to elect this kind of anæsthesia for an operation on my own person, I should wish Dr. Jonnesco to handle the needle. Personally, however, I should hesitate a long while before I allowed any high injection of any solution into my spinal canal. The vascular supply within the canal is too rich, and the danger of hæmorrhage induced thereby sufficiently great, to make me prefer local anæsthesia or anæsthesia through the respiratory tract. In my own practice I have long since abandoned spinal anæsthesia because my own operations are rarely performed as a *dernier ressort*, and my patients prefer oblivion when the pros and cons are fully discussed. The skill with which an expert can penetrate the spinal canal and a knowledge of the apparent harmlessness of the combination of stovaine and strychnine place us under obligations to Dr. Jonnesco and other distinguished practitioners who have invaded the spinal canal and made it possible for any patient, however complicated his case may be, to get surgical relief.

REPORT OF FOUR CASES OF OPERATION IN DR. ROBERT T. MORRIS'S CLINIC AT THE POST-GRADUATE HOSPITAL UNDER STOVAINE AND STRYCHNINE SPINAL ANÆSTHESIA.

BY ASPINWALL JUDD, M. D.,
New York,

Adjunct Professor of Surgery, New York Postgraduate Medical School and Hospital.

In the report of the following cases of operations by Dr. Robert T. Morris and Professor Jonnesco at the Postgraduate Hospital, assisted by myself, under stovaine and strychnine spinal anæsthesia administered by Professor Jonnesco, an attempt has been made to analyze results, allowing the reader to draw his own conclusions. No selection of cases was attempted, except in Case III, one of osteoma of the head, in which the idea was to determine the usefulness of this method in the upper portions of the body.

CASE I.—A German, aged thirty-five years, a machinist. Temperament extremely excitable and emotional. Operation: Left sided inguinal hernia. Injection in the usual manner of stovaine and strychnine. Patient operated upon by Professor Jonnesco, assisted by myself. The operation proved somewhat difficult, and took forty-five minutes. During the first twenty minutes the patient complained of no pain. During the latter period, especially when the cord was pulled upon and the fascia was drawn together, a considerable amount of pain was evinced. The pulse, temperature, and respiration were unaffected.

Subsequent history.—Temperature, 102.4°; pulse, 88; respiration, 26, gradually falling to normal on the third day. No nausea or vomiting. Numbness in the lower limbs for

twelve hours. Complained of considerable pain in the left side and leg for three days. No stimulation employed at any time.

CASE II.—Operation by Dr. Robert T. Morris, assisted by myself. Man, nineteen years of age, Russian, clerk, intelligent, but very phlegmatic. Operation, appendectomy; interval case, third attack. Previous history negative. Operation lasted nine minutes. No adhesions were discovered. One and a half inch incision made. Operation very simple. Complained of no pain. Temperature, pulse, and respiration normal.

Postoperative.—Temperature, 100.4°; pulse, 110; respiration, 30, sinking to normal on second day. Complained of numbness in legs for forty-eight hours. No nausea or vomiting. Symptoms of shock somewhat pronounced for twenty-four hours. Complained of considerable pain in right abdomen and leg. Very restless; headache; complete loss of appetite for three days. Discharged on the seventh day, cured.

CASE III.—Man, nineteen years of age, Italian, of normal intelligence, excitable. Operation for osteoma of the forehead of about the size of a large cherry, involving tables of skull. Previous history: Chorea as a child, also epilepsy. Marked mitral murmur. Operation lasted twelve minutes. Patient experienced severe shock, followed by respiratory failure and absolute collapse. Artificial respiration resorted to, together with rhythmic traction upon the tongue for twelve minutes. Oxygen administered. Camphor, ten grains, whiskey, two drachms, and atropine, one fiftieth of a grain, administered hypodermically during this time. Rectal sphincter completely disvulsed without effect.

Respiration gradually returned, but not to normal for twenty-four hours. One hour after the operation, wild delirium requiring a strait jacket, lasting for about two hours and recurring at intervals until the following morning. Symptoms of shock for forty-eight hours. Complained of no pain, but had general though not complete numbness for forty-eight hours. Left the hospital on the sixth day in normal condition.

CASE IV.—Italian, man, aged fifty, of low intelligence, extremely phlegmatic. Operation for hernia, hydrocele, and completely degenerated cord and testis, the result of injection treatment in previous operations. The operation lasted twenty minutes. The patient complained of no pain either at the time of operation or subsequently, to date.

No nausea or vomiting. Appetite more than good. After the operation, temperature, 102.4°; pulse, 96; respiration, 24, normal in thirty-six hours. The operation was a simple one. The cord and testicle were found entirely degenerated. Only a few sutures to unite Poupart's ligament to the conjoined tendon and fascia were required.

In analyzing these cases we note that the operation in the first case lasted more than thirty-five minutes, the time allotted by Professor Jonnesco in which to do efficient work under his method of anæsthesia. The patient was excitable and expected pain, but without question a considerable proportion of his pain was very real.

In the second case the operation lasted but nine minutes, the patient expected no pain, the tissues were very little pulled upon, and probably the same work could have been done under local anæsthesia with an equally good result. He experienced some shock and more than usual postoperative disturbance.

In the third case we certainly had a very narrow escape from respiratory failure, and only careful nursing and prompt and frequent stimulation subsequent to the operation averted a fatal issue. Note the delirium.

The fourth patient was so extremely phlegmatic that the operation could have been done with practically no anæsthesia. The cord was so far degenerated as probably to be insensitive under any condition.

As for the analgesia obtained, this was absolute during the first twenty minutes in the first case and during the entire operation in the third; but in the latter case cerebation was as completely abolished within three minutes after the administration of the anæsthetic as though ether had been used.

While the use of stovaine and strychnine anæsthesia in competent hands and in selected cases unquestionably has its advantages over the general forms of anæsthesia, still, at the present time we are not convinced of its efficiency in general use. Administered in the upper portion of the spinal cord, if we can draw conclusions from the one case mentioned, its dangers far exceed those of the older methods.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCIII.—How do you treat fracture of the neck of the femur in the aged? (Closed December 15, 1909.)

XCIV.—How do you treat the night terrors of children? (Answers due not later than January 15, 1910.)

XCV.—How do you treat myalgia? (Answers due not later than February 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable no one answer to contain more than six hundred words.

All persons will be entitled to compete for the prize, whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of \$25 for the best essay submitted in answer to question XCII has been awarded to Dr. Harry C. Gemmill, of Indianapolis, whose article appears below.

PRIZE QUESTION XCII.

THE OPEN AIR TREATMENT OF PNEUMONIA.

By HARRY C. GEMMILL, M. D.,
Indianapolis.

When I have made a diagnosis of pneumonia, I immediately make the fact known to the friend or relative whose interest and affection make interference on their part probable, and at the same time make a statement to the following effect:

"This person is ill of pneumonia, a disease of the lungs and a serious disease. You have been taught to consider this trouble as a sort of bad cold and have associated this thought of cold with that of cold air and low temperature. In this you are wrong. Now, in the first place, the lungs have for their function the transmission of oxygen from the air to the blood and also the transmission of carbonic acid gas, a poison to the living body, from the blood to the air. This disease is an inflammation of the lung tissue, due in one case to a certain

germ, and in another case to a number of different germs, and exposure to cold is only the exciting cause. The successful attack of these germs upon the lung tissue has resulted in filling the air cells with blood corpuscles and inflammatory exudates, and in damaging the lining of these cells, whose special function is the transmission of the gases I mentioned to you a minute ago. I am sure that from this statement of facts you will agree with me that this person is in need of the largest possible amount of fresh, cold air. I am so thoroughly convinced that this is true and that no other remedy is of equal value, that I ask you now to allow me a free hand in this matter or to allow me to withdraw from the case at this time."

Having made such a statement I have yet to fail in gaining the consent of the family to the inauguration of a practical and rational open air treatment of the disease.

In private practice, I insist upon the following requirements, which can be obtained, to a practical degree at least, in the average American home:

First, a room with a good sunny exposure, having at least two windows; second, the room to be located as far as possible from the heating facilities, so as to cause little interference with the general comfort of the home; third, having, if possible, a connecting room to which the patient may be removed when necessary.

These facilities obtained, I put the patient to bed, open the windows from the bottom and keep them so during the active period of the disease. I always endeavor to arrange, by screens or otherwise, to prevent direct draughts of air, but insist not only upon the freest ventilation, but the same degree of cold obtaining out of doors.

Briefly, I am convinced that by means of the oxygen thus introduced from the beginning of the disease, we overcome to a great extent that toxæmia, which I have learned to dread far more than the extensive consolidation in the lung tissue. This toxæmia is of a twofold nature, and the poisons producing the much dreaded heart weakness of pneumonia are not alone the excretions of the bacteria present, but are to a far greater degree, the excretions of the patient, improperly disposed of because of the impeded respiration and consequent insufficient oxygenation.

Since adopting this method of treatment, I have had much better results and particularly I have noticed less need of stimulation and supportive treatment, meaning by this, drug stimulation. In fact, my treatment of an ordinary case of pneumonia at present consists in the freest possible administration of fresh air, good, easily assimilated, nourishing food and little else, unless complications arise demanding individual treatment.

I have put this matter in its present form because I am convinced that no man can assign a rational reason for neglecting the fresh air treatment of pneumonia, and I am sure that many have not adopted it because of the prejudices existing among the people and their superstitious dread of the effect of cold air on the person suffering from this disease.

3004 CLETON STREET.

Dr. Theodore Bachly Pearson, of Wilmore, Ky., remarks:

Pneumonia, due to a specific organism, like all infectious diseases, is self limited. Recovery takes place only whenever the antitoxine in the blood neutralizes the toxins of the microorganism if the physical structure of the heart and lungs can withstand the strain of the invasion and warfare of the forces of life and death. Drugs, therefore, are of no avail, so far as abruptly relieving or altering the course of the disease. Antiseptics, absorbed and eliminated unchanged; heart stimulants that urge a fatigued and erratic heart without assisting it, and cough sedatives that obstruct the removal of debris only burden a system struggling with a condition it only too well recognizes is about to terminate the activity and existence of its cells. The lesson of a close study of this class of diseases is caution and conservativeness.

Sudden exposure to cold is conceded to be the prime force in inaugurating the activity of the pneumococci, but pneumonia is due more to a reduced resisting power in the respiratory tract by breathing constantly impure air. The disturbance of the natural equation of oxygen and nitrogen prepares the way for the invasion of the diplococci and their propagation more than any other aetiological factor.

Fresh air is the one thing life depends upon. We know it is this one natural force that gives the red cell its real value—how much it contributes to the cells that are responsible for our antitoxines, of course, we do not know. But, surely, a cell with the wonderful skill of a phagocyte requires as much as any other cell in the body. Therefore, is it not plausible that the production of antitoxine in a measure depends on whether or not these blood cells obtain the proper amount of nutrition? They cannot in a venous blood.

Butler says: "A drink of cold water passing through the oesophagus will so affect the filaments of the pneumogastric that arterial tension is increased and bodily temperature, fleetingly, raised. Cool, fresh air will do the same thing passing through the trachea—*increase the heart's systolic power—the one thing required in the days of pneumonia, when the heart, wearied, begins to fag and flutter in its gallant effort to obtain and deliver oxygenated blood.*" Authorities tell us the red cells accept only oxygen from the air, and yet pure oxygen administered in pneumonia is worthless.

"When life's last embers burn."

In the cities 234 in each 100,000 die of pneumonia, in the rural districts only 141.

Pneumonia is primarily a lung disorder; all that follows is but the result of this peculiar condition of the respiratory tract. Death comes from an exhausted heart, either from its efforts to force blood through a partly consolidated lung and a reduced air vesicle surface, or overcome by the influences of the toxins on the brain cells or both. The part the lungs enact is but passive. Air is the thing wanted, the thing vital, the thing not obtainable.

We know when we breathe fresh air, our whole body responds, our cheeks flush, our pulses bound—new life seems to have been given us—nothing is compared to it, especially after being confined in an ill ventilated, warm room. Most city inhabitants

live in close quarters and heed no advice concerning ventilation. Pneumonia prevails in those months when all windows are closed and persons crowd into one room. On the other hand the country practitioner does not fear pneumonia as city doctors do. We have pneumonia; recurrent attacks and recoveries are common simply, I believe, because our houses are not air proof and overheated, and because, as a rule, we are fresh air "cranks." In the city one attack is too often the last.

I am an advocate of the open, fresh air, treatment for pneumonia. It holds temperature to a minimum, sustains the heart, facilitates expectoration, prevents extension of the focus, hastens crisis, and convalescence.

I have but eight cases to report from and the patients had, even after they appeared to be entering a severe attack, a mild form of pneumonia.

There are three ways of treatment: 1. Open windows and doors; 2, modern applications for fresh air treatments (awning, etc.); and, 3, the tent. The first is most expedient; the last, best. My readers are too well acquainted with the application of fresh air for me to enter into a detailed discussion.

In regard to pneumonia I am of Macbeth's opinion concerning "physicks"—there is but one remedy and that is the thing the patients cry for, air, plenty of it, and pure.

Dr. Hans G. Baumgard, of New York, states:

Osler defines lobar pneumonia "as an infectious disease characterized by inflammation of the lungs, toxæmia of varying intensity, and a fever that terminates abruptly by crisis" (1902 edition). According to Wassermann, antibodies develop in the bone marrow, which gradually entering the blood finally appear in such quantities that they kill the pneumococci and thus cause the sudden disappearance of all symptoms of the disease. Thus Wassermann explains the crisis in pneumonia.

Radical treatment would consist in augmenting the formation of these antibodies. All other treatment is symptomatic. Open air treatment considers one important symptom: Pneumonia impairs an important bodily function, *i. e.*, respiration; this in turn leads to an intoxication by the carbon dioxide, which accumulates in the blood. The open air treatment, according to my idea, considers the elimination of carbon dioxide and its replacement by available oxygen. Fresh air also stimulates the other functions of the body through its tonic effect on the system. Oxygen is also a weak cardiac stimulant. Rapid respiration in pneumonia is an effort to compensate for lost breathing space, more oxygen needed with less available lung tissue, hence rapid breathing to furnish the necessary oxygen. This factor is considered in the open air treatment, for in the fresh air we have more available oxygen than in the sick room. Oxygen given pure without admixture of air is irritating (Osler). We obviate this by allowing our patient to breathe the fresh, out of door air. Oxygen has long been mentioned in discussing the therapeutics of pneumonia. Most often it was used toward the end. In the open air treatment we use it from the very incipency of the disease.

I thus consider the open air treatment favorable

as symptomatic therapy in pneumonia; it serving a double purpose: *First*, by supplying oxygen in correct proportion for the impaired respiration; *second*, it stimulates the system as a whole, the heart in particular benefiting directly through its slight stimulating action.

(To be concluded.)

Therapeutical Notes.

The Treatment of Hæmorrhoids.—In Grasset and Vedel's *Consultations médicales* (Montpellier: Coulet et Fils, 1910) it is recommended to prescribe an increased quantity of vegetables in the dietary. To overcome any tendency to constipation the use of mild laxatives is advocated, avoiding aloes, it being recommended to give every morning one teaspoonful of castor oil, a wineglassful of Hungarian bitter water, or better give morning and evening a pill of the following composition:

- R Extract of belladonna,
Pulverized belladonna,ãã gr. 1/7.
M. et ft. pil. No. 1. Mitte No. xx.
Or
R Podophyllin.
Euonymyn,ãã gr. 1/7.
M. et ft. pil. No. 1. Mitte No. xx.

For internal hæmorrhoids it is recommended to prescribe ten to twenty drops of the following mixture twice daily with meals:

- R Tincture of hamamelis,
Tincture of hydrastis,ãã 5i.
M.
Or
R Fluid extract of hamamelis,
Fluid extract of hydrastis,ãã mxxiv;
Hydrochloric acid,gtt. v.
M.

As local applications one of the following solutions may be employed:

- R Antipyrine,5i;
Water,3iiss.
M.

To relieve bleeding piles it is advised to apply a solution of adrenalin chloride solution (1 in 1,000) in appropriate dilution.

Or

One half per cent. solution of cocaine hydrochloride, or a solution of stovaine of the same strength.

As an analgesic prescribe an ointment of the following composition:

- R Stovaine,gr. iv;
Adrenalin solution (1 in 1,000),gtt. xxx;
Wool fat,
Petrolatum,ãã gr. lxxv.
M.
Or
R Anæsthesin,gr. xxiv;
Extract of hamamelis,gr. xxx;
Tannic acid,gr. xv;
Petrolatum,3viiss.
M.

Or

- R Chrysarobin,gr. xv;
Petrolatum,ãã 5iiss.
Wool fat,ãã 5iiss.
M.

If the use of suppositories is indicated, prescribe one of the following combinations:

I.

- R Morphine hydrochloride,gr. 1/7;
Extract of belladonna,gr. 1/3;
Oil of theobroma,5i;
M. ut fiat suppositoria No. iv.
Sig.: Two at once.

II.

- R Cocaine hydrochloride,gr. 1/3;
Extract of rhatany,gr. xv;
Oil of theobroma,5i.
M. ut fiat suppositoria No. iv.
Sig.: Two at once.

III.

- R Solution of adrenalin chloride (1 in 1,000),gtt. x;
Oil of theobroma,5i.
M. ut fiat suppositoria No. iv.
Sig.: Two at once.

In cases that do not respond to this treatment recourse must be had to the use of high frequency currents, dilation of the anus, or excision of the hæmorrhoids.

Pron (*Formulaire synthétique de médecine*) advises frequent hip baths; attention to diet, which should be vegetarian principally; alcohol and condiments are interdicted. As a laxative he names the following, mentioning at the same time, that all drastic purgatives should be avoided:

- R Calcined magnesia,5iiss;
Sugar of milk,5v;
Pulverized licorice,3iiss.
M. et Sig.: One or two teaspoonfuls in a little water, in the morning before breakfast, or at night on retiring.

As local treatment it is advised to bathe the parts once a day with warm water, to which has been added thirty or fifty grains of alum, one drachm of tincture of rhatany, or one drachm of solution of lead subacetate.

As internal treatment the following is prescribed:

- R Fluid extract of hydrastis,
Glycerin,ãã 5ij.
M. et Sig.: One to two teaspoonfuls three times a day.

If the hæmorrhoids are internal Pron prescribes a suppository of the following composition:

- R Extract of rhatany,gr. ivss;
Ergotine,gr. iii;
Extract of opium,
Extract of belladonna,ãã gr. 1/3;
Oil of theobroma,q. s.
M. ut fiat suppositorium No. 1.

Treatment for Pruritus Universalis.—The *Journal de médecine de Paris* for October 30, 1909, quotes Pautrier as the author of the following ointment for use in the treatment of general pruritus:

- R Hydrocyanic acid,5i;
Menthol,gr. xv;
Zinc oxide,5v;
Cold cream,3iiss.
M. ut fiat unguentum.
Sig.: For external use.

Or inunctions may be made with a salve of the following composition:

- R Chloral hydrate,gr. xv;
Camphorated oil,5iiss;
Wool fat,3iij.
M. ut fiat unguentum.
Sig.: For external use.

NEW YORK MEDICAL JOURNAL

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and The Medical News.

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NEW YORK, SATURDAY, DECEMBER 25, 1909

THE JONNESCO METHOD OF ANÆSTHETIZATION.

In the editorial article entitled *A Proposed Revival of Spinal Anæsthetization*, published in our issue for December 11th, we took a conservative attitude, because, whatever our impression was, we did not think it fair to our distinguished visitor to condemn his method of anæsthetization without ample warrant in facts. The facts have not been slow in showing themselves, and they only confirm the feeling of distrust which we entertained when the article mentioned was prepared. We have now no hesitation in saying that it would be injudicious to substitute spinal anæsthetization for the commoner methods of securing general anæsthesia—that is to say, in the generality of cases.

In two out of three cases related by our London correspondent in the *Journal* for December 18th the result may, we think, be fairly called unsatisfactory. In one of them, says our correspondent, "the skin incision was quite unfelt, as was the division of the epigastric aponeurosis, but as soon as an attempt was made to withdraw the omentum and stomach (the case was one of cancer of the stomach) the patient groaned and said he felt 'as if his insides were being pulled out.'" In another case, one of chronic suppurative in the mastoid antrum, "upon incising the periosteum some pain was complained of, and, as this persisted at each attempt, a second injection was given. This, however, failed to have

the desired effect and the operation had to be completed under general anæsthesia."

In this issue of the *Journal* we publish two articles relating to Professor Jonnesco's recent demonstrations in New York. One of them is by Dr. Virgil P. Gibney, of the Hospital for the Relief of the Ruptured and Crippled, and the other is by Dr. Aspinwall Judd, in which he reports the four cases of operation under stovaine and strychnine anæsthesia performed in Dr. Robert T. Morris's service in the New York Postgraduate Medical School and Hospital. It will be noticed that Dr. Gibney's cases showed more favorably than the others for the Jonnesco procedure, but we cannot overlook the fact that Dr. Gibney says: "Personally, however, I should hesitate a long while before I allowed any high injection of any solution into my spinal canal. The vascular supply within the canal is too rich, and the danger of hæmorrhage induced thereby sufficiently great, to make me prefer local anæsthesia or anæsthesia through the respiratory tract."

"The operation in the first case," says Dr. Judd, "lasted more than thirty-five minutes, the time allotted by Professor Jonnesco in which to do efficient work under his method of anæsthesia. The patient was excitable and expected pain, but without question a considerable proportion of his pain was very real." "In the third case," says Dr. Judd, "we certainly had a very narrow escape from respiratory failure, and only careful nursing and prompt and frequent stimulation subsequent to the operation averted a fatal issue." "Note the delirium," he significantly adds.

"While the use of stovaine and strychnine anæsthesia in competent hands and in 'selected cases,'" says Dr. Judd, in conclusion, "unquestionably has its advantages over the general forms of anæsthesia, still, at the present time we are not convinced of its efficiency in general use. Administered in the upper portion of the spinal cord, if we can draw conclusions from the one case mentioned, its dangers far exceed those of the older methods." However, Dr. Morris has a good word to say for the Jonnesco method. In a note dated December 17th, which he has been kind enough to send us, he says: "It is my own impression, as you state in the editorial, that the strong point in Jonnesco's work is the skill which he has developed in the practical application of previous known methods. There are a good many patients for whom spinal anæsthesia will probably be desirable—for instance, alcoholics, drug habitués, patients who have had previous operations and who have a peculiar hatred for even the odor of anæsthetics, patients in whom vomiting after operation might endanger some kinds of suturing or might cause hæmorrhage from tension on the su-

ture, as in some kinds of bowel surgery. There are some cases of advanced diseases of the heart and lungs in which the stovaine method would be desirable. Feeble old men who are to be subjected to operation for removal of the prostate or stone in the bladder, I think, will do better as a rule under stovaine anæsthesia."

Professor Jonnesco has given a demonstration in Philadelphia under the auspices of Dr. Edward Martin. Kindly responding to a letter of inquiry of ours, Dr. Martin says: "I am in thorough accord with the editorial clipping which you sent (from the *New York Medical Journal* for December 11th). . . . He (Professor Jonnesco) injected three cases in our surgical clinic. The third was for breast amputation. The patient narrowly escaped death, artificial respiration being required. This in the early stages of the operation. Later ether had to be given to control pain. There has been one death here at the hands of an imitator. One case of partial paralysis in the Philadelphia Hospital resulting from this method of anæsthesia as practised by a Philadelphia surgeon."

It will be seen that the observers whom we have here cited concede Professor Jonnesco's great skill in technique. Doubtless also they would agree as to his exceptional judgment in adjusting the doses of stovaine and strychnine. Moreover, they all seem disposed to say the best that can be said of his method of anæsthetization. From the sum of their testimony, however, we must condemn the method as a routine procedure, though we admit its usefulness under certain special conditions.

A MEDICAL RESERVE CORPS FOR THE NAVY.

Congressional authorization of the establishment in the navy of a body analogous to the new Army Medical Reserve Corps is one of the measures to which Surgeon General Rixey looks forward to remedy the deficiency of medical officers still existing. In his report for the fiscal year 1909 he points out that, with the approval of the department, legislation in this direction was sought for during the second session of the Sixtieth Congress, but that for one reason or another it failed even of deserved consideration. It is hoped that the present Congress will take favorable action in the matter.

Such a corps, says the surgeon general, "would unquestionably take first rank among Medical Department resources" and constitute the department's "main dependence as an organization of unlimited proportion and closest affiliation." The

creation of a medical reserve corps, he contends, would not add to the required annual appropriation for the navy, but it would add enormously to the resources of the Medical Department in the matter of assured efficiency both in the emergencies of peace times and in the event of war. Moreover, it would afford the possibility of affiliating prominent physicians, surgeons, hygienists, and laboratory workers with the navy and of rendering their advice conveniently available; and it would be a means of interesting the medical profession throughout the country in the navy, and thus greatly widening the circle from which to recruit the Medical Corps with young men of promising ability.

Any one of the larger medical centres of the country, says Surgeon General Rixey, could furnish a sufficient number of well qualified young physicians to fill the vacancies now existing in the regular service, and yet the inducements which the navy can at present hold out to those who might accept the probationary service in the grade of acting assistant surgeon are insufficient to attract them. This state of things, the surgeon general thinks, would be remedied by the creation of a reserve corps on the same basis as that of the army, for then it would be possible to offer to candidates a position with adequate pay and allowances during the period of about a year before they become eligible for permanent commissions.

It is certainly to be hoped that there will soon be laid before Congress such representations as will secure legislation that will remove the conditions that now hamper the Medical Department of the navy in its efforts to secure and retain an adequate force of suitable officers. The service is in the highest degree honorable, and it affords facilities for the prosecution of congenial investigations; it should be made also so attractive as to insure the maintenance of its efficiency.

THE AUTHOR OF *SLOVENLY PETER*.

A committee has been formed to erect in Frankfort on the Main, where he spent all his life, a memorial in the form of a *Struwwelpeter* fountain to Dr. Heinrich Hoffmann, the well known author of the *Struwwelpeter*, a book for children, which, with the *Mother Goose Stories* and Grimm's *Fairy Tales*, will always be a fresh delight for the listening young ear. It has been translated into many languages, appearing in English under the title of *Slovenly Peter*.

Dr. Hoffmann was born on June 13, 1809, in Frankfort on the Main, studied medicine at Halle, and established himself as a physician in his native

town in 1834, where he practised until 1889, when he retired. He held several important positions. Until 1845 he was one of the attending physicians to the free dispensary, when he became teacher of anatomy at the Senckenberg institution. In 1851 he was appointed chief physician to the insane asylum, which position he held until his retirement. He was a frequent contributor, not only to medicine, but also to *belles lettres*. But his best known book is *Der Struwwelpeter*, which appeared for the first time in 1845. Hoffmann died on September 20, 1894.

Obituary.

DR. CARL THEODOR, DUKE IN BAVARIA.

Dr. Carl Theodor, Duke in Bavaria, who celebrated his seventieth birthday on August 9th, died at Bad Kreuth on November 30th. On the occasion of his seventieth birthday we gave a short synopsis of his life, to which we refer our readers (see the *Journal* for September 4th). We expressed at that time the hope that it would be granted to the doctor duke to spend many more years in relieving humanity of its ailments. Such was not to be his fate. Even at the time of his birthday the duke was not well; his illness became very severe, and it was a relief to the sufferer when the last hour came. We mourn with his family and his many, many patients, rich and poor alike, the loss of such a noble man.

EDWIN THEODOR SAEMISCH, M.D.,
of Bonn.

Dr. Sämisch, the well known ophthalmologist and editor, was born at Luckau, September 30, 1833. He studied medicine in Berlin and Würzburg, receiving his degree in 1858. The following years he spent as assistant in Wiesbaden and was, in 1862, recognized as Privatdozent by the University of Bonn, where in 1867 he became adjunct professor and in 1873 professor of ophthalmology. He retired in 1906. Among his works may be mentioned the *Handbuch der gesamten Augenheilkunde*, which he wrote in conjunction with Alfred Graefe (the younger).

SAMUEL BENEDICT ST. JOHN, M. D.,
of Hartford, Conn.

Dr. St. John died suddenly on Tuesday, December 21st, aged sixty-four years. He was a son of the late Dr. Samuel St. John, of New York, who for many years was professor of chemistry in the College of Physicians and Surgeons. The younger St. John was for the entire period of his professional career a practitioner of ophthalmology in Hartford, highly respected and warmly esteemed in the profession.

News Items.

Changes of Address.—Dr. Wallace F. Grosvenor, to 10 4820 Kenmore Avenue, Chicago.

Dr. Edward B. Heckel, to the Jenkins Building, Penn Avenue and Fifth Street, Pittsburgh.

Dr. Charles A. Kinch, to 74 West Sixty-ninth Street, New York.

Dr. J. H. Abraham, to 130 West Fifty-eighth Street, New York.

Dr. Philip M. Grausman, to 130 West Fifty-eighth Street, New York.

Medical Society of the County of Kings, N. Y.—At a meeting of the Section in Paediatrics of this society, held on Wednesday evening, December 22, the programme included a paper on Vaginitis by Dr. William B. Meister.

Dinner to Dr. Deaver.—The Manhattan Medical Society gave a dinner to John B. Deaver, of Philadelphia, at the Harvard Club, on the evening of December 17th. Dr. H. Stern, president of the society, presided at the dinner.

A Psychotherapeutic Institute and Hospital is to be opened soon near Portsmouth, N. H., by Dr. Boris Sidis, of Brookline, Mass., on the handsome estate of Mrs. Martha S. Jones, of Boston, which has been donated by her for the purpose.

Scientific Society Meetings in Philadelphia for the Week Ending January 1, 1901:

MONDAY, December 27th.—Mineralogical and Geological Section, Academy of Natural Sciences.

THURSDAY, December 30th.—Section Meeting, Franklin Institute

Special Lectures at the Philadelphia College of Pharmacy.—The sixth lecture in the course was delivered on December 17th by Dr. Leonard G. Rowntree, instructor in pharmacology and experimental therapeutics at Johns Hopkins University. His subject was Trypanosomes and Trypanosomiasis.

Buffalo Academy of Medicine.—A regular meeting of the Section in Obstetrics and Gynecology was held on Tuesday evening, December 21st. The principal feature of the programme was a paper entitled *The Aftermath of Child Birth*, which was read by Dr. W. P. Manton, of Detroit, and discussed by Dr. C. C. Frederick, of Buffalo.

For Medical Research.—Mr. Otto Beit, the South African millionaire, has made a gift of \$825,000 to the London University for use in medical research. Mr. Alfred Beit, late brother of the donor, recently bequeathed \$250,000 to the same institution, making a total of \$1,075,000, the income of which is to be devoted to providing ten fellowships of the annual value of \$1,250.

The Nobel Prizes for 1900 have been awarded as follows: For medicine or physiology, Professor Theodore Kocher, of Berne, well known for his work in connection with diseases of the thyroid gland; for physics, divided between Mr. Guglielmo Marconi and Professor Ferdinand Strauss, of Leipzig; for chemistry, Professor William Ostwald, of Leipzig; for literature, Selma Lagerlöf, the Swedish authoress; for the promotion of peace, Baron d'Estournelles de Constant and M. Beernaert, former Minister of State of Belgium.

The New Bellevue Hospital.—At a meeting of the Municipal Art Commission, held on December 17th, designs were approved for a group of buildings forming part of the new Bellevue Hospital, at an estimated cost of \$2,756,000. This group of buildings, which will be erected on the block bounded by First Avenue, East Twenty-sixth Street, East Twenty-ninth Street and the East River, consists of two surgical pavilions, a building used for operating rooms, surgical wards and rooms for the house staff, and an extension to the laundry building, with storerooms.

Free Public Lectures at Harvard.—Arrangements have been made again this season by the medical faculty of Harvard University for a course of free public lectures on medical subjects. Last season these lectures were very successful, and it is hoped that they will be even more largely attended this year. They will be given Saturdays at 8 p. m. and Sundays at 3 p. m. The first lecture will be given on Sunday afternoon, January 2d, and the final lecture on Saturday evening, April 30th. Further information regarding the course may be obtained by addressing Dr. Harold C. Ernst, 240 Longwood Avenue, Boston.

Gift to Jefferson Medical College.—The laboratory apparatus belonging to the late Dr. Henry Cadwalader Chapman, who died last September, in Bar Harbor, has been presented by his widow to the Jefferson Medical College. This apparatus is valued at \$20,000. Dr. Chapman formerly occupied the chair of medicine and medical jurisprudence in the college.

Society Meetings for the Coming Week:

MONDAY, December 27th.—Medical Society of the County of New York.

TUESDAY, December 28th.—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology); New York Medical Union.

THURSDAY, December 30th.—Brooklyn Society for Neurology.

The Northwestern Ohio Medical Association held its sixty-fifth annual meeting in Bellefontaine on Wednesday and Thursday, December 8th and 9th. The following officers were elected: President, Dr. D. O. Weeks, of Marion; first vice-president, Dr. D. C. Hughes, of Findlay; second vice-president, Dr. George M. Todd, of Toledo; secretary, Dr. Edwin A. Murbach, of Archbald; assistant secretary and treasurer, Dr. S. D. Foster, of Toledo. The next meeting of the association will be held in Bryan.

A Luncheon to Dr. de Sanfort was given at the New York Drug and Chemical Club on Saturday afternoon. Several medical editors and publishers were invited to meet Dr. de Sanfort and hear his explanation of the therapeutic results obtained in his hyperthermic treatment with the mixture of resins which has been given the name of ambrine. Dr. de Sanfort is a retired surgeon in the French navy, and the method of treatment which he advocates was evolved while he was on active service in China.

The Chicago Eye, Ear, Nose, and Throat College held its annual stockholders' meeting on December 1st. The officers reported a very satisfactory condition of the institution's affairs, the addition of a large ward, and several private rooms, which in the aggregate doubles the capacity of the hospital. Dr. W. A. Fisher, president of the institution, Dr. A. G. Wipperf, vice-president, Dr. J. R. Hoffman, secretary, Dr. Thomas Faith, and Dr. H. W. Woodruff were reelected directors for the ensuing year.

A Half Million Dollar Tuberculosis Fund for the University of Pennsylvania.—Mr. Henry Phipps, of New York, has presented the sum of \$500,000 to the University of Pennsylvania to be used in the campaign against tuberculosis. Some portion of this sum is to be devoted to the erection of a new tuberculosis hospital at Seventh and Lombard Streets, Philadelphia. This sum is in addition to the amount donated by Mr. Phipps, \$1,300,000, for the foundation of the Phipps Institute for Tuberculosis Research in Philadelphia.

The Medical Society of the County of Lewis, N. Y., met in annual session at Lowville on Tuesday, December 14th. The attendance was large. The programme, which was unusually good, included a paper by Dr. J. F. McCaw, of Watertown, on Acute Suppurating Mastoiditis. Four new members were taken into the society, and the following officers elected for 1910: President, Dr. F. E. Jones, of Beaver Falls; vice-president, Dr. F. M. Ringrose, of Constableville; secretary, Dr. H. A. Pawling, of Lowville; treasurer, Dr. I. D. Spencer, of Croghan; delegate to the State society, Dr. P. H. von Zierenhofen. At the close of the meeting the annual dinner was held at the Kellogg House.

The Medical School of Formosa.—The catalogue just issued by the Medical School of the Formosan Government shows a total enrollment of 176 students. The expenditure for the year was 117,088 yen (\$58,522), which is included in the annual budget. This school was established in April, 1899, and has for its purpose the education of Chinese for public physicians. Upon graduation the young men are assigned to various prefectures throughout the island, and they are very useful in creating a higher regard for sanitation and public health. The students are admitted upon a competitive examination, to which they are eligible subsequent to their graduation from the public school. The course of instruction covers a period of five years, and the faculty consists of thirteen members. All the professors are Japanese, and the Japanese tongue is the only language heard during the entire five years' study. The total number of the graduates since the founding of the school is 126. The hospital of the Red Cross Society is attached to this school.

The South Texas District Medical Association held its semiannual meeting in Galveston on Thursday, December 8th, and elected the following officers: Dr. William Keiller, of Galveston, president, succeeding Dr. J. M. O'Farrell, of Richmond, whose term expired; Dr. D. S. Weir, of Beaumont, vice-president; Dr. E. F. Cooke, of Houston, was reelected secretary-treasurer. Houston was selected as the place of next meeting, which will be held the second Thursday in June.

The American Society of Tropical Medicine.—The seventh annual meeting of this society will be held in St. Louis on Saturday, June 11, 1910. Those who intend to be present at this meeting are requested to communicate at once with the secretary, Dr. John M. Swan, of Philadelphia, who would like to receive as early as convenient the titles of papers to be read at this meeting. Those who are unable to be present are requested to send papers which may be read either by title or by proxy and published exclusively under the imprimatur of the society.

The Philadelphia Medical Examiners' Association held its annual banquet on the evening of December 7th. Dr. W. A. Jacquith, medical director of the Prudential Insurance Company, was the guest of honor. Among those present were: Dr. Henry Beates, Jr., Dr. Thomas H. Willard, Dr. W. E. Ray, Dr. R. L. Burrage, Dr. R. Tait McKenzie, Dr. Francis Ashley Faught, Dr. S. H. Brown, Dr. Julius Megargee, Dr. Ernest Kelsey, and Dr. Wendell Reber. At the annual meeting of the association, which was held the same evening, the following officers were elected: President, Dr. Samuel E. Walker; vice-president, Dr. Samuel Horton Brown; secretary, Dr. Norris S. MacDowell, and treasurer, Dr. George E. Morton.

Queens-Nassau Medical Society.—The semiannual meeting of this society will be held at John's Hotel, Mineola, N. Y., on Tuesday, December 28th, at 2:30 p. m. In addition to the address of the president, Dr. Charles M. Niesley, the programme will include the following papers: Report of a Case of Necrotic Pancreatitis, by Dr. A. W. Jagger, of Flushing; The Cystoscopy in Practice, by Dr. E. W. Pinkham, of New York; Spinal Anesthesia, by Dr. Ellsworth Eliot, Jr., of New York. The officers-elect of the society, for the term commencing January 1, 1910, are: President, Dr. Philip M. Wood, of Jamaica; vice-president, Dr. A. W. Jagger, of Flushing; secretary and treasurer, Dr. James S. Cooley, of Glen Cove.

Delegates to the Pharmacopoeial Convention.—The Committee on Credentials and Arrangements of the United States Pharmacopoeial Convention for 1910 has issued notice that the credentials of delegates to the convention should be mailed as soon as completed to Dr. Murray Galt Motter, secretary of the committee, 1841 Summit Place, N. W. Washington, D. C., who will furnish duplicate blanks. Each delegate should retain a copy of his credentials bearing the official seal of the body which he represents. A tentative list of the delegates whose credentials have been presented will be published on April 1, 1910. The headquarters of the convention will be the New Willard Hotel, where all meetings will be held. Under the constitution of the convention all State medical and pharmaceutical associations and schools and colleges of medicine and pharmacy, which have been incorporated for at least five years prior to the date of the meeting, are entitled to send three delegates.

Gifts and Bequests to Charity.—Mr. Frederick F. Ayer, of New York, has made a gift of \$50,000 to the Lowell, Mass., General Hospital.

Dr. Holbrook Curtis, director of the tuberculosis department of the New York Nose, Throat, and Lung Hospital, announces the receipt of \$3,135.50 as a result of the whist tournament arranged at the Plaza Hotel by Mr. Frederick Townsend Martin on November 22d.

By the will of Miss Emma F. Randolph, of Northampton County, Pa., the Easton Hospital will receive \$4,000 and the Easton Home for Aged and Infirm Women will receive \$5,000.

Mr. John E. Berwind, of New York and Newport, has donated to the Maternity Outdoor Clinic, at 216 East Seventy-sixth street, the sum of \$100,000.

The will of Mrs. Catherine Boyle, late of Philadelphia, contains the following bequests: St. John's Orphan Asylum, \$2,000; St. Joseph's Home for Boys, \$2,000; St. Mary's Hospital, \$5,000.

By the will of Mitchell Valentine, who died in New York last August, the Presbyterian Hospital and the Hahnemann Hospital will each receive approximately \$200,000.

Industrial Fatalities in Canada.—Industrial fatalities in Canada, according to the several branches of employment, during the calendar year 1908 were: Railways, 326; agriculture, 223; mining, 148; lumbering, 113; navigation, 84; unskilled labor, 71; metal trades, 63; miscellaneous trades, 61; general transportation, 54; building trades, 46; fishing and hunting, 37; civic employees, 19; food and tobacco preparation, 14; woodworking trades, 7; leather trades, 3; textile trades, 2; clothing trade, 1; total, 1,172. Of the nonfatal accidents, numbering 2,227, the largest number was in the metal trades, 364, followed by railway service, 316, and agriculture, 291.

The Hookworm Commission.—The following letter has been sent to Mr. John D. Rockefeller by Dr. John M. Swan, secretary of the American Society of Tropical Medicine:

Dear Sir:—I am directed by the Council of the American Society of Tropical Medicine to express to you the appreciation of the society for your very generous gift to the cause of American preventive medicine in the establishment of the Hookworm Commission. The discovery of the relation between certain forms of anemia and the intestinal parasite known as *Necator Americanus* is of great credit to American scientific physicians. The economic value to the country of a systematic attempt to prevent future infections will be very great, and the benefit to be derived by the individual to improved mental and physical health, power of production, and enjoyment of life will be incalculable.

This society stands ready to give all the help it can in the conduct of the work.

Infectious Diseases in New York:

if we are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 18, 1909:

	—December 11—		—December 18—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	564	177	513	164
Diphtheria	366	45	401	39
Measles	335	9	509	16
Scarlet fever	337	14	395	20
Smallpox	..	..	..	..
Varicella	111	..	117	..
Typhoid fever	59	11	57	9
Whooping cough	124	1	102	..
Cerebrospinal meningitis	1	4	2	6
Total	1,943	265	2,005	254

Resolutions on the Death of Dr. Dillon Brown.—At a meeting of the Harvard Medical Society of the City of New York, held on Saturday evening, October 23, 1909, the following resolution was unanimously adopted:

WHEREAS, It has pleased Providence to remove from the scene of his beneficent activity our fellow member, Dr. Dillon Brown, at whose residence in February, 1891, the Harvard Medical Society was organized; and

WHEREAS, Dr. Brown faithfully, loyally and with unflinching enthusiasm served the society as its first secretary and later as its president; and

WHEREAS, He contributed by his scientific work, communications and his admirable social qualities to the continuance of its successful career; therefore be it

Resolved, That we, the officers and members of Harvard Medical Society, herewith express our sorrow and mourn the death of Dr. Brown; and be it

Resolved, That we wish to record our appreciation of his labors and services in behalf of our society; and be it further

Resolved, That we transmit, with expressions of our sympathy, these resolutions to his widow and cause them to be published by the medical press of New York City.

Vital Statistics of New York.—According to the weekly report of the Department of Health of the City of New York, during the week ending December 11, 1909, there were 1,432 deaths from all causes reported to the department, 183 more than for the corresponding week in 1908. The annual death rate in a thousand of population was 16.37 for the whole city, and for each of the five boroughs as follows: Manhattan, 15.38; the Bronx, 16.19; Brooklyn, 17.32; Queens, 18.75; and Richmond, 20.74. The total infant mortality was 389; 257 under one year of age, 63 between one and two years of age, and 69 between two and five years of age. Of the total number of deaths of children under five years of age, 38 were due to diarrheal diseases. The deaths from important causes were as follows: Contagious diseases, 79; pulmonary tuberculosis, 177; diarrheal diseases, over five years of age, 41; organic heart diseases, 125; Bright's disease, 168; cancer, 91; pneumonia, 142; bronchopneumonia, 107. There were 13 deaths from suicide, 75 deaths due to accidents, and 2 deaths from homicide, making a total of 90 deaths by violence. There were 123 stillbirths. Six hundred and seventy marriages and 2,754 births were reported during the week.

The Health of Pittsburgh.—During the week ending December 11, 1909, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Pittsburgh: Chickenpox, 12 cases, 0 deaths; typhoid fever, 24 cases, 4 deaths; scarlet fever, 32 cases, 1 death; diphtheria, 19 cases, 3 deaths; measles, 76 cases, 2 deaths; whooping cough, 5 cases, 1 death; pulmonary tuberculosis, 118 cases, 10 deaths. The total deaths for the week numbered 172 in an estimated population of 572,000, corresponding to an annual death rate of 15.64 in a thousand of population.

The Health of Philadelphia.—During the week ending December 11, 1909, the following cases of transmissible diseases were reported to the Bureau of Health of Philadelphia: Typhoid fever, 31 cases, 9 deaths; scarlet fever, 63 cases, 4 deaths; chickenpox, 113 cases, 0 deaths; diphtheria, 106 cases, 14 deaths; measles, 18 cases, 0 deaths; whooping cough, 9 cases, 3 deaths; tuberculosis of the lungs, 70 cases, 49 deaths; pneumonia, 30 cases, 43 deaths; erysipelas, 13 cases, 0 deaths; mumps, 14 cases, 0 deaths. The following deaths were reported from other transmissible diseases: Tuberculosis, other than that of the lungs, 8 deaths; diarrhoea and enteritis, under two years of age, 13 deaths; puerperal fever, 3 deaths; tetanus, 1 death. The total deaths numbered 452 in an estimate population of 1,565,569, corresponding to an annual death rate of 15.01 in a thousand of population. The total infant mortality was 84.68 under one year of age, and 16 between one and two years of age. There were 30 stillbirths, 21 males and 9 females. The total precipitation was 0.74 inch.

The Health of Chicago.—During the week ending December 11, 1909, the following cases of and deaths from contagious diseases were reported to the Department of Health: Diphtheria, 165 cases, 20 deaths; scarlet fever, 167 cases, 15 deaths; measles, 144 cases, 3 deaths; whooping cough, 23 cases, 6 deaths; typhoid fever, 19 cases, 5 deaths; chickenpox, 65 cases, 0 deaths; pneumonia, 1 case, 107 deaths; tuberculosis, 54 cases, 64 deaths; mumps, 37 cases, 0 deaths; erysipelas, 6 cases, 0 deaths. The deaths from other causes were: Cancer, 26 deaths; nervous diseases, 10 deaths; heart disease, 54 deaths; apoplexy, 11 deaths; Bright's disease, 41 deaths; diarrheal diseases, under two years of age, 32 deaths; diarrheal diseases, over two years of age, 11 deaths. There were 7 suicides, 29 deaths due to accidents, and 4 deaths from manslaughter, making a total of 40 deaths by violence. The infant mortality was 160; 106 under one year of age, and 54 between one and five years of age. The total number of deaths during the week was 570, in an estimated population of 2,224,490, corresponding to an annual death rate of 13.36 in a thousand of population. The annual death rate for the preceding week was 13.36, and for the corresponding period in 1908, 12.02.

The Medical Inspection of Schools in Germany is perhaps more thorough than in any other country. The city of Nuremberg, with a population of 320,000, employs fifteen school physicians, who have the medical supervision of about 42,000 school children, distributed throughout 70 school buildings. According to the medical report for the 1906-7 school year, each school physician had under his supervision 2,740 pupils, not including the kindergartens and foundlings' establishments, which also come under the control of the school physicians, and which increased the number of school physicians in Nuremberg varies from \$130 to \$285 a year, according to the number of classes inspected, averaging about \$100. Their duties are very clearly defined. They must visit all the school buildings in their districts three times each year, and investigate all matters of heating, lighting, ventilation, cleanliness, arrangements of gymnasium, baths, toilets, and seating arrangement, and make a report in regard to all these points. All children entering school must be individually examined three times during the first year, and in addition to these examinations, school physicians must respond to every call for examination in regard to suspected contagious disease, must report every case of contagious disease, oversee disinfection, and certify the return to the school of every child who has been out of school by reason of contagious disease. In addition to these duties school physicians must conduct such examinations and make such reports as will aid in the best development of the child physically and mentally, with especial regard to the outlining courses of study and of gymnastic exercises.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 9, 1909.

1. The Relation of Posture to Human Efficiency and the Influence of Poise upon the Support and Function of the Viscera, By JOEL E. GOLDTHWAIT.
2. Treatment of Stricture of the Bulbar Portion of the Urethra by Resection Partial or Complete, By HUGH CABOT.
3. A New Treatment for Abdominal Surgical Shock, By JOHN R. HOPKINS.
4. The Diagnosis of Ulcer of the Duodenum, By E. A. CODMAN.

1. **Posture of Man.**—Goldthwait demonstrates on thirty-six illustrations the relation of posture to human efficiency. The placing of the heavier abdominal viscera distinctly posterior to the posterior abdominal wall below so that they rest upon ridges or shelves or in depressions in which will result the minimum of strain upon the various visceral ligaments is well shown in the cross sections and in illustrations taken from Corning's *Lehrbuch für topographische Anatomie*, Sobotta's *Anatomy*, and Dwight's book on *Frozen Sections*. Goldthwait shows the correct erect position on casts from Greece at the time when the Spartans ruled Greece, on St. Gaudens's statues of Lincoln and of General Sherman, of the statue of Washington on horseback, and of the Empress Elizabeth at Salzburg, and on an American athlete. If any departure takes place in the relations of the viscera and the visceral supports in erect position, disturbances must occur in the visceral support. This he demonstrates on fourteen well selected illustrations. He concludes in saying that the medical profession and the laity should realize that there is a certain definite amount of energy available for expenditure with each individual; that this energy can be expended in many different ways, but that if expended for one thing it no longer is available for other efforts, except after periods of recuperation. The form of the expenditure, whether in mental or physical expression, is immaterial, and the waste of this energy is not only undesirable, but is usually harmful. It is our great function as physicians to show in every way possible how the human organism is to conserve this energy so that when expended it shall yield to the world the largest possible return. If used rightly the physical functions will be more perfectly performed, the mental powers will be greater, and the spirit of the individual must be finer if expressed through a body properly formed and used. It has caused no surprise to find Washington and Lincoln poised so that there could be no waste from the improper use of the physical frames with which they were endowed. We unconsciously expected to find them so poised, and we expect such types to measure up to a very high standard when the great tests are given. It is our duty, however, to recognize that the types which have been depicted as departures from the best have in them the potential of

the finest and that we can have no higher function than that of making it possible for some of these poor creatures to so live that they, or their children, may approach more nearly to the standard that it should be the aim of every human being to reach, which, when reached, must mean a high degree of efficiency of all the elements of the body, the physical, the mental, and the spiritual.

3. **A New Treatment for Abdominal Surgical Shock.**—Hopkins observes that one of the principal functions of the vasomotor nerve mechanism is the proper distributing of the blood in order to preserve the normal temperature of the body. Eighty per cent. of the heat expenditure of the body is through the skin. So when for any reason more than the normal heat or temperature occurs in the body, it is a function of the vasomotor nerve mechanism to at once correct it, but it does not always do it. The elevation of temperature causes irritation of the splanchnic nerves, sympathetic ganglia, and vasomotor centres so that orders are usually sent at once to correct the situation; the heart beats faster and peripheral vessels dilate; thus more blood is gotten to the surface to radiate and evaporate heat. Upon these observations he bases his treatment, which is especially suitable for shock during the few hours or days following an abdominal operation, when the patient is not under an anæsthetic although it is probably beneficial when the patient is anæsthetized, but not to so great a degree. It is as follows: Take out two skin sutures as near the umbilicus as the wound will permit, then pry apart the continuous sutures in the fascia and peritonæum. You can now see whether hæmorrhage is present. This procedure is not difficult nor very painful, because when patients are in shock they are more or less insensible to the causes of ordinary pain. He then injects about one pint of hot normal salt solution (at 112° F.) into the abdomen, beneath the omentum, if possible pushing it upward, so that the fluid reenters the posterior peritonæum, getting as near to the solar plexus as possible. This will take only five or six seconds. During the first two or three seconds of this time the patient feels little or no pain, only feels that the hot solution is permeating among the intestines, but the remaining two or three seconds are much different; the pain is very severe, for then the splanchnic nerves, the solar and hypogastric plexuses are being strongly irritated by the heat and pressure of the salt solution. The irritation of the splanchnic nerves and sympathetic ganglia produced by the heat and pressure at once causes contraction of the intestinal arteries, veins, and portal vein, and thus a marked rise in blood pressure. Really a shock is produced by the sudden pressure of this hot solution on this great and important part of the vasomotor nerve mechanism, but this shock is a sudden reversal of the phenomena of surgical shock. The radial pulse returns or its pressure is markedly increased. The glass tube is taken out quickly, a small piece of gauze laid over the wound and a strip of adhesive plaster applied, then a tight abdominal binder to sustain the pressure. If necessary the treatment should be repeated after two hours.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
December 18, 1909.

1. The Symptomatology and Functions of the Optic Thalamus, By CHARLES L. DANA.
2. Transmission of Malarial Fever in the Canal Zone by Anopheles Mosquitoes, By SAMUEL T. DARLING.
3. The Value of Alimentary Levulosis in the Diagnosis of Hepatic Chirrosis, By EDWARD H. GOODMAN.
4. Water Contamination aboard Ships and Its Prevention, By J. O. COBB.
5. Localized Subphrenic Tuberculosis, By CHARLES A. POWERS.
6. Surgical Treatment of Tuberculous Pleurisy, Lung Abscess, and Empyema, By EMIL G. BECK.
7. Clinical Estimation of Ammonia in Urine by Formalin Method, By E. W. BROWN.
8. A Plea for More Careful Diagnosis and Treatment of Fractures of Extremities, By E. D. MARTIN.
9. Brain Tumor, By WILLIAM G. SPILLER.
10. Extensive Gliomatous Tumor Involving the Cerebellum and the Posterior Portion of the Medulla, Pons, and Cerebral Peduncle, By T. H. WEISENBURG.
11. The Antibodies in Tuberculosis and Their Relation to Tuberculin Inoculation and Vaccination, By WILLIAM J. BUTLER and W. T. MEFFORD.
12. Olive Oil for Postanæsthetic Nausea, By EVARTS A. GRAHAM.
13. The Nature of the Virus of Epidemic Poliomyelitis, By SIMON FLEXNER and PAUL A. LEWIS.
14. Report of Case of Primary Tuberculous Infection through the Intestine without Intestinal Lesion, By F. S. HAMMOND.
15. Recent Findings Regarding the Disturbing Elements in Milk for Infants, By FRANK C. NEFF.
16. Sodium Nitrate in Bronchial Asthma, By GEORGE EDWARD BARNES.
17. Recurrent Vomiting with Acetonuria, By THOMAS J. BURRAGE.

I. The Symptomatology and Functions of the Optic Thalamus.—Dana shows from the investigation of Meynert, Sachs, and Clark, and from his own observations that the thalamus is essentially only an organ for the reception and distribution to the cortex of sensory impressions, that it forms a part of the primary sensory centres for vision, hearing, smell, equilibrium, and deep and superficial sensibility. One stands almost aghast at the enormous inflow of sensory impulses which this small body must be continually receiving and distributing. The spinothalamic fibres bring up sensations from the columns of Goll and Burdach, and the anterior peduncles of the cerebellum pour its equilibrating outflow from cerebellar cortex and dentate nucleus into the thalamus. The pulvinar receives some of the primary visual sensations, and there are centres which receive impulses from the auditory and olfactory nerves. This sensory inflow is distributed to the various regions of the cortex connected with the sense of vision, hearing, smell, and muscular and cutaneous sensibility. The thalamus, therefore, seems to have the function to receive sensations and register them in consciousness. There is still some dispute as to whether it has efferent tracts to the cranial and spinal motor nerves, acting in this way as a reflex centre of a high order. It does, however, send efferent fibres to the longitudinal bundle. There is also some question as to whether there are fibres from the cortex to the thalamus. The question whether the thalamus has centres for vasomotor and thermic regulation or for the visual organs is still unsettled. At present all we can say is that it is an enormous primary sensory nodule, acting to receive and to distribute sensory impulses probably

of all kinds, but just as it is not all of the primary visual centres or of the primary auditory centres so it seems likely that it is not the whole of the primary centre for the sensations that are poured in from the spinal cord and cerebellum. Therefore, there would come from its injury always some sensory disturbances, such as anæsthesias, ataxias, astereognosis, pains, and disturbances of vision and of the ocular movements, but these would not be complete in any direction. This ought to enable us to recognize thalamic lesions and thalamic lesions associated with injury to neighboring parts. The syndrome varies somewhat according to the location of the lesion. The thalamus has a vascular supply from three different sources, and the organ cannot be easily destroyed altogether by one vascular lesion.

2. Malaria and Mosquitoes.—Darling shows that *Anopheles albimanus*, the common white hind footed anopheles, is the host for estivoautumnal and tertian malarial parasites in the Canal Zone at this time. *Anopheles malefactor*, notwithstanding its name, does not transmit malarial fever. *Anopheles pseudopunctipennis* is only slightly concerned in the transmission of malarial fever. In the efforts at mosquito destruction, the extermination of *Anopheles albimanus* is of paramount importance. Patients having crescents or tertian gametes in their peripheral blood should not be discharged from the hospital, nor should treatment be discontinued until gametes have been reduced to a noninfectious minimum. The destruction and prevention of development of the sexual parasites in man is of great importance and may be accomplished 1, by appropriate quinine treatment of all gamete carriers entering the hospital; 2, by occasional quinine treatment to destroy latent malaria; 3, by the periodical blood examination of laborers in quarters where there is a high malarial rate for the detection of gamete carriers and latent malaria in order to carry out appropriate treatment. Thirty grains of quinine sulphate in solution daily is an efficient dose for the purposes required.

7. Clinical Estimation of Ammonia in Urine.—Brown has investigated the possibility of clinically estimating ammonia in urine. He has made a large number of titrations with various urinary samples, following the directions of Ronchèse and Malfatti. It was impossible to determine the end point of the titration with any degree of sharpness, and the method was abandoned in this form. Cochineal and alizarin red were substituted as indicators for phenolphthalein, as they give sharp end points in the presence of ammonia salts in aqueous distillates. They were abandoned as not sufficiently sensitive, even when the method was applied to chemically pure aqueous solutions of ammonia salts. The use of neutral potassium oxalate, as recommended by Folin, occurred to him in this connection before Mathison's paper appeared. The urine was saturated with the salt; the procedure otherwise was carried out exactly as described by the other authors. The end point was now brought with a fair degree of sharpness; this improvement was particularly of advantage in deeply colored urines, it still left much to be desired, and it occurred to him that clearing the urine with lead subacetate might

be of advantage in removing interfering coloring matter before the titration. The excess of lead was removed by neutral potassium oxalate. The results were striking. The end point of the titration was brought out with nearly the sharpness obtained in titrating a watery distillate with cochineal or alizarin red. Many samples after dilution were practically colorless, and in no case was there more than a slight tinge of pigment. Known amounts of ammonia added to the urine were recovered with the same degree of accuracy as without the modification.

11. **The Antibodies in Tuberculosis and Their Relation to Tuberculin Inoculation and Vaccination.**—Butler and Mefford have studied the relation of the antibodies of tuberculous patients. As a result of their work, they conclude that no relation exists between the complement binding antibody and tuberculin inoculations and vaccinations; between the complement binding antibody and the opsonic index; or between the opsonic index and the tuberculin skin reaction. Not only have their examinations failed to show any relation between tuberculin antibodies and tuberculin reactions and inoculations, but, on account of observing occasionally an inhibition of hæmolysis with normal sera, they are strongly inclined to believe that the complement binding reaction is not specific for tuberculosis.

12. **Olive Oil and Postanæsthetic Nausea.**—Graham found that fats and other ether soluble substances, when introduced into the alimentary tract of individuals subjected to ether anaesthesia, are capable of restoring to the blood certain properties which are inhibited by the action of the drug, viz.: those concerned with the phenomena of phagocytosis. With the idea in mind that other effects of ether, such as nausea and vomiting—whether these be due to a local irritating action of the drug on the gastric mucosa or to a more general action elsewhere—might also be influenced by the introduction of a fat, such as olive oil, into the stomach. In a series of cases, patients were given olive oil by mouth immediately after partial restoration of consciousness following an ether anaesthesia. Up to this time thirty patients in all have been treated in this manner. The results have been striking. In certain of the cases nausea failed to occur at any time. In a second group in which nausea had begun prior to the administration of the oil it was immediately checked by this treatment. In only one of the thirty patients was nausea observed after giving the oil.

MEDICAL RECORD.

December 18, 1900.

1. **A Brief History of the Treatment of Stammering with Some Suggestions as to Modern Methods.**
By G. HUDSON-MAKUEN.
2. **The Technique of Amputations with Especial Reference to Osteoplastic Methods.**
By ALEXIS V. MOSCHOWITZ.
3. **The Physical Decay of Northern Europeans in Our Northwest.**
By CHARLES E. WOODRUFF.
4. **The Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation. Discussion of the Hypothesis.**
By JOHN F. RUSSELL.
5. **The Incandescent and the Arc Light in Medicine. Distinguishing Indications for Their Use.**
By A. D. ROCKWELL.
6. **The General Death Rate from Malignant Growths in the Principal American Cities, 1833 to 1907.**
By ROY F. EDWARDS.
7. **Diseases of the Eye in Pellagra.**
By A. B. CLARK.

1. **History of the Treatment of Stammering.**—Hudson-Makuen says that the scientific treatment of stammering must have in view the actual substitution of normal speech for abnormal speech, and its aim primarily, therefore, should be not the cure of the stammering, but the development of correct speech. The cure of stammering should be regarded as of secondary consideration, although of course it follows as a natural consequence. The stammerer's speech is faulty in every particular. His central as well as his peripheral mechanisms are out of gear, and his mental attitude toward speech is wholly wrong. The instrument is out of tune, and the player is unskilled in its use. He cannot retune his instrument and if he could he would be unable to play upon it. The affection, therefore, is a complicated one, involving not only all the various mechanisms of speech but also some of the higher intellectual and emotional centres of the brain. Indeed it involves the whole being, and its scientific treatment, therefore, must have for its purpose a thorough reeducation of the individual; it must supplant his stammering speech with normal speech; it must make it easier for him to speak freely than to speak hesitatingly; it not only must correct the stammering habit, but it must remove the fear of stammering, upon which much of the trouble depends. If we correct the habit, without, at the same time, restoring the patient's confidence in himself and in his ability to speak freely, the cure will be only temporary, and if we develop confidence in the patient, by the use of the so called suggestive method, whether it be given in the hypnotic or waking state, without, at the same time, correcting the physical habits, as is frequently done, the results are only temporary and of course unsatisfactory.

4. **Lime Starvation as the Dietetic Cause of Pulmonary Tuberculosis.**—Russell takes up this question and shows that the fact that Nature furnishes lime is proof of the importance of lime, as it normally furnishes special sources of supply during pregnancy. These stores occur in the form of osteophytes and disappear after parturition. Pregnancy and lactation are normal conditions and it is incredible that under normal conditions they should lead to disease. Faulty digestion, as well as faulty diet, produce lime starvation in man. Among domesticated cattle the chief cause would appear to be defective methods of breeding and improper or insufficient food. If it is true that lime starvation favors the growth and development of tubercle bacilli, it follows that rickets and conditions which lead to lime starvation, such as pregnancy, lactation, prolonged fevers, should show a marked tendency to be followed by infection with tubercle bacilli. Tuberculosis is far more frequent during the time of the greatest growth activity, in the second to the third year than it is, for example, in the sixth to tenth year, in which growth has become slower. The

reason all rachitic children do not develop tuberculosis is because 1, they either do not become infected with tubercle bacilli during the active course of the disease, or 2, having become infected, their lime starvation is relieved and the further growth of bacilli checked, because the cure of rachitis must obviously also be the cure of tuberculosis. Tuberculosis develops in rachitic children when infection takes place and their lime starvation is unrelieved or incompletely cured. Starvation may be a menace from time of conception to extreme old age. Lime phosphate is, therefore, essential for the growth of cells. It is necessary for the normal structure of organs and the repair of injury. Without the action of renet the combination of lime and casein suitable for the physiological needs of the body is not produced. Lack of such lime combination is the cause of many diseases.

6. **Death Rate from Malignant Growth in the Principal American Cities, 1885 to 1907.**—Edwards gives a very interesting statistical review of the death rate from cancer. Three very important factors present themselves: 1. How far is the rate affected by the inclusion of persons coming to the cities for treatment, resulting in ultimate failure, but whose deaths were reported in the city records? This is amply illustrated by the city of Boston. During the eight calendar years ending in 1907 the death rate from cancer was 76.4 per 100,000 of population. Among residents and those whose residence was not determined the rate was 65.9, making a reduction of 10.5, or about fourteen per cent., in the local death rate from this cause. If this is true of most of the large cities, which is very probable, a considerable reduction would occur in the rate, affecting the later years more than the earlier. 2. How far does improper diagnosis and false or careless methods of death registration affect the rate? The assumption is that this would only have its effect upon the earlier periods in question because of the fact that the medical profession has made rapid strides, both in the matter of accurate diagnosis and also in the more accurate reporting of the causes of death. How much this would affect the rate it is impossible to say. 3. What effect has the age distribution of the population upon the rate? As cancer is distinctly a disease of the older ages (in the registration area during the period 1903 to 1907 about 80 per cent. of the deaths from cancer occurred at ages forty-five and over) it seems reasonable to assume that allowance for this factor would cause no material depreciation in the general rate. It seems safe to assume that the mortality from cancer is on the increase and has been so for the last quarter of a century in this country.

7. **Diseases of the Eye in Pellagra.**—Clarke finds, in diseases of the eye, occurring in pellagra, no peculiarities in the symptomatology, characteristic appearances, or complications, save only that they are very prone to exhibit the same cycle, as it were, a recrudescence in early spring time, and, as summer progresses, make recovery. It is his opinion that pellagra is a trophoneurotic condition, involving the entire sympathetic system; not an auto-intoxication, but secondary to the ingestion of a fungi or ferment which causes catabolic changes.

THE LANCET

November 27, 1909.

1. Greek Medicine in Rome, By Sir T. CLIFFORD ALLBUTT.
 2. A Comparison between the Antiseptic and Aseptic Methods of Operation, with Special Reference to the Occurrence of Suppuration, Based upon the Results Obtained at St. George's Hospital during the Years 1906 and 1908 Respectively.
By H. S. PENDLEBURY and IVOR BACK.
 3. The Relation of Alcohol to Immunity.
By P. R. PARKINSON.
 4. Some Complications and Dangers of Nasal Surgery,
By H. BELL TAWSE.
 5. Some Notes of a Severe Case of Exophthalmic Goitre, in which Treatment by X Rays and Sour Milk appeared to be Beneficial,
By J. C. NEWMAN.
2. **Comparison between the Antiseptic and Aseptic Methods of Operation.**—Pendlebury and Back state that during the year 1907 the use of antiseptic solutions at operations was superseded at St. George's Hospital, London, by the more modern aseptic method. Up to the end of 1906 everything connected with an operation at St. George's Hospital, London, was sterilized by means of antiseptic solutions. The trays and other utensils were cleaned by washing in hot soap and water and antiseptic lotions. The instruments were boiled and subsequently put in a 1 in 60 solution of carbolic acid. The swabs were subjected to a similar treatment, as were the towels by which the field of operation was surrounded. Gloves were hardly worn in any instance. "The principal changes that have been introduced are largely concerned with details of technique involved in the substitution of aseptic for antiseptic methods—details which are well known to surgeons and about which it is unnecessary to say anything—and certain changes due to the installation of a more complete sterilizing plant than that which existed before the period considered." The two authors now publish the results obtained during 1906, the last year of the old régime with those of 1908, the first year in which the new method was used systematically. They have examined the hospital records and have gone into the after history of every major operation performed during those two years. They, thus, have compared 738 operations in 1906 with 673 in 1908 (from a total number of 1,360 and 1,180). In 1906 there healed aseptically 638, 100 became septic (13.5 per cent.); while in 1908 the numbers were 624, 49, 7.2 per cent. The percentage figures are better in all cases in 1908 than in 1906, with the single exception of operations upon the breast.
3. **The Relation of Alcohol to Immunity.**—Parkinson concludes that alcohol in small quantities has no action upon the phagocytic activity, until it is present in 12.5 per cent. strength. Small quantities of alcohol injected into rabbits may stimulate the production of antibodies temporarily. A large dose of alcohol lowers the opsonic index for twenty-four hours. Continuous moderate doses of alcohol cause a permanent lowering of the opsonic index. The reacting mechanism to vaccines is much less effective in alcoholized rabbits than in normal rabbits; the difference is still more marked when living micro-organisms are used.

4. **Some Complications and Dangers of Nasal Surgery.**—Tawse thinks that ethmoidal curetting, the only operation worth doing for nasal polyp and apparently a dangerous procedure, is one which in skilled hands is attended with brilliant results. The dangers are: Hæmorrhagic effusion into the eyelids and orbits; orbital abscess; necrosis of the frontal bone; necrosis of the superior maxilla; fracture, puncture, and laceration of the cribriform plate suppurative meningitis; suppurative meningitis apart from injury; severe hæmorrhage; and optic neuritis and blindness. The first of these effusion into the eyelids and orbit is very common and of no moment. Orbital abscess, very rare, requires external incision, as does necrosis of the frontal bone and superior maxilla, but such unfortunate occurrences should not deter one from thoroughly clearing out the disease. To be timid with ethmoidal curetting will certainly deprive the operation of much of its success. The cribriform plate of the ethmoid—that bugbear of most nasal surgeons in their early days—is occasionally punctured, fractured, or lacerated, and fear of this has time and again led to failure. But really a little care in watching the position of the cutting end of the curette with regard to the plane of the cribriform plate will prevent any damage. The serious and almost universally fatal complications of the radical operation of the frontal sinus are osteomyelitis of the skull, meningitis, and cerebral abscess. As to the treatment of frontal sinus suppuration Tawse says that in cases where pus escapes freely from the frontal sinus and is producing no ill effect on the general health, and only an occasional headache is complained of, and if the patient can be seen periodically, the risks of operation more than counterbalance the advantages. Intranasal treatment will suffice for the patient's comfort. If, however, any signs of cerebral involvement occur, if the health is undoubtedly suffering from septic absorption, if the headache is intense and persistent, or the infundibulum is narrower and is causing retention, then an operation must be performed. A few not unimportant sequelæ which one notices after operation, and which, although not of vital importance, are responsible for much discomfort to the patient, he mentions. Dryness of the throat and nose, sometimes with crust formation, may follow turbinal and extensive ethmoidal operations, and after the latter postoperative ozena. The risk of infection of healthy sinuses must not be lost sight of, and although this at times is unavoidable, strict attention to the ordinary principles of antiseptic or aseptic will considerably reduce the risk.

MEDIZINISCHE KLINIK

October 31, 1909.

1. Traumatic Hysteria with Epilepsy, By ERNST SCHULZE.
2. Nature and Methods of Combatting Asphyxia Neonatorum, By C. HOERDER.
3. Disturbances in the Sympathetic and Their Relations to the Psychoneuroses (Concluded), By JOHANNES KYRI.
4. Bad Results with Antimeristem, By RICHARD WINCKLER.
5. Autoserotherapy in Serofibrinous Pleuritis, By ST. SZUREK.
6. Modern Forms of Treatment of Acute Articular Rheumatism, By SUTZER.

7. Technique of the Operation for Panaritium, By S. KOFMANN.
8. Experimental Transmission of Acute Anterior Poliomyelitis to Monkeys, By WILHELM KNOEPFELMACHER.
9. Appendicitis and Pneumonia, By DENIS G. ZESAS.

2. **Asphyxia Neonatorum.**—Hoerder describes the various methods employed to resuscitate infants born asphyxiated, every one of which applied at the right moment possesses undeniable advantages. He advises that when the child is born asphyxiated the division of the cord should be delayed as long as possible, the nose, mouth, and throat should be cleansed, and Schultze's method of swinging used, perhaps in the way modified by Ogata. He tells an anecdote to emphasize the need of persistence in the application of this means of artificial respiration. When he was a student he formed one of a group present when a baby was born asphyxiated. Their teacher applied Schultze's method for half an hour without success, the child was pronounced dead, and laid aside. After the teacher had gone the students brought the dead baby out to practise on it the movements of the method. While the third was exhibiting his skill the child began to breathe and lived.

3. **Disturbances in the Sympathetic.**—Kyri states that the idea of an absolute, ætiological, diagnostic, clinical, and therapeutical distinction between pathological, functional, and psychogenous disturbances is utopian, yet one must determine in each particular case the part played by the one or the other factor and govern his treatment accordingly. Not one of the manifold symptoms remains constant and the advance of the process in the sympathetic is attended by an eternal change of symptoms the succession of which is for a long time not definable. He says that psychoneuroses and diseases of the sympathetic are not identical, but that they are closely related.

4. **Antimeristem.**—Winckler reports three cases of cancer treated with antimeristem, or cancroidin, in which no influence upon the cancerous process could be detected.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

November, 1909.

1. The Aim of Anatomy, By A. CAMPBELL GEDDES.
2. Hæmatemesis and Its Surgical Treatment, Illustrated by Notes of Two Cases, By WILLIAM TAYLOR.

THE GLASGOW MEDICAL JOURNAL

November, 1909.

1. The Doctrine of Inflammation, By ROBERT MUIR.
2. Pyelitis Complicating Pregnancy and the Puerperium, By W. D. MACFARLANE.
3. Some Cases of Pregnancy with Kidney Complication, By JAMES CRAIG.

EDINBURGH MEDICAL JOURNAL

November, 1909.

1. A Glance at Anatomy from 1705 to 1909, By ARTHUR ROBINSON.
 2. The Inaugural Lecture to the Class of Surgery in the University of Edinburgh, By ALEXIS THOMSON.
 3. The Medical Man as a Social Reformer, By LACHLAN GRANT.
 4. The Suction Treatment of Mammary Abscess, By JAMES M. GRAHAM.
4. **The Suction Treatment of Mammary Abscess.**—Graham describes Bier's treatment of mammary abscess as follows: The cup is applied

three to six times for five minutes, with a few minutes' interval between each application. This is repeated daily, and is continued for a few days after the suppuration has ceased. It is necessary that the cup should fit the breast exactly, and when many cases have to be treated a series of cups of different sizes must be at hand. A moderate degree of suction is all that is required, and will produce swelling and congestion of the breast without any pain. If the cup is applied immediately after incision very little suction is needed to evacuate the pus; after a few minutes the abscess cavity is clean and a considerable amount of venous blood is extracted. On the following days the removal of pus is followed by a flow of serum into the cup. If there is a tendency to bleed after incision, it is necessary to pack the cavity for twenty-four hours and thereafter to treat by suction. Milk is most readily removed by a small cup such as the ordinary breast pump applied over the nipple, although a considerable amount comes away in addition with the large breast cup. Graham has treated successfully thirty patients. A comparison between the suction treatment and simple incision with packing of iodoform gauze was made in two patients suffering from double mastitis. In each case the larger abscess was treated by suction, and relatively shorter incisions. With both methods the discharge was soon arrested, and healing was complete about the same time—a result which reflected favorably on the use of suction as the abscesses so treated were much the larger. Suction is particularly useful in supplementing drainage, and the impression was that in many of the cases healing was accelerated by the quickness with which the suppuration was removed. Cupping in cases of chronic sinuses which refuse to heal with simple drainage has a very beneficial effect. Seven patients were thus treated, and in all the improvement was rapid and marked, the discharges quickly dried up, the tubes could soon be left out, and healing was hastened.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of Wednesday, October 6, 1909.

The President, Dr. JAMES TYSON, in the Chair.

Extrasystolic Arrhythmia Simulating Heart Block.—Dr. GEORGE W. NORRIS read a report of four cases, one of which presented very unusual and perplexing features. This case was first believed to be one of auriculoventricular heart block, but upon careful study proved to be one of extrasystolic arrhythmia. The curious feature of the case was that the patient's peripheral pulse rate would suddenly drop from 80 to 40. This change could for a considerable period of time be brought on at will by a few simple procedures, such as a rapid change of posture, taking a deep inspiration, compressing the abdomen, etc. Later on in the course of the disease this tendency became less marked, and a typical pulsus alternans developed. The effect of digitalis, belladonna, and alterations of blood pressure were discussed, and numerous pulse tracings were exhib-

ited. The post mortem examination revealed well marked arteriosclerosis, with fatty and fibroid changes in the heart muscle.

Dr. WILLIAM PEPPER said that an interesting point to him was the lack of our ability to feel these small extra systoles. Even with the finer instruments, at times, one could not perceive them at the wrist or in the brachial artery. He would not say that we were able to tell whether in the small beats the valves opened or not, but he thought that, when we were unable to detect by instrumental means any wave in the peripheral arteries, probably the aortic valves had not opened.

Dr. W. T. LONGCOPE asked Dr. Norris whether any experiments had been made upon animals with a view to raising the pulse rate by increasing the blood pressure.

Dr. S. SOLIS COHEN asked Dr. Norris to include the effect of local applications of heat and cold over the præcordium in continuing to test in various ways what had been well termed the reserve force of the heart. A rough but quite a ready way of determining the amount of good cardiac muscle remaining was to note by the finger the response of the heart to momentary applications of heat followed by cold. When the response was good the prognosis was rather favorable. When this application increased the arrhythmia the prognosis was bad.

Dr. ROBERT N. WILLSON, Jr., said that in studying certain problems in tuberculosis of the guinea pig he had noticed, upon taking out the heart, that when it was exposed to the air the pulsation, which almost immediately after removal of the heart assumed the character of a fibrillary tremor, again changed its nature. The ventricular contractions stopped almost completely, and the auricular systoles continued their rhythm. Then the auricular contraction seemed to cease and the ventricular were resumed and later again discontinued. Then for a time, and occasionally, both were synchronous. Finally, before the contractions stopped altogether, the ventricular systoles gradually increased in power and extent, and the contractions seemed to recede toward the auricle and then toward the great sinus and then disappear. If these phenomena were produced in any such way in the human body in disease, it must be that very trifling alterations in the conditions of the body, chemical changes, etc., assumed great importance in alteration of the normal beat. This would account for many of the conditions which we now tried to explain along chemical lines. It was his belief that the significance of the auricular and ventricular contractions was by no means thoroughly explained, and that when we had got to the bottom of the difficulty it would have been along different lines from that suggested tonight. If the human heart acted like the guinea pig's, he thought the conditions in disease were not understood. We knew simply that dissociation of the auricles and ventricles was possible. The causal factors and the governing laws still remained obscure.

Dr. JOHN B. ROBERTS had been interested in watching the intermission of a pulse beat in two boys who had had measles. In one case the intermittent pulse was present for a year and a half af-

ter the attack and finally disappeared. His explanation was that there was a mild myocarditis. In another case of the same kind, at the time of the intermission of the pulse he had noticed the extra beat of the heart, suggesting the motion of a fish lying in the bottom of a boat. This, he supposed, was the extra systole. The boy seemed to be better under belladonna than under digitalis, although the improvement might have been due to the fact that he was regaining the general tone of the muscle, and the irritability was subsiding under the influence of time rather than from the belladonna.

Dr. A. A. ESHNER said that the case emphasized his view that there was a relation between the varied forms of myocardial degeneration that for convenience's sake we classified clinically as myocarditis and the condition of heart block. It seemed to him that degeneration of the heart muscle, whether fibroid or gummatous, not necessarily involving the auriculoventricular conducting bundle of His, might cause degeneration in conductivity or contractility or in the other attributes of the muscular wall of the heart, and give rise to disorders of rhythm that we included under the general designation of arrhythmia, of which heart block must be considered as an extreme type. He imagined that the underlying factor in the circulatory variations was the state of the myocardium, and that by reason of its inefficiency it was unable to compensate for the increased burden thrown upon the heart by the increased blood pressure.

Dr. NORRIS, answering Dr. Longcope, said that it had been repeatedly shown that partial ligation of the aorta in animals would produce extra systoles. As to Dr. Roberts's query and report of the cases, it was quite common to find arrhythmia in young children, particularly after febrile attacks. The type was better designated as sinus arrhythmia. It was probably due to overaction of the vagus nerve affecting the sinus rhythm. Therefore, when we gave belladonna, which depressed the vagus nerve, the arrhythmia disappeared. Replying to Dr. Willson, while he did not mean to indicate that we had by any means cleared up the whole question, taking up the matter on the basis of the myogenic theory, and considering the five functions of the heart muscle independently, we were able to theorize just as Ehrlich's hypothesis of the blood complement had furnished the bacteriologist with a working basis. Dr. Eshner, in his remarks about blood pressure, had stated what he had intended to say.

Spasm of the Arteries and a Report of a Case of Vasomotor Neurosis.—Professor PAUL LAZARUS, of Berlin, presented by invitation this paper, which was afterward translated and abstracted by Dr. A. A. Eshner. Professor Lazarus spoke on the vasomotor neuroses. He dealt with functional in contradistinction to anatomical disorders. Under ordinary conditions the circular muscular fibres of the arteries predominated in action over the longitudinal fibres, thus maintaining normal vascular tone. This might be increased by a variety of influences acting from without or from within. Vasomotor neuroses might be of two types, hypertonic or hypotonic, or there might be a combination of the two. Among them might be included migraine, exophthalmic goitre, sclerodactylism, scleroderma.

Raynaud's disease, erythromelalgia, paræsthetic neuralgia, dermatographism, angina pectoris, pseudo-angina, the Stokes-Adams syndrome, paroxysmal hæmoglobinuria and hæmaturia, the crises of locomotor ataxia, and vasomotor ataxia. He cited an instance in which arteriosclerosis developed in the train of long continued increase in blood pressure apparently of functional origin. He cited another instance in which, in the sequence of emotional shock, pallor, cyanosis, atrophy, and gangrene developed in the upper part of the body, while hyperæmia and hypertrophy developed in the lower part. He pointed out that no functional disturbance could take place without vasomotor or nutritive change.

Dr. S. SOLIS COHEN said that there seemed to be three elements in the origin of vasomotor disorders: 1. A constitutional liability of the patient. 2. An exciting cause. 3. The point, which to him was most obscure, a local determinant. Just why the same patient should have at one time migraine, at another a condition simulating hepatic colic, at another hemianæsthesia or asthma or urticaria or circumscribed oedema of the skin or mucous membranes, was yet to be determined. In some instances a very slight mechanical force, scarcely to be termed trauma, determined it. At other times the exciting agent, a toxine, or thermic change, acted locally, as when the hand plunged into ice water exhibited Raynaud's phenomena or intestinal fermentation gave rise to enteralgia. But why, as in a case he had shown Professor Lazarus, a patient who had recovered from Graves's disease should be troubled with recurrent spasm of the temporal artery, so that we could see the vessel become more distended and more tortuous, above the point of constriction, this being accomplished with intense pain which lasted for a minute or two and which could be relieved immediately by the administration of nitroglycerin to relax the spasm, or why, as in another case he had exhibited to our guest hæmoglobinuria followed the application of ice to the loins or to the feet, he did not know; but evidently there was a local determinant in each case. The important point was that we should diagnose the individual rather than the attack. He wished to express his own indebtedness to Professor Lazarus for reporting this extremely interesting case, in which he had seen what he had indicated and asserted to be probable, the actual development of organic lesions from a disturbance of emotional origin.

Letters to the Editor.

A DEATH FROM ETHER.

HAZLETON, Pa., December 13, 1909.

To the Editor:

The following is a brief report of a death during the administration of ether, and is given for statistical value, as I believe all such cases should be published.

K. D., female, age forty-one, married, was admitted to the hospital on December 8, 1909, for operation on umbilical hernia. She was seen by Dr. H. M. Neale a few days before her admission, and he at once advised an operation for the radical cure of the

condition, which had existed for several years. Examination showed a large hernia at the umbilicus and extending above and below, the ring being small. The patient was excessively fat and had asthma, cough, and a big fatty heart, with weak impulse.

The urine was practically normal. She was prepared for operation two days ahead by stimulation, attention to the excretions, and diet. The abdomen was prepared in the usual way, and cleansed finally by formaldehyde soap.

On December 11th, at 10:30 a. m., she was given a hypodermic injection of morphine $\frac{1}{4}$ gr., atropine 1/150 gr., and scopolamine 1/100 gr. Ether was administered by the drop method, supplemented by oxygen, as she was cyanotic, and did not take the ether well, although she did not at any time cough or have troublesome mucus. The operation, by the Mayo method, was rapidly performed and the dressings were about to be applied when *respiration* and *heart action stopped*, apparently *simultaneously*. All efforts to revive her were in vain.

She had no ether during the last five minutes of the operation, but had oxygen almost continuously. She was breathing regularly, though she was somewhat cyanosed, up to the moment of death, which was *instantaneous*.

This is the first death I have had from anæsthesia in a very large number of cases, extending over a good many years, and, while we use *chloroform* almost exclusively in our work, this, our only death, took place under *ether* and in combination with oxygen, the patient dying with the apparent paralyzing of the heart usually attributed to chloroform. There were present during the operation, Dr. Moyer, Dr. Fagan, Dr. MacKellar, Dr. Harington, and myself.

WALTER LATHROP.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Causes of Disability as Applied under Accident and Health Insurance Policies. With Special Chapters on Policy Forms, Advantages of Examining for Accident Insurance Companies, Necessary Qualifications for Successful Examiners, Method of Making Examinations, etc. Designed for the Use of Insurance and Fraternal Examiners, General Practitioners and Students of Medicine, Attorneys, and Corporations. By CHARLES HAMILTON HARBAUGH, M. D., Expert Examiner and Adjuster; Medical Director, American Insurance Company, etc. Illustrated with 123 Half Tones and Fifteen Full Page Plates, Eleven in Colors. Philadelphia: Overbrook Publishing Company. Pp. xvi-650. (Price, \$6.)

The great extent of health, accident, and liability insurance in this country and the many physicians engaged in professional work connected with that insurance make some guide like the present volume a useful book for study and reference.

The author discusses the advantages of making these examinations and the necessary qualifications for a successful examiner. He then describes the general features of accident, health, and liability insurance examinations, with the policy forms used by the first two, and proceeds to the technical part

of his subjects. He describes the injuries and diseases of different bodily regions caused by accidents and resulting in disability, the illnesses that cause disability, and the adjustment of claims for disability arising from accident or disease.

There is a chapter devoted to the methods of securing appointments as examiner, and it is feared that if the plan described was followed generally it would result in an impression upon the mind of the medical director that would be likely to defeat the end sought for. The work is well illustrated with carefully selected cuts, though that on page 92, of an operation for acute mastoiditis, seems out of place in such a volume.

Diseases of the Ear.—A Textbook for Practitioners and Students of Medicine. By EDWARD BRADFORD DENCH, Ph. B., M. D., Professor of Diseases of the Ear in the University of Bellevue Hospital Medical College; Aural Surgeon, New York Eye and Ear Infirmary, etc. With Nineteen Plates and One Hundred and Fifty-eight Illustrations in the Text. Fourth Edition, Revised and Enlarged. New York and London: D. Appleton & Co., 1909.

The latest edition of Dench's excellent textbook keeps well abreast of the advances made in otology during the past six years. The section on brain abscess has been practically rewritten from a clinical point of view. The symptomatology, diagnosis, and operative treatment of labyrinthine suppuration receive thorough and detailed attention. A number of new illustrations from dissections by the author have been added, and they show the completed mastoid operation, the radical operation, and the procedure for labyrinthine suppuration. It is to be hoped that in the next edition the subject of clinical bacteriology and its relations to the diagnosis and prognosis of otitic sepsis and of septic sinus thrombosis will be taken into consideration. The value of blood cultures in the recognition or exclusion of this complication is generally admitted, and is of sufficient importance to have a place among the other diagnostic methods.

Immunity and Specific Therapy. By W. D'ESTE EMERY, M. D., B. Sc., London, Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green, etc. With Illustrations. New York: Paul B. Hoeber, 1909. Pp. xiv-448.

This is a résumé of the work done in the attempt to elucidate the problems of bacterial infections and the reaction of the animal organism to those infections. The works reviewed date back to 1890, although the majority of them have appeared since 1900. The book begins with an excellent glossary. The titles of the various chapters are (1) introduction and general, (2) on the nature of toxins, (3) the phenomena of antitoxine formation, (4) interactions of toxine and antitoxine, (5) origin of antitoxine—the side chain theory, (6) immunity to toxins, (7) bacteriolysis and allied phenomena, (8) the agglutinins, (9) the precipitins, (10) phagocytosis, (11) "reactions" and similar phenomena, (12) colloidal theory of antibodies, (13) on immunity to bacteria, (14) practical applications.

The author takes no stand in regard to the various theories advanced to account for the different phenomena that have been observed in the course of studies on bacteriolysis, hæmolysis, phagocytosis, and immune body production. The views of the

various authors are stated in a concise and fair manner, and the reader is left to draw his own conclusions among conflicting theories.

Certain phenomena have been observed, certain hypotheses have been advanced to explain them. Much work is needed before one or another hypothesis shall be determined to express the facts or before all shall be discarded. There is a fairly complete bibliography, and a list of authorities cited in the text. The book does not contain directions for carrying out investigations.

Surgical Diagnosis. By DANIEL N. EISENDRATH, A. B., M. D., Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. Second Edition, Thoroughly Revised and Enlarged, with 574 Original Illustrations, Twenty-five of them in Colors. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 885. (Price, \$6.50.)

In the very thorough revision and enlargement that the author has made of this book, he has held to his original plan to discuss the question of diagnosis from the clinical standpoint chiefly, and has omitted mention of the ætiology, pathology, and treatment of the various surgical conditions. Even with this careful restriction the second edition includes more than a hundred additional pages and eighty-six more illustrations.

In treating the subject the author has grouped injuries and diseases by region or organ, as the surgeon considers them to make a diagnosis. Among the more important additions are sections on secondary peritonitis, on pyelonephritis, on subphrenic abscess of intraperitoneal form, on diverticulitis, on retroperitoneal neoplasms, on gastric ulcer, and on congenital idiopathic dilatation of the colon.

It is believed that in the section on wry neck emphasis should be placed on insufficiency of the ocular muscles as a cause of the condition. While there is a good description of the method of cystoscopy, there is none of proctoscopy or of the method of using the x ray for diagnostic purpose. The illustrations are excellent, but Fig. 21 has been printed upside down.

Medical Inspection of Schools. By A. H. HOGARTH, M. B., B. Ch., Oxon., D. P. H., County Medical Officer of Health for Buckinghamshire, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. 360. (Price, \$2.)

Medical Inspection of Schools. By LUTHER HALSEY GULICK, M. D., Director of Physical Training, New York Public Schools, and LEONARD P. AYRES, General Superintendent of Schools of Puerto Rico, 1900-1908. New York: Charities Publication Committee, acting for the Russell Sage Foundation, 1908. Pp. 276.

The achievements of a people who have a national history of nearly fifteen hundred years, cannot fail to excite the admiration of thoughtful men. At the same time the successes of such a nation are prone to breed injustices that make the historian blush at the shortsightedness implied. All branches of the Anglo-Saxon race must be proud of what has been done by that section of their common stock known as the English. But nearly all can see the points at which the English have failed to grasp opportunities evidently at hand. Among such opportunities the education of the common people and the care of their physical well being stand preeminent.

The book by Mr. Hogarth contains one of the severest arraignments of the English educational and sanitary policies that we remember to have read.

The traveler to-day finds in England side by side the highest education and the lowest ignorance, the greatest wealth and the greatest poverty, and he is astonished to find in a land of such opportunity so many idle hands. Education is not a panacea, but it is an important remedy for many national ills. The education of the children of a nation, not only along intellectual lines, but also along the lines of hygiene, will result finally in a physically strong and mentally powerful people. We of the United States, in our period of marvelous progress, must remember the mistakes of others, in order that the labors of our ancestors and the traditions established by them shall not come to naught.

The medical inspection of schools, in addition to detecting the early symptoms of infectious and transmissible diseases, succeeds in discovering and correcting defects in vision and in hearing, in correcting bad habits of personal hygiene, and in inculcating by example as well as by precept the value of light, air, exercise, and water in the development of a sound mind within a sound body.

The medical inspection of schools is an important side of the physician's activities. The school is the place in all the world in which to begin the development of a strong race, free from prejudice and of a discriminating judgment.

The book by Gulick and Ayres deals with the subject of medical inspection of schools more from the viewpoint of the details of the work to be done, while that of Hogarth is more in the nature of a philosophical presentation of the subject. Gulick and Ayres's book contains a valuable bibliography. That in Hogarth's book is less comprehensive.

MEDICOLITERARY NOTES.

There is a curious tendency in American speech to the formation of unnecessary verbs that may be called frequentative, verbs framed from nouns that have already a corresponding verb. Such a verb is obligate, which has been coined by persons ignorant of the real meaning of oblige. Evolute is another curio of minds ignorant of the word evolve or unsatisfied with it. The latest horror is from the pen of no less famous a writer than the poetess of pleasure and passion who recently wrote of "a destructing fire." To be sure, there is an archaic form, destruct, but it is improbable that Mrs. Wilcox goes to mediæval dictionaries for epithets to adorn a penny evening paper.

Most old fashioned graduates will not be sorry to learn that the system of electives is to be restrained at Harvard, and that henceforward the A. B. will not be conferred on specialists in arithmetic and football, however scientific. We give our word that not long ago we heard an A. B. of Yale gravely expressing his disbelief that Cæsar could have written *Omnis Gallia, omnes* existing only in the plural according to this youthful savant. A. B., whether a valuable title or not, stands or should stand for something definite in classical reading, and some other degree should be devised for students of other matters. L. Sc. D., *ludi scien-*

the doctor, doctor of sporting science, might do as a certificate of one kind of proficiency.

Galen, before he studied medicine, was thoroughly educated in literature, mathematics, and philosophy. His skill in diagnosis was what made him soon distinguished in Rome and caused great jealousy among his colleagues. He tells a most naive story of the occasion when he was called in to see the emperor Marcus Aurelius, who was suffering from colic and diarrhoea which the skill of a number of physicians had not been able to control. Upon his arrival in the royal presence he found a large number of consultants present and took great pleasure in allowing them to betray their ignorance of the case before he condescended to prescribe. Besought by the emperor to relieve the imperial pangs, Galen stated in an impressive and theatrical manner, making the most of the excellent *mise-en-scène*, that were the patient merely a common person, he would prescribe a little pepper in a glass of wine; but that, in view of the rank of the sufferer, he recommended an external application of wool soaked in hot oil of valerian. The emperor lost no time in taking both prescriptions, and, experiencing early relief, announced to the disgusted audience of quacks that there was but one real physician and honest man in the empire. One can picture the sublime exit of Galen with his nose in the air, amid a muffled chorus of envious growls from the disgruntled faculty in the background.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the surgeon general, Public Health and Marine Hospital Service, during the week ending December 17, 1909:

Place.	Date.	Cases.	Deaths.
<i>Smallpox—United States.</i>			
Alabama—Montgomery.	Nov. 20-27.	23	
California—San Francisco.	Nov. 20-27.	1	
Colorado—Fruita.	Nov. 20-27.	8	
Connecticut—Stamford.	Nov. 1-30.	1	
Indiana—Marion.	Nov. 27-Dec. 4.	1	
Indiana—South Bend.	Nov. 23-30.	4	
Kansas—Independence.	Nov. 27-Dec. 4.	2	
Louisiana—New Orleans.	Nov. 27-Dec. 4.	1	
Michigan—Bay City.	Nov. 28-Dec. 4.	3	
Minnesota—Duluth.	Nov. 20-Dec. 4.	4	
Mississippi—Brookhaven.	Oct. 30-Nov. 6.	1	
Mississippi—Natchez.	Nov. 20-27.	5	
Missouri—St. Louis.	Nov. 27-Dec. 4.	3	
Missouri—St. Louis.	Nov. 20-27.	1	
North Carolina—Charlotte.	Nov. 20-Dec. 4.	8	
North Carolina—Hickory.	Oct. 30-Nov. 6.	1	
North Carolina—Hickory.	Nov. 20-27.	3	
Ohio—Dayton.	Nov. 20-Dec. 4.	1	
Tennessee—Memphis.	Nov. 20-27.	2	
Tennessee—Nashville.	Nov. 27-Dec. 4.	1	
Texas—Paris.	Nov. 20-27.	29	
Vermont—Stevensville.	Nov. 20-27.	1	
Wisconsin—Smithfield.	Nov. 20-27.	1	
Wisconsin—La Crosse.	Nov. 20-27.	1	
Wisconsin—Superior.	Nov. 20-27.	1	
<i>Smallpox—Insular.</i>			
Porto Rico.	Nov. 1-30.		10
<i>Smallpox—Foreign.</i>			
Brazil—Bahia.	Oct. 22-Nov. 5.	12	26
Brazil—Rio de Janeiro.	Oct. 24-Nov. 5.	3	
Chile—Valparaiso.	Oct. 30-Nov. 6.	3	Present
India—Madras.	Nov. 2-9.	1	
India—Rangoon.	Oct. 23-29.	1	
Indo-China—Saigon.	Oct. 16-23.	1	
Italy—General.	Nov. 14-21.	10	
Italy—Naples.	Nov. 14-21.	0	2
Italy—Turin.	Oct. 21-28.	1	
Java—Batavia.	Nov. 16-23.	1	16
Mexico—Guaymas.	Nov. 14-21.	1	3
Mexico—Chihuahua.	Nov. 14-21.	1	
Mexico—Mexico City.	Oct. 30-Nov. 6.	1	
Mexico—Monterrey.	Nov. 21-28.	1	

Place.	Date.	Cases.	Deaths.
Portugal—Lisbon.	Nov. 13-20.	11	
Russian—Tientsin.	Nov. 7-14.	5	1
Russia—Moscow.	Oct. 23-Nov. 6.	4	1
Russia—Odessa.	Oct. 23-Nov. 13.	19	4
Russia—Riga.	Oct. 23-Nov. 13.	7	
Russia—St. Petersburg.	Oct. 23-Nov. 13.	94	36
Russia—Warsaw.	Oct. 18 Oct. 9.	1	10
Spain—Almeria.	Oct. 1-31.	3	
Spain—Barcelona.	Nov. 8-22.	2	
Spain—Valencia.	Oct. 23-30.	1	1
Spain—Santiago.	Oct. 9-10.	1	2
Tripoli—Tripoli.	Oct. 31-Nov. 13.	7	
<i>Yellow Fever—Foreign.</i>			
Brazil—Manaos.	Nov. 6-13.		1
Brazil—Para.	Nov. 6-20.	6	3
Ecuador—Guayaquil.	Oct. 11 Nov. 13.		8
Mexico—Merida.	Nov. 29.	1	
Mexico—Palo.	Nov. 29.	1	
<i>Cholera—Foreign.</i>			
India—Bombay.	Oct. 27-Nov. 9.	4	
India—Calcutta.	Oct. 27-Nov. 9.	7	
India—Calcutta.	Oct. 23-30.	9	
India—Rangoon.	Oct. 16-30.	7	
Japan—Batavia.	Nov. 17.	1	Present
Manchuria—Dairen.	Oct. 6-26.	1	11
Manchuria—Dairen.	Oct. 25-Nov. 1.	2	2
Russia in Asia—Yakutsk.	Sept. 22-Oct. 23.	113	83
Russia in Europe—General.	Oct. 31-Nov. 6.	152	28
Russia in Europe—St. Petersburg.	Oct. 31-Nov. 6.	81	20
Russia in Europe—St. Petersburg government.	Oct. 31-Nov. 6.	22	11
<i>Plague—Foreign.</i>			
Brazil—Bahia.	Oct. 22-Nov. 5.	7	3
Brazil—Rio de Janeiro.	Oct. 25-Nov. 1.	2	
China—General.	Oct. 23-30.		Present
Ecuador—Guayaquil.	Oct. 9-23.	21	
Ecuador—Guayaquil.	Oct. 30-Nov. 13.	34	
India—General.	Oct. 23-30.	4,287	3,450
India—Bombay.	Oct. 23-30.	1	11
India—Calcutta.	Oct. 6-16.	5	
India—Calcutta.	Oct. 16-30.	10	
India—Rangoon.	Oct. 23-30.	6	
Indo-China—Saigon.	Oct. 23-30.	5	5
Japan—Kobe.	Nov. 17.		Present
Japan—Osaka.	Nov. 17.	1	

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending December 15, 1909:

ALTREE, G. H., Acting Assistant Surgeon. Granted four days' leave of absence from November 2, 1909, without pay.

BAILEY, C. A., Acting Assistant Surgeon. Granted twenty days' leave of absence from December 12, 1909.

BLUE, RUPERT, Surgeon. Granted four months' leave of absence from January 1, 1910, with permission to go beyond the seas.

BRANHAM, H. M., Acting Assistant Surgeon. Granted three days' leave of absence from December 15, 1909, without pay.

BROWN, P. L., Pharmacist. Granted seven days' leave of absence from December 23, 1909.

CORPUS, G. M., Passed Assistant Surgeon. Granted sixteen days' leave of absence from December 15, 1909.

CREEL, R. H., Passed Assistant Surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to Evansville, Ind., and assume temporary command. Granted one day's leave of absence en route to station.

DE VALIN, HUGH, Passed Assistant Surgeon. Directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty.

FOSTER, S. B., Acting Assistant Surgeon. Granted twenty-two days' leave of absence from December 10, 1909.

FRANCIS, EDWARD, Passed Assistant Surgeon. Granted six days' leave of absence from December 6, 1909, under paragraph 191, Service Regulations.

GOODMAN, F. S., Pharmacist. Granted fourteen days' leave of absence from December 18, 1909, and fifteen days from January 1, 1910.

HUNT, REID, Chief, Division of Pharmacology, Hygienic Laboratory. Detailed to attend the meetings of the American Association for the Advancement of Science and affiliated societies, to be held in Boston, Mass., December 27, 1909, to January 1, 1910.

KORN, W. A., Passed Assistant Surgeon. Granted one day's leave of absence, December 22, 1909.

LAVINDER, C. H., Passed Assistant Surgeon. Granted four days' leave of absence from December 13, 1909, under paragraph 191, Service Regulations.

- LUMSDEN, L. L., Passed Assistant Surgeon. Granted seven days' leave of absence from November 29, 1909, under paragraph 191, Service Regulations.
- PETTYJOHN, JOSEPH, Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to New Orleans, La., and report to the medical officer in command for duty and assignment to quarters. Granted one month's leave of absence *en route* to stations.
- RYDER, L. W., Pharmacist. Granted four days' leave of absence from December 6, 1909, under paragraph 210, Service Regulations.
- SAFFORD, M. V., Acting Assistant Surgeon. Granted seven days' leave of absence from December 7, 1909, under paragraph 210, Service Regulations.
- SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Granted five days' leave of absence, under paragraph 191, Service Regulations.
- STONER, J. B., Surgeon. Upon being relieved by Passed Assistant Surgeon R. H. Creel, directed to proceed to Port Townsend, Wash., and assume command.
- WATSON, H. J., Acting Assistant Surgeon. Granted nineteen days' leave of absence from December 13, 1909.
- WHITE, J. H., Surgeon. Granted eight days' leave of absence from December 11, 1909.
- WILLE, C. W., Passed Assistant Surgeon. Granted two days' leave of absence from December 8, 1909.

Board Convened.

Board of medical officers convened to meet at Montreal, Canada, December 6, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon Eugene H. Mullan, chairman; Acting Assistant Surgeon C. K. Russell; Acting Assistant Surgeon Handsford McKee, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 18, 1909:

- ANDERSON, E. A., First Lieutenant, Medical Reserve Corps. Relieved from duty at Pacific branch U. S. Military Prison, Alcatraz, and ordered to Fort Rosecrans, Cal., for duty.
- BAKER, FRANK C., Major, Medical Corps. Left Fort Moultrie, S. C., on twenty days' leave.
- BARRISTER, WILLIAM B., Major, Medical Corps. Assigned in addition to his present duties at Fort Snelling, Minnesota, to temporary duty as Chief Surgeon, Department of Dakota.
- CARD, DANIEL P., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty, February 5, 1910.
- DARNALL, MOSES N., First Lieutenant, Medical Reserve Corps. Ordered to Fort Washington, Md., for duty.
- DOERR, CHARLES E., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty, February 5, 1910.
- FAUNTLEROY, P. C., Major, Medical Corps. Ordered to proceed to Fort Benjamin Harrison, Indiana, to the Army General Hospital, Fort Bayard, New Mexico, for transfer duty.
- GARCIA, LOON C., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty, February 5, 1910.
- HEARD, GEORGE P., Captain, Medical Corps. Honorably discharged from the service of the United States.
- HEATH, GEORGE D., Jr., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty, February 5, 1910.
- KENNEDY, JAMES M., Major, Medical Corps. Ordered upon expiration of his present leave of absence to return to his proper station, Army General Hospital, San Francisco, Cal.
- LYSTER, THEODORE C., Major, Medical Corps. Granted four months' leave, to take effect upon his relief from duty with the Isthmian Canal Commission, with permission to go beyond sea.
- MAGEE, JAMES C., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty, February 5, 1910.
- SMITH, WILLIAM H., First Lieutenant Medical Corps. November 30 left Fort Ruger *en route* to Fort Shafter, Honolulu, for duty.

- SWEETZEE, VERGE E., Captain, Medical Corps. Granted fifteen days' leave of absence.
- WINTER, FRANCIS A., Major, Medical Corps. Ordered to proceed to St. Louis, Mo., on business pertaining to the Medical Department.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 18, 1909:

- BAKER, M. C., Assistant Surgeon. Detached from the *Ohio* and ordered to the Naval Recruiting Station, Cincinnati, Ohio.
- BENTON, F. L., Surgeon. Detached from the *Franklin* and ordered to the *Prairie*.
- CLIFTON, A. L., Assistant Surgeon. Detached from the Naval Recruiting Station, Cincinnati, Ohio, and ordered to duty in connection with the fitting out of the *Michigan* and to duty on board that vessel when placed in commission.
- SHIPPEN, L. P., Assistant Surgeon. Detached from the Naval Prison, Portsmouth, N. H., and ordered to the *Prairie*.
- STEEPE, J., Passed Assistant Surgeon. Detached from the Naval Station, Newport, R. I., and ordered to the *Franklin*.

Births, Marriages, and Deaths.

Married.

- RYDER—UPTON.—In Boston, Massachusetts, on Wednesday, December 15th, Passed Assistant Surgeon Charles Edward Ryder, United States Navy, and Miss Ellen Friend Balch Upton.

Died.

- DEWEY.—In Peterboro, New York, on Monday, December 6th, Dr. Frank E. Dewey, aged sixty years.
- DUNDORE.—In West Leespport, Pennsylvania, on Wednesday, December 15th, Dr. F. P. Dundore, aged sixty-two years.
- FITZPATRICK.—In Lemont, Illinois, on Wednesday, December 1st, Dr. John A. Fitzpatrick, aged fifty-five years.
- GRANT.—In Lena, Wisconsin, on Monday, November 29th, Dr. Joseph C. Grant, aged forty years.
- GREEN.—In Philadelphia, on Monday, December 13th, Dr. Charles Green, of Greenville, Delaware.
- HARKNESS.—In Stockton, California, on Thursday, September 2d, Dr. George S. Harkness, aged fifty-two years.
- HARRINGTON.—In Kansas City, Missouri, on Wednesday, December 8th, Dr. James Louis Harrington, aged forty-two years.
- HILL.—In Boston, Massachusetts, on Thursday, December 9th, Dr. John B. Hill, aged seventy-two years.
- LANKFORD.—In Sherman, Texas, on Monday, December 6th, Dr. S. C. Lankford, aged fifty-nine years.
- LIKEN.—In Toledo, Ohio, on Saturday, December 11th, Dr. J. F. Liken, aged forty-seven years.
- MARSHALL.—In Tuckahoe, New Jersey, on Wednesday, December 1st, Dr. Joseph C. Marshall, aged sixty-one years.
- MONVILLE.—In Philadelphia, on Saturday, December 4th, Dr. Elizabeth Genevieve Monville.
- PAINCHAUD.—In Klotzville, Louisiana, on Sunday, December 5th, Dr. Edward François Painchaud, aged eighty-six years.
- REILLY.—In Chicago, on Thursday, December 16th, Dr. Frank W. Reilly.
- RISLEY.—In Brooklyn, on Friday, December 10th, Dr. Frank E. Risley, aged fifty-five years.
- SAPPINGTON.—In Libertytown, Maryland, on Wednesday, December 8th, Dr. Thomas P. Sappington, aged sixty-two years.
- STONE.—In South Framingham, Massachusetts, on Tuesday, December 14th, Dr. Henry Orne Stone, aged ninety-one years.
- VALENTINE.—In New York, on Monday, December 13th, Dr. Ferdinand C. Valentine, aged fifty-nine years.
- WEEKS.—In Cleveland, Ohio, on Thursday, December 9th, Dr. John J. Weeks, aged eighty-one years.

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